



KYLE PITSOR
Vice President, Government Relations

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VIA EMAIL TO: GSL2013STD0051@ee.doe.gov

Ms. Lucy deButts
US Department of Energy
Buildings Technologies Program
Mail Stop EE-2J
1000 Independence Ave, SW
Washington, DC 20585-0121

NEMA Comments on Energy Conservation Program: Energy Conservation Standards Rulemaking Notice of Proposed Definition and Data Availability (NOPDDA) for General Service Lamps

Docket Number: EERE-2013-BT-STD-0051
RIN: 1904-AD09

Dear Ms. deButts,

As the leading trade association representing the manufacturers of electrical and medical imaging product manufacturers, the National Electrical Manufacturers Association (NEMA) provides the attached comments on the Department of Energy's Notice of Proposed Definition and Data Availability for General Service Lamps. These comments are submitted on behalf of NEMA Light Source Section member companies.

NEMA, founded in 1926 and headquartered in Arlington, Virginia, represents nearly 400 electrical and medical imaging manufacturers. Our combined industries account for more than 350,000 American jobs and more than 7,000 facilities across the U.S. Domestic production exceeds \$117 billion per year.

Please find our detailed comments attached. Our member companies count on your careful consideration of these comments and look forward to an outcome that meets their expectations. If you have any questions on these comments, please contact Alex Boesenberg of NEMA at 703-841-3268 or alex.boesenberg@nema.org.

Sincerely,

A handwritten signature in black ink that reads "Kyle Pitsor". The signature is written in a cursive, flowing style.

Kyle Pitsor
Vice-President, Government Relations

NEMA Comments on Energy Conservation Program: Energy Conservation Standards Rulemaking Notice of Proposed Definition and Data Availability for General Service Lamps

General Comments

1. NEMA strongly disagrees with the Secretary's proposal to redefine certain statutory definitions as described in the *Notice of Proposed Definition and Data Availability for General Service Lamps* (NOPDDA).¹ The Secretary's proposed approach is without authority, flies in the face of the statutory text, diverges substantially from the approach for this rulemaking laid out by Congress in the Energy Independence and Security Act of 2007, Pub.L. 110-140, and relies on revising the plain English to achieve the Department's ends. The Secretary's proposal would---

- Incorporate in this rulemaking *amended* energy conservation standards for already regulated, *non-exempt* incandescent lamps *not included* in the definitions of general service incandescent lamp and general service lamp, when Congress directed the Secretary to only consider discontinuing *exemptions* for *exempt* lamps and establish *new* standards for those currently exempt and excluded lamps;
- Include in the definitions of general service incandescent lamp and general service lamp types of specialty and other regulated lamps that Congress expressly said are "not included" in those definitions;
- Regulate specialty incandescent lamps whose lamp sales are declining or at best flat, when Congress specified that the condition precedent for regulating those lamps was that their unit sales must have "significantly increased since 2007;"
- Regulate "certain" specialty incandescent lamps for which Congress legislated a specific metric as a condition precedent for regulation that has not occurred;
- Regulate an enormous variety of lamps with special base configurations used almost entirely in commercial lighting applications and are not "used to satisfy lighting applications traditionally served by general service incandescent lamps," another legislative boundary Congress placed on the Secretary's ability to regulate lamps in this rulemaking.

NEMA took pains to describe the history of the statute's regulation of lighting products in its Comments responding to the Notice of Proposed Rulemaking (NOPR) in the proceeding. While reluctant to repeat what we have already articulated in the rulemaking about the statute, we take the time here to highlight five key provisions in the statute that bear on what Congress enacted so that we may refer to them in our more specific comments below. At the core of our disagreement with the proposed approach to modifying the definitions of "general service incandescent lamps" and "general service lamps" is the Secretary's claim of nearly unbounded "discretion", NOPDDA, 81 FR at 71803, to re-define these terms when the statute plainly shows that Congress left the Secretary very little discretion, as our summary below explains.

A. The definition of general service incandescent lamp. Congress defined "general service incandescent lamp" in very specific terms: (1) it is a "standard incandescent or halogen type lamp," (2) intended for general service applications; (3) has a medium screw base; (4) has a lumen range from 310 lumens to 2600 lumens; and (4) is capable of being operated at a voltage range at least partially within 110 and 130 volts. 42 U.S.C. §6291(30)(D)(i). In the next

¹ 81 FR 71794 (October 18, 2016).

clause of the statute, Congress made an unambiguous statement under the heading “Exclusions”: the term “general service incandescent lamp’ does *not include* the following incandescent lamps,” and enumerated 22 categories of incandescent lamp applications and lamps with unique globe shapes that are “not include[d]” in that definition as a matter of law. 42 U.S.C. §6291(30)(D)(ii)(emphasis supplied). Why are these various lamps not “general service incandescent lamps”? The answer is clear: none of these lamps are “*standard* incandescent or halogen type lamps” --- they have notable design differences and aesthetic attributes (typically associated with a unique of different application) in contrast to the “standard” incandescent light bulb.² Furthermore ---

- some of them lack a “medium screw base” and are regulated by other provisions in the statute applicable to different lamp bases (e.g. intermediate base and candelabra base);
- some of them have a lower lumen output level than the minimum lumens for a general service incandescent lamp and are not regulated; and
- some of them, notably most (but not all) types of incandescent reflector lamps, were already separately regulated by Congress and the Secretary under another subsection of the statute.

Congress’ term “Exclusion” in the heading of this second clause means “The . . . state of being excluded.” “Exclude” means: Deny access to a place, group, or privilege.” *Oxford Dictionary of English* (2010).³ That Congress meant “exclude” in this manner is unambiguously confirmed by the text of the statute that says the lamps on this list are “not include[d]”⁴ in the definition of general service incandescent lamp: They have been denied a place in the statutory definition. The clarity of Congress’ definition ends the agency’s inquiry whether the lamps among the 22 categories of “excluded” lamps are included in the definition of “general service incandescent lamps” or not. They are “not included.” The Secretary cannot redefine this term and convert what Congress expressly excluded into something that is suddenly included. No authority has been granted to the Secretary by Congress to redefine it the general service incandescent lamp in this manner, and we are incredulous that the Secretary would presume to have that authority.

B. The definition of general service lamp. The congressional definition of “general service lamp,” includes (I) “general service incandescent lamps”; (II) compact fluorescent lamps; (III) general service light-emitting diode (LED or OLED) lamps; and (IV) other lamps that the Secretary determines are used to satisfy lighting applications traditionally served by general service incandescent lamps.” 42 U.S.C. §6291(30)(BB)(i). In contrast to the Secretary’s total lack of authority to include what is “not included” in the definition of “general service incandescent lamp,” here the Secretary has limited authority to include “other lamps” provided that they are “used to satisfy lighting applications traditionally served by “general

² This is clear from the statutory definitions of several of the lamp types on this list: appliance lamps, candelabra base lamps, intermediate base lamps, rough service lamps, 3-way incandescent lamps, shatter-resistant lamps, vibration service lamps, colored incandescent lamps. 42 U.S.C. §6291(30)(T) – (AA) and (EE).

³ See the discussion in NEMA’s May 16, 2016 Comments on the NOPR in this proceeding at 18-19.

⁴ “Include: comprise or contain as part of a whole; make part of a whole or set.” *Oxford Dictionary of English* (2010). Here, Congress meant that these categories of specialty lamps are *not* “part of a whole or set” of general service incandescent lamps or general service lamps.

service incandescent lamps.” However, that authority is *limited* by the very next clause of this definition that states, without ambiguity, that the term “general service lamp” does “not include” (I) any of the lighting applications or bulb shapes that were excluded from the definition of “general service incandescent lamp” or (ii) general service fluorescent lamps or incandescent reflector lamps. 42 U.S.C. §6291(30)(BB)(ii). It is significant that Congress specifically called out incandescent reflector lamps in the second sub-clause of this exclusion, because reflector lamps are also included in the list of lamp shapes for excluded in the first sub-clause of the exclusion. Congress said the same thing twice in a single statutory breath and could not have been clearer: *Do not include or regulate incandescent reflector lamps within the definition of “general service lamps.”* Why? Because they are already regulated under another part of the statute and Congress did not want the Secretary regulating them in this proceeding.⁵

It is fair to ask what did Congress have in mind with respect to the limited authority it granted to the Secretary to include “other lamps . . . traditionally served by general service incandescent lamps” if it does not include the lamp shapes and applications on the list of lamps excluded from both definitions or it does not include general service fluorescent lamps or incandescent reflector lamps? The answer to this question benefits from the genesis of EISA-2007’s lighting amendments in Section 321: New lamp technologies. As NEMA explained in its May 16th Comments on the NOPR,⁶ this entire section of EISA 2007 became law because halogen technology was just being introduced as a replacement for the general service incandescent lamp and serious development of light-emitting diode (LED) technology was underway as a prospective replacement as well. And since EISA 2007 we can see a fluorescent technology that has emerged on the market that is similar but not identical to a compact fluorescent lamp: induction lamps. In addition to new technologies, NEMA believes that the Secretary could consider lamps with lamp bases other than medium screw base lamps, lamps outside the lumen range for general service incandescent lamps, lamps with other bulb shapes, and lamps outside the voltage range for general service incandescent lamps, provided that the lamp with a different base, bulb shape, or different lumen level or voltage is not on the list of excluded lamps in 42 U.S.C. §6291(30)(BB)(ii), and is “used to satisfy lighting applications traditionally served by general service incandescent lamps.” That is the limited discretion that Congress gave the Secretary to shape the definition of “general service lamp” in the proceeding.

C. The Secretary’s authority to regulate lamps “excluded” from general service lamp definition. The next provision in EISA-2007 relevant to the Secretary’s far-reaching proposal in the NOPDDA is titled “Extension of Coverage”. 42 U.S.C. §6295(j)(3)(E). This particular subparagraph (E) provided for a petitioning process by which persons could petition the Secretary to establish standards for lamp shapes or bases that are excluded from the definition of general service lamps and set very specific requirements for a Secretary of Energy granting such a petition: (1) the Petitioner had to “include evidence that the availability or sales of exempted incandescent lamps *have increased significantly* since the date on which the standards on general service incandescent lamps were established (December 19, 2007), 42 U.S.C. §6295(j)(3)(E)(ii), and (2) stated that the Secretary could grant the petition if the petition presents evidence that (I) demonstrates that “commercial availability or sales of exempted incandescent lamps *have increased significantly* since the date on which the standards on general service incandescent lamps were established and likely are being widely used in general lighting applications” and (II) significant energy savings could be achieved by covering exempted products as determined by the Secretary based on sales data provided to the

⁵ See the discussion in NEMA’s May 16, 2016 Comments on the NOPR in this proceeding at 22-23.

⁶ See the discussion in NEMA’s May 16, 2016 Comments on the NOPR in this proceeding at 10-11.

Secretary from manufacturers and importers.” 42 U.S.C. §6295(l)(3)(E)(iii). We note that no such evidence exists in the record of this proceeding that would warrant granting such a petition because sales of any lamp “increased significantly.” In fact sales for these specialty incandescent lamps excluded from the definition of general service incandescent lamp are, as NEMA members described at the October 21st public meeting in this proceeding, *decreasing, not increasing or, at best, flat.* NEMA’s point is simple: If the Secretary was the petitioning party, he could not grant his own petition.

Importantly, this provision too does not provide the Secretary with authority to change the definitions of general service incandescent lamp or general service lamps; *it only provides the Secretary with authority to “establish standards for lamp shapes or bases that are excluded from the definition of general service lamps.”* 42 U.S.C. §6295(l)(3)(E)(i)(emphasis supplied). That reinforces NEMA’s point in its May 16th Comments on the NOPR,⁷ where NEMA stated that the Secretary was given some authority to establish standards for *specialty lamps*, not to redefine the definitions by waving a wand converting specialty lamps into general service lamps when Congress expressly said that they are not.

D. Consideration of maintaining or discontinuing “exemptions” from energy conservation standards. The next provision in EISA-2007 relevant to the Secretary’s far-reaching proposal in the NOPDDA is titled “Standards for General Service Lamps” and the subparagraph titled Rulemaking Before January 1, 2014,” which is a reference to this proceeding. 42 U.S.C. §6295(l)(6)(A). In a clause of that subparagraph, the Secretary is authorized to determine, *inter alia*, whether “the exemptions⁸ for certain incandescent lamps should be maintained or discontinued based, in part, on exempted lamp sales collected by the Secretary from manufacturers.” 42 U.S.C. §6295(l)(6)(A)(i)(II). In implementing this provision, the Secretary cannot ignore the parallel provisions relating to discontinuing exemptions in §6295(i)(3)(E), which requires evidence of “increasing sales” of exempted lamps before the exemption can be discontinued. Furthermore, it is significant that lamp sales were the only factor expressly singled out in this clause, indicating that lamp sales would have primary importance just as they did in §6295(l)(3)(E).

E. A special pathway and condition precedent for regulating five types of excluded incandescent lamps. The only exception to the condition precedent that lamp sales for exempt incandescent lamp show that sales had “increased significantly” are the provisions relating to “Energy Efficiency Standards for Certain Lamps” at 42 U.S.C. §6295(l)(4). This provision relates to five types of specialty incandescent lamps, not included in the definitions of general service incandescent lamp or general service lamp, that Congress directed the Secretary to “track” the sales of and prescribe an energy conservation standard if a very specific metric was met with respect to each. Congress’ metric could not be clearer: “the reported annual sales rate for [each of the 5 types of] lamps demonstrates actual unit sales of [that lamp] that achieve levels that are at least 100% higher than modeled unit sales for that same year.” See 42 U.S.C. §6295(l)(4)(D)(i)(rough service), (E)(i)(vibration service), (F)(i)(three-way),

⁷ See the discussion in NEMA’s May 16, 2016 Comments on the NOPR in this proceeding at 16-22. The bolded text in the quoted sentence reinforces that Congress regarded these lamp shapes and bases as “excluded from the definition of general service lamps” even if the Secretary established standards for such lamps.

⁸ NEMA maintains its position stated in its May 16, 2016 Comments on the NOPR in this proceeding that “exemption” and “exclusion” have two very different meanings, and we reiterate this position here and in General Comment 2 below and note 16, *infra*.

(G)(i)(2601-3300 lumen), and (H)(i)(shatter-resistant). And for each of these lamps, Congress specified a default wattage cap energy conservation standard.

There was a reason why Congress singled out these five types of incandescent lamps for possible energy conservation standards. These five lamp types were the incandescent lamps that Congress perceived a greater possibility, as energy conservation standards for general service incandescent lamps went into effect beginning in 2010, consumers might switch to instead of purchasing lower wattage, more efficacious halogen incandescent lamps. The other exempt specialty lamps excluded from the definitions of general service incandescent lamp and general service lamp were not perceived as logical prospects for lamp switching or, in the words of the statute, being “used to satisfy lighting applications traditionally served by general service incandescent lamps.”

Because the five specialty lamps whose sales were tracked were perceived differently than other specialty incandescent lamps, Congress established a different, but very specific condition precedent for the Secretary before he could establish an energy conservation standard for these five specialty incandescent lamps. For all other exempt specialty incandescent lamps, unit sales of those lamps after the general service incandescent lamp standards were established in 2007 had to be increasing --- “significantly.” The authority to regulate these specialty lamps is nowhere stated as authority to redefine these lamps as “general service incandescent lamps” or “general service lamps” or to provide the Secretary with authority to redefine those two terms. The only authority granted to the Secretary is to establish energy conservation standards for them as specialty incandescent lamps provided that the specific statutory condition precedent for regulation had occurred.

Lamp switching. Where NEMA (and Congress) apparently disagree with the Secretary’s proposal in regard to lamp switching is that, in NEMA’s (and Congress’) view, lamp switching is data driven, and is not based on hunch, hypothesis, possibility, or imagination.⁹ The entire tenor of Section 321 of EISA 2007’s lighting product amendments to EPCA, cited above, is cohesive on that point: The requirement that the Secretary consider actual unit sales in these provisions of the Act is to determine whether lamp switching is actually occurring at the expense of more efficacious lamps. And the part of the definition of “general service lamps” that authorizes the Secretary to consider “other lamps” confirms that this is a data driven exercise: these other lamps must be “used to satisfy lighting applications traditionally served by general service incandescent lamps.”¹⁰ The use of the past tense (“used”) in this sentence unambiguously establishes that there must be an empirical, data-driven basis for a finding that these other lamps are operating in applications “traditionally served by general service incandescent lamps.” So there must be data showing that these specialty lamps are moving into

⁹ This was discussed at some length during the October 21, 2016 public meeting in this rulemaking, when NEMA members explained that the prospect of “lamp switching” for many of these lamps was only in the imagination. Other stakeholders at the public meeting supporting the Secretary’s proposal clearly indicated that they did not believe the Secretary had to rely on actual sales data trends, and could speculate about the prospect for lamp switching. The statutory text does not support a hypothetical or speculative approach.

¹⁰ As NEMA demonstrated in its May 16, 2016 Comments on the NOPR at 7-16, general service incandescent lamps have historically been understood by Congress to represent a “majority of the lighting applications” --- another indication that unit sales are very significant in recognizing Congress’ intent.

sockets traditionally used by general service incandescent lamps.¹¹ A declining or relatively insubstantial presence in the general service incandescent lamp socket is not enough.

The proposed definitions presented in the NOPDDA confirm that the DOE is bringing a pre-conceived framework to this rulemaking that is not consistent with the statutory text. DOE's framework is this: if manufacturers can make and sell a light-emitting diode (LED) version of an incandescent lamp that it believes have annual sales of more than three million units, then DOE is going to regulate the incandescent lamp out of existence before January 1, 2020. This framework is further confirmed by DOE's inquiry at the October 21st public meeting with the question presented as Item 11 below. In NEMA's Comments on the NOPR, we explained how the structure of the statute, including but not limited to the statute's two-tier approach to general service lamps rulemaking beginning in 2014 and a second rulemaking beginning in 2020 does not support that construction of the statute or that outcome.¹²

In summary, NEMA disagrees with the Secretary's proposed definitions in this NOPDDA in the following respects:

- A) The Secretary has no authority to amend the congressional definition of general service incandescent lamp;
- B) The Secretary has limited authority to include "other lamps" in the definition of "general service lamps," but that authority is nowhere near as broad as the Secretary claims in the NOPDDA.

The Secretary should adhere to the statute's approach to general service lamp regulation and specialty lamp regulation in this rulemaking, and embrace the definitions proposed by NEMA in its May 16, 2016 Comments on the NOPR in this proceeding. These are constructive definitions, consistent with the intent of Congress, balanced with constructive energy saving proposals that avoid the risk of unwitting regulatory error while productively minimizing regulatory burden.

2. "Exempt" and "exclude" mean very different things. In the NOPDDA, 81 FR at 71797, the DOE states:

"NEMA asserted that DOE has impermissibly read EPCA's use of the terms "exempted" and "excluded" as the same term, and that 42 U.S.C. 6295(i)(6)(A)(i)(II) does not authorize DOE to discontinue the exemptions for the 22 lamps listed under the GENERAL SERVICE INCANDESCENT LAMPS definition. (NEMA, No. 66 at pp. 17-18) DOE acknowledges that EPCA uses both the terms "exclusion" and "exempted"; however, in the context of GSLs and GENERAL SERVICE INCANDESCENT LAMPSs, DOE understands the term "exempted" to reference lamps listed under the "Exclusions"

¹¹As NEMA discussed in its May 16, 2016 Comments on the NOPR in this proceeding, the data required by Congress to evidence "switching" has been met in the case of vibration service and rough service incandescent lamps. This does not make them "general service incandescent lamps," but authorizes the Secretary to establish an energy conservation standard for those lamps. NEMA proposed energy conservation standards for these two lamps in a manner 100% consistent with Congress' expressly described approach in 42 U.S.C. §6295(l)(4)(D)(ii) and (E)(ii). See discussion in NEMA's May 16, 2016 Comments on the NOPR in this proceeding at 20-21 and 107.

¹² See discussion in NEMA's May 16, 2016 Comments on the NOPR in this proceeding at 25-26.

heading in the GENERAL SERVICE INCANDESCENT LAMPS definition. EPCA does not establish any “exemptions” for GSLs or GENERAL SERVICE INCANDESCENT LAMPSs using that term; so if “exempted” does not refer to “exclusions” or something comparable then the instruction in 42 U.S.C. 6295(i)(6)(A)(i)(II) has no application.”

DOE has mischaracterized or totally misunderstood NEMA’s point. NEMA did point out that the two words ‘exemption’ and ‘exclusion’ had two very different meanings and principles of statutory construction directed that they be given their distinct meanings. NEMA NOPR Comments at 17-18. Contrary to DOE’s characterization of NEMA’s argument, NEMA never said or argued that an excluded lamp could never be an exempt lamp. In fact, NEMA said just the opposite in its Comments: Most of the excluded lamps were exempt from energy conservation standards, but some were not. What NEMA pointed out is that certain excluded incandescent lamps were *not* “exempt” because Congress already assigned an energy conservation standard to those lamps, and *they clearly were not “exempt” from energy conservation standards.* NEMA identified the specific non-exempt lamps in its earlier Comments: (i) incandescent reflector lamps; (ii) intermediate base lamps; (iii) candelabra base lamps; (iv) appliance lamps; (v) vibration service lamps; (vi) T-shape lamps; (vii) B-shape lamps; (viii) BA-shape lamps; (ix) CA-shape lamps; (x) F-shape lamps; (xi) G16-1/2 shape lamps, (xii) G25 shape lamps, (xiii) G30 shape lamps, (xiv) S-shape lamps, and (xv) M-14 shape lamps.

DOE responds that the lamps listed (iv)-(xv) in the preceding paragraph do not have energy conservation standards attached to them merely by virtue of the fact that the wattage caps appear in the statutory definitions.¹³ When Congress added these definitions in EISA 2007, specifying wattage caps as Congress did, there were higher wattage versions of some or all of these specialty lamps and they were subsequently removed from the market by manufacturers resulting in some measure of energy savings as a result of the wattage cap. In other words, the definitions incorporating wattage caps were energy conservation standards and the market actually reacted to these standards just as the market reacts to all energy conservation standards by ceasing the manufacture of products that do not comply.¹⁴ The Secretary must consider the “now-infamous ‘duck test,’ dressed up in appropriate judicial garb: ‘WHEREAS it looks like a duck [energy conservation standard], and WHEREAS it walks like a duck [energy conservation standard], and WHEREAS it quacks like a duck [energy conservation standard], WE THEREFORE HOLD that it is a duck [energy conservation standard].” *Dole v. Williams Enterprises, Inc.*, 876 F.2d 186, 188 & n.2 (D.C. Cir. 1989). These wattage cap specifications in the definitions are in fact energy conservation standards, because they look, walk, and talk like energy conservation standards. They had the same market impact --- excluding those lamps from the market that did not meet the definition --- just as Congress intended by defining them in that manner.

¹³ “DOE disagrees with NEMA’s interpretation of the definitions of the identified lamps. The ‘standards’ to which NEMA refers for these lamps are the maximum wattage limits set under EPCA in defining the lamps for the purpose of excluding them from the definition of general service incandescent lamps. The maximum wattage provides definitional boundaries, not standards.” NOPDDA, 81 FR 71798.

¹⁴ Where NEMA’s Comments on the NOPR said that a particular specialty incandescent product was not “exempt”, we were careful to avoid saying “maintain exemption.” What we said in our comments was “do not amend” the congressional wattage cap standard for those lamps. See the discussion in NEMA’s May 16, 2016 Comments on the NOPR in this proceeding at 74-80, Table C.

DOE cannot possibly contend that the lamps Congress specifically declared are “not include[d]” in the definition of general service incandescent lamps can be included in the definition. Stated another way, DOE cannot claim that “excluded” incandescent lamps are general service incandescent lamps.¹⁵ Nor can DOE possibly contend that the lamps identified in the previous paragraph (i)-(iii) --- incandescent reflector lamps, intermediate base lamps, and candelabra based lamps --- are “exempt.”¹⁶ DOE knows these lamps have energy conservation standards under Section 325,¹⁷ and it is clear error to argue these regulated lamps are somehow “exempt” from regulation.¹⁸ The same is true for the other specialty lamps in the previous paragraph – (iv) – (xv), whose wattage caps resulted in the elimination of higher wattage versions of these lamps and saved energy.

3. Data. NEMA data and other sources of information confirm annual domestic sales of “general service lamps” specifically identified in the congressional definition of that term, 42 U.S.C. §6291(BB)(I)-(III), are approximately 600 million units at this time. That does not include the lamps that the Secretary is now proposing to characterize as “general service incandescent lamps” or “general service lamps” for the first time. Most of the exempt specialty incandescent lamps are well below one percent of that total (e.g., under 5 million units) and it would be fair to say that most are below two-tenths of one percent of that total (e.g., under 1 million units). The NOPDDA requests data for each of these specialty lamps. Given the very short period of time provided to respond to the NOPDDA it has proven impossible to undertake a more complete survey of member lamp shipments. NEMA has been able to collect data from four members who represent a significant part of the market for specialty incandescent lamps with respect to the incandescent lamps for which the Secretary seeks to discontinue their exemption.¹⁹ As such, the data is a reasonable representation of sales trends for these specialty incandescent lamps since standards for general service incandescent lamps went into effect in 2010-2012. NEMA has conferred with a couple of other members who were not able to gather data during the short time period, and they confirm they are experiencing the same trend as well: sales and

¹⁵ That would include, for example, incandescent reflector lamps, which are expressly “excluded” from the definition of general service lamp, 42 USC §6291(30)(BB)(ii)(II), as well as the definition of general service incandescent lamp. 42 USC §6291(30)

¹⁶ “Exemption” means: “The action of freeing or state of being free from an obligation or liability imposed on others: *** ‘regulatory exemptions.’” *Oxford Dictionary of English* (2010).

¹⁷ The Secretary’s implementation of these energy conservation standards is found at 10 CFR 430.32(x)(2) (candelabra base incandescent lamps), 10 CFR 430.32(x)(3)(intermediate base incandescent lamps); and 10 CFR 430.32(n)(6),(7).

¹⁸ DOE cannot possibly argue that when Congress authorized the Secretary “to determine whether --- (II) the exemptions for certain incandescent lamps should be maintained or discontinued based, in part, on exempted lamp sales data collected by the Secretary from manufacturers” that it was authorized to address non-exempt lamps under this provision.

¹⁹ NEMA members do not uniformly maintain their sales data in the same manner for these specialty lamps in a way that is quickly accessible in the short period of time to respond to this request. To break out each specialty lamp for one firm would require a significant amount of additional research time and effort and thus NEMA has aggregated some individual decorative shape lamps. Data is from 2012 because two firms had computer software conversions that make earlier data not quickly accessible in a short period of time.

shipments of specialty incandescent lamps are declining. The data collected from the four companies is reflected in NEMA's response to Item 1.

4. Regulatory burden and cost benefit analysis.

Nothing in the NOPDDA indicates that the DOE has considered "the alternative of not regulating" the non-exempt or excluded lamps in the manner that it is proposing to regulate in this rulemaking. Yet this is a fundamental requirement of Executive Order 12866 (September 30, 1993) ("agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating.") What that requirement compels the agency to undertake is an analysis of each specialty lamp with its unique design and applications, lamps with special bases, lamps with different voltages, lamps and evaluate *for each* the costs and benefits of regulating, including the alternative of not regulating. The agency cannot lump these unique costs and benefits in a mixture of disparate products because it conceals the costs and benefits of that specialty lamp. For example, for a user to switch from a lamp with a specialty lamp base to a lamp with a medium screw base typical of general service lamps will likely involve extra costs for a replacement fixture or socket; for a user to switch a lamp operating on a voltage different from the only common voltages found in residences --- 12-13V or 110-130V --- can involve increased cost associated with a change in electrical infrastructure of the building. The Secretary's proposal sweeps this essential analysis under the carpet in this rulemaking.

The specialty lamps that DOE is proposing to regulate in this rulemaking are a minor fraction of the lamps that are legitimately called general service lamps. The corresponding benefits from regulation are small, and Congress determined as early as 1992 with the enactment of EPCA 1992 to exclude from regulation lamps that did not represent a majority of lighting applications for that reason. As NEMA noted in its Comments on the NOPR at 8, Congress intended to regulate those lighting products where standards would have the greatest impact for significant energy savings: those lamps that were used the most; not those lamps that were used in smaller quantities in special applications, that typically had different designs, and where the burden of regulation would weigh more heavily. As a result of EPCA 1992, the Secretary would only be able to regulate those lamps if the Secretary could establish that the requirements of 42 U.S.C. §6292(b) were met.²⁰

In EISA 2007, Congress authorized the Secretary to evaluate whether specialty lamps that were exempt from regulation should be subject to energy conservation standards. For five of these incandescent lamps it set one regulatory pathway as described above; for the others Congress required some evidence that unit sales have "increased significantly." What Congress has done consistently from 1992 through 2007 for general service lighting products under EPCA is to make the choice between regulating and the alternative of "not regulating" for the Secretary. Congress is aware of the burdens of regulating lamps that are niche products with low manufacturing and sales volumes. So when Executive Order 12866 calls upon federal agencies "in choosing among alternative regulatory approaches that maximize net benefits . . . unless a statute requires another regulatory approach [including, per the above, the "alternative of not regulating"]", the statutory text pertaining to general service lamps reveals a "statute that requires another regulatory approach": only regulating when the congressional conditions precedent for regulation have occurred. Not only is the Secretary proposing to ignore the statutory language in that regard, but the Secretary's proposal ignores Executive Order 12866.

²⁰ See discussion in NEMA's Comments on the NOPR at 16-17.

In these comments, NEMA identifies a number of regulatory costs and burdens that are being ignored in the agency's analysis. In our response to Item 11 below, we mention the enormous costs associated with the Secretary's proposal to not reconcile the Appropriations Rider and the text of the statute and deliberately trigger the backstop so as to strand assets and inventory and reduce or destroy their value, close factories and eliminate jobs. Elsewhere we mention that the Secretary would be imposing on lamp manufacturers regulatory compliance costs for testing and certification on a rapidly evolving lighting technology (including products that have not yet been created), whose shelf-life and risk of obsolescence is less than a year and whose sales volume is relatively small.

NEMA's comments on the NOPR constructively proposed energy conservation standards for some exempt products that eschewed the regulatory approach proposed by the Secretary that would subject them to a lumens per watt standard because it was a less burdensome alternative that resulted in energy savings.²¹ The lumens per watt approach to regulation is more costly and burdensome to test and certify to; the alternative approach, which the Secretary has apparently not considered, that would establish an energy conservation standard based on capping energy use (wattage), was proposed for these specialty lamps that have lower manufacturing and sales volumes. Testing only for wattage is significantly less burdensome than also testing for lumens and wattage. NEMA demonstrated how Congress specified for the five categories of excluded incandescent lamps under 42 U.S.C. §6295(J)(4) that Congress was looking at these less burdensome wattage caps as the method of regulation if the condition precedent for regulation occurred. This is just another example, in the words of Executive Order 12866, of "a statute that requires another regulatory approach" that is being ignored by the Secretary's proposal. And it makes vastly more sense in these cases, because for several of these lamps the consumer is not primarily interested in lumen output as it is with a general service incandescent or other general service lamp. This is particularly true for rough service, vibration service, and shatter-resistant lamps. It is also true for appliance lamps, intermediate base lamps, candelabra base lamps, T-shape lamps and other lamps that have 40 watt restrictions. And where consumers and the market demand higher lumen output, the lamp manufacturers respond to provide it unless it is cost prohibitive for some reason.

Finally, NEMA points out that there are significant, costly unintended consequences if the Secretary casts the regulatory net too wide in this rulemaking. We point out the elimination of a number of useful lighting products --- particularly commercial products --- because of the "all voltage" and "all lamp bases" approach that the Secretary is proposing. NEMA provided sensible recommendations to the Secretary in its Comments on the NOPR in this rulemaking to limit unintended consequences (including those we may not fully appreciate at this time), and we continue to encourage the adoption of those recommendations. This really is a rulemaking where common sense should respect the fact that the "statute requires another regulatory approach" than the one the Secretary is approaching, including the "alternative of not regulating" the many specialty lamps that the Secretary proposes to call general service lamps.

²¹ In the case of general service incandescent lamps, NEMA demonstrated that lowering wattage levels could not be economically justified because it imposed higher total owning costs on the consumer compared to a potentially more efficient alternative. See discussion in NEMA's Comments on the NOPR at 50-56.

ISSUES ON WHICH DOE SEEKS PUBLIC COMMENT

Although DOE welcomes comments on any aspect of this proposal, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

- 1) DOE requests comment on the eight general service incandescent lamp exemptions that are proposed to be discontinued in this notice. In particular, DOE requests comment on the estimated annual unit sales, potential for lamp switching, and any other factors that should be considered.

NEMA Comment: As our prior written comments in this proceeding as well as our verbal comments at the October 21, 2016 public meeting convey, NEMA supports the regulation of rough service and vibration service incandescent lamps at this time. This would be consistent with congressional intent as expressed in the text of EISA 2007. Notwithstanding that observation, NEMA opposes treating these lamps as “general service incandescent lamps” for the reasons we expressed in our written comments on the NOPR and in General Comment No. 1 above. These are specialty lamps, and Congress has clearly shown in the statute that it wants a wattage cap form of regulation for these specialty lamps, see 42 U.S.C. §6295(i)(4)(D)(ii) and (E)(ii), not a lumens per watt or modified lumens per watt regulation as the DOE is apparently proposing for general service incandescent lamps. NEMA made a specific proposal for regulating these two specialty products that is consistent with the congressional intent reflected in EISA 2007 just cited, and we encourage the DOE to adopt NEMA’s proposal that will provide energy savings that is economically justified and technologically feasible.

NEMA also disagrees with DOE’s approach and justification, as expressed in the NOPDDA, treating all eight categories of these specialty lamps as “general service incandescent lamps” or “general service lamps.” We further disagree with the manner DOE has chosen to conclude that they should be regulated at all. The text of the statute clearly states and describes a very different approach, as we have described in General Comment No. 1 above. As NEMA noted during the recent October 21st public meeting and in Comment No. 1 above, for the five categories of specialty incandescent lamp products Congress required the establishment of energy conservation standards if a specific condition precedent for their regulation occurred: “an annual sales rate demonstrat[ing] actual unit sales of [the lamp type] achieve levels that are at least 100 percent higher than modeled unit sales for that year.” 42 U.S.C. §6295(f)(4)(D)-(H). DOE is ignoring this specific, unambiguous condition precedent for regulating these five specialty lamp types by proposing to regulate shatter-resistant incandescent, three-way incandescent, and high lumen incandescent (2601 – 3300 lumen lamps) in the manner described in the NOPDDA and regulating them out of existence as “general service lamps.” The condition precedent for regulating these three types of specialty incandescent lamps has not occurred, and DOE expressly acknowledges this fact in the NOPDDA. NEMA encourages DOE to follow the law as described in our General Comment No. 1.

For regulating the other specialty lamp types (G shape, T shape, and the variety of other shaped lamps) currently excluded from regulation by Congress in the manner proposed by the NOPDDA, NEMA notes that EISA 2007 requires DOE to find that sales have “*increased significantly*” for each of these lamps before their exemption from regulation can be discontinued. This unambiguous congressional intent is reflected in two clauses of EISA 2007’s amendments to Section 325(i) of EPCA. First, the provision titled “Extension of Coverage”, which contemplates a Petition “to establish standards for lamp shapes or bases that are

excluded from the definition of general service lamps.” 42 U.S.C. §6295(i)(3)(E). This clause requires not only that a petition show that “the availability or sales of exempted incandescent lamps have increased significantly since the date on which the standards on general service incandescent lamps were established [December 19, 2007],” but the criteria for granting the petition requires a finding of the same significant increase. 42 U.S.C. §6295(i)(3)(E)(ii) and (iii)(I).

Second, the provision applicable to this very rulemaking, 42 U.S.C. §6295(j)(6)(A) directing the Secretary to consider whether exemptions should be maintained or discontinued is to be based in part on “exempted lamp sales collected by the Secretary from manufacturers.” The entire tenor and intent of this clause, taken together with other clauses dealing with maintaining or discontinuing exemptions, is that the exemptions might be withdrawn if the specialty lamps were enlarging their market share or footprint at the expense of more efficient general service incandescent lamps. The DOE has made no showing in the NOPDDA that this is the case, and the reality is that the data demonstrates just the opposite.²² It is just not happening. Sales of these specialty incandescent lamps are falling and losing their market share. These incandescent lamps are being replaced to a large extent by LED versions of these lamps. NEMA members present at the public meeting were unanimous in making that observation. If the Secretary were to petition himself under Section 325(j)(3)(E), he could not grant his own petition or decide to regulate these specialty lamps. A different outcome under 325(j)(6)(A) is totally illogical.

NEMA agrees that lamp switching (substitution of a less efficacious lamp for a more efficacious lamp) is an essential factor that the Secretary *must* consider *and find* in deciding whether to regulate exempt specialty lamps, but every clause in the EISA 2007 amendments shows that “switching” was to be data driven: data showing significantly increased sales of exempt lamps after 2007 or, in the case of the five lamp types that Congress targeted for tracking in Section 325(j)(4), a 100% increase in sales over a modeled benchmark. It is noteworthy that the only factor Congress specifically directed the Secretary to evaluate when deciding whether to maintain or discontinue exemptions in this rulemaking was “lamp sales” of exempt lamps. That legislative fact confirms in a blunt fashion that the Secretary must develop data showing significant lamp switching is occurring at the expense of more efficacious lamps. If lamp switching was a reasonable probability, the data would have shown it by now, after the EISA 2007 energy conservation standards for general service incandescent lamps went into effect. But as the data shows, it is just not happening.

The DOE’s NOPDDA appears to say that the Secretary can arbitrarily select some number of annual unit sales for a given type of specialty exempt lamp and decide that the Secretary has authority to make a specialty lamp a “general service lamp,” regardless of whether lamp switching is occurring. As best as one can determine, the NOPDDA apparently indicates that any number of annual unit sales above 3 million will do.²³ Even if the Secretary

²² See Energy Information Administration, [Sales of specialty incandescent bulbs decline despite exemption from efficiency standards](http://www.eia.gov/todayinenergy/detail.php?id=10631) (April 2, 2013) <http://www.eia.gov/todayinenergy/detail.php?id=10631>

²³ NEMA refers the Secretary back to NEMA’s analysis in its comments on the NOPR in this rulemaking relating to whether, under Section 322(b) of EPCA, the Secretary could regulate globe shape incandescent lamps, where those lamps occupied an estimated 21 million sockets based on approximately 7 million unit sales of globe shape lamps per year. The calculation demonstrated that the Secretary could not regulate these lamps because globe shape

was authorized to treat exempt incandescent lamps differently than a new consumer product under Section 322(b), NEMA's analysis demonstrates that any number above 3 million units per year is completely arbitrary absent significantly increasing lamp sales for a particular exempt specialty lamp evincing that lamp switching is occurring or, in the case of the five types of specialty incandescent lamps that Congress targeted for sales tracking, that unit sales exceeded a modeled threshold by 100%. Put another way, where unit sales of a given exempt specialty lamp are declining and their energy consumption could not justify regulation as a new consumer product, the decision to regulate is arbitrary and capricious and contrary to law.

DOE's only response in the NOPDDA is that it has some undefined "discretion" to do what it has proposed. NOPDDA, 81 FR at 71803. As we summarize in our General Comment No. 1 above, however, the text and structure of the EISA 2007 amendments demonstrate that the Secretary's discretion is far more constrained than the DOE lets on.

NEMA now considers the other six categories of excluded lamps that the Secretary wants to discontinue their exemptions. As a general comment, NEMA objects to DOE arbitrarily lumping nine different shape lamps (B, BA, CA, F, G16-1/2, G25, G30, S and M-14) that are used in very different lighting applications and treating them as though they have a lot in common. The only thing they have in common is that Congress put them in the same clause of the list of Exclusions for convenience so that the list of 22 exclusions did not become a list of 30 Exclusions. When looked at individually, several of the different lamp shape types in this clause have well less than a million units of annual sales, their unit sales are declining, and lamp switching is highly unlikely.

Incandescent Reflector lamps.

The Secretary's abrupt turnabout deciding late in this rulemaking to include incandescent reflector lamps in this proceeding is incomprehensible in light of the statutory text. Congress said more than once in the statute that incandescent reflector lamps are "not included" in the definition of "general service lamp." The only reasonable conclusion the public can draw from the Secretary's proposed decision to declare that an incandescent reflector lamp is a general service incandescent lamp and therefore a general service lamp is because the Secretary wants to eliminate this product from the market, when the provisions of the statute that expressly regulate the incandescent reflector lamp would prohibit this outcome. This is an illegal end-around the constraints that the Energy Policy and Conservation Act impose on the Secretary. In the case of one subset of incandescent reflector lamps, certain PAR lamps that were the subject of a recent rulemaking proceeding, the Secretary specifically determined that further amendment of energy conservation standards for those lamps could not be economically justified and would produce no significant energy savings.²⁴ In short, no further regulation of that product is warranted under the statute. Now the Secretary claims authority to eliminate this product from the market by claiming it is a general service incandescent lamp, when Congress said multiple times that it was not, and proposing to apply a 45 lumens per watt standard to it that the product cannot possibly meet.

lamps consume nowhere near an average of 100 kWh of electricity per year as required by Section 322(b). See the discussion in NEMA's May 16, 2016 Comments on the NOPR in this proceeding at 44-45.

²⁴ See 80 FR 4042, 4141 (January 26, 2015).

Regulating incandescent reflector lamps under the specific regulatory provisions that Congress established for this product and amending existing energy conservation standards would expose to the public that the Secretary is closing domestic manufacturing plants and eliminating hundreds of manufacturing jobs. The Secretary's end-around the statutory provisions for amending energy conservation standards for incandescent reflector lamps by lumping them in with general service lamps avoids any analysis of the economic impact of this decision. The Secretary has not performed any economic impact analysis on manufacturing, employment or other related economic impacts.

NEMA refers the DOE to its discussion in General Comment No. 1 of these Comments about the Secretary's lack of authority to amend these definitions to include incandescent reflector lamps. The Secretary is urged to reverse the proposed course in the NOPPDA regarding incandescent reflector lamps and maintain the correct position that it expressed in the NOPR.

Shatter-resistant lamps.

	2011	2012	2013	2014	2015
Reported unit sales	1,210,000	1,455,000	1,093,000	1,042,000	689,000

Source: <https://www.regulations.gov/document?D=EERE-2011-BT-NOA-0013-0017>

How does the “shatter-resistant lamp,” a specialty incandescent lamp expressly excluded by Congress from the definition of general service incandescent lamp since 1992, whose 2015 annual unit sales have steadily fallen by fifty percent since 1997²⁵ and have neither increased since traditional general service incandescent lamps were phased out in 2010-2012, nor have they exceeded the specific congressional threshold for regulating this lamp under Section 325(l)(4)(H), suddenly become a “general service incandescent lamp suitable for regulation? The question is not merely rhetorical: in light of EISA 2007’s statutory text establishing a specific metric as a condition precedent for regulation of shatter-resistant incandescent lamps demonstrates how little discretion the Secretary has to regulate this lamp by discontinuing its exemption. DOE may not wave a wand and declare this lamp to be a “general service lamp” by sleight of hand. The 2015 sales of shatter-resistant incandescent lamps are one-third of what they were in 1997 and they did not rise in the period after 2010-2012 when the phase-out of traditional incandescent lamps occurred. DOE’s only response: there is a hypothetical lamp switching risk. That is not what Congress said. Congress said it becomes a lamp switching risk when its sales exceed 100% of a modeled number based on pre-2010 trend sales. DOE’s response to this conundrum is the wholly conclusory response that it has “discretion” to decide what is in and what is out of the definition of “general service lamp.” NOPDDA, 81 FR 71803. But this example of the shatter-resistant incandescent lamp plainly shows that Congress left DOE very little, if any discretion, in this regard. DOE has apparently elected to ignore the limits that the statute imposed on the Secretary in the law. And this is not the only example of ignoring the law in this rulemaking.

Additionally, the coating on the shatter-resistant lamp results in a significantly lower lumen output thereby making it less desirable to the consumer to replace the standard incandescent lamp or a general service LED lamp with an incandescent shatter-resistant

²⁵ See <https://www.regulations.gov/document?D=EERE-2011-BT-NOA-0013-0017> (Excel spreadsheet for shatter-resistant lamps)

incandescent lamp. They are not effective substitutes. For example, the lumen output of a 60 watt shatter-resistant lamp is close to the lumen output of a 40 watt standard incandescent lamp.²⁶ The consumer will not treat this lower lumen lamp as an effective substitute for the general service incandescent lamp or any other general service lamp where normal light output requirements are much higher. The Secretary does not appear to be taking into account any of the countervailing factors that would indicate lamp switching is not occurring or likely to occur.

3-way incandescent lamps.

	2011	2012	2013	2014	2015
Reported unit sales	31,619,000	28,854,000	34,773,000	35,340,000	32,665,000

Source: <https://www.regulations.gov/document?D=EERE-2011-BT-NOA-0013-0017>

The same is entirely true for the three-way incandescent lamp, a specialty incandescent lamp expressly excluded by Congress from the definition of general service incandescent lamp since 1992, whose 2015 annual sales have steadily fallen by fifty percent since 1997 and have neither significantly increased since traditional general service incandescent lamps were phased out in 2010-2012, nor have they exceeded the specific congressional threshold for regulating this lamp under Section 325(l)(4)(F). DOE’s only response: a hypothetical lamp switching risk. That is not what Congress said. Congress said it becomes a lamp switching risk when its sales exceed 100% of a modeled number based on pre-2010 trend sales. DOE’s response to this conundrum is the wholly conclusory response that it has “discretion” to decide what is in and what is out of the definition of “general service lamp.” NOPDDA, 81 FR at 71803. Again, the example of the three-way incandescent lamp plainly shows that Congress left DOE very little, if any discretion, in this regard just as it left no discretion with regard to the shatter-resistant lamp. DOE has again apparently elected to ignore the limits that the statute imposed on the agency.

There are other factors that limit lamp switching in the case of 3-way incandescent lamps. The A-21 bulb size is larger than the size of the A-19 bulb used in a “standard incandescent” lamp and is not acceptable to the consumer as a suitable replacement for the standard incandescent lamp in most applications. Second, the UL 1598 safety standard contains a thermal requirement for most common general service lighting fixtures that limit the lamps used in the fixture to 100 watts. The higher 150 wattage of a three-way incandescent lamp cannot be used in these fixtures.

Furthermore many lighting switches are not capable of activating the three-way functionality of a three-way lamp and the switch will only turn on one wattage level --- the middle wattage. Why a consumer would purchase a more expensive three-way lamp to replace a lamp in a socket where 3-way functionality is neither desired nor suitable is not explained in the NOPDDA or any other document in this proceeding. These are significant limitations on lamp switching.

²⁶ A 60-watt shatter resistant lamp will typically have a lumen output around 450-520 lumens. See e.g. <http://www.satco.com/s3927.html>. This is the lumen output associated with a 29 watt halogen incandescent lamp, see 42 U.S.C. §6205(i)(1)(A), formerly the 40 watt traditional incandescent light bulb.

G-shape lamps with diameter of 5” or more. G-40 lamps.

	2012	2013	2014	2015	% Change 2012-15
Reported unit sales	1,361,735	1,010,423	938,600	859,867	-36.9%

Source: See text accompanying note 19.

This lamp, with its very large diameter (five inches), is the antithesis of a general service incandescent lamp. It will not fit in most lighting fixtures because it is too large. At \$4.00 per unit, it also has a significantly higher price point than a general service incandescent lamp, a medium screw base CFL, and now many general service LEDs. Why a consumer would want to switch from a standard general service incandescent lamp to this large globe shape lamp in any significant manner under these circumstances is a total mystery. This lamp has its own consumer demand for special purposes.

And when we peer under the curtain and examine the unit sales data, we do not find “approximately 8 million” annual unit sales as DOE postulated in the NOPDDA, but substantially less. And over the past four years, the unit sales of this large G40 incandescent lamp have declined substantially, just like other specialty incandescent lamps. This would indicate that G40 globe shape incandescent lamps do not present a lamp switching risk.

Medium Screw Base T-shape lamps of 40W or less or length of 10” or more.

	2012	2013	2014	2015	% Change 2012-15
Reported unit sales	11,168,553	11,507,467	10,529,062	9,750,395	-12.7%

Source: See text accompanying note 19.

The T-shape lamp is a tubular shape lamp that comes in varying lengths, with 2” being the most common length. They are often used in museum or other display cases or in music stands. There is not a lot of sales volume for T-shape lamps at 40 watts, the top of the wattage range for this lamp. The volume of 40 watt T-shape lamps is small and getting smaller. Most of the sales of T-shape lamps made and sold are 15 watts and 25 watts. The significance of these facts mean that with the overall low volume of 40 watt T-shape lamps there is not much opportunity for energy savings by applying a 45 lumen per watt standard to this specialty lamp.

There is also a continuing need for incandescent T-shape lamps in the installed base of exit signs designed for tubular incandescent lamps. The UL-1993 safety standard specifically warns that compact fluorescent and light-emitting diode (lamps) cannot be utilized with these fixtures. To eliminate these lamps from the market would force owners of exit signs designed for tubular incandescent lamps to replace their entire fixture, and the Secretary has performed no payback analysis on the higher cost of replacement for this customer.

As the data shows, sales of these lamps are declining and have not increased significantly. The reported sales of these lamps have fallen by 12.7% from 2012 to 2015.

Medium screw base decorative shape lamps

B, BA, CA, and F shape lamps (≤40 watts)

	2012	2013	2014	2015	% Decline 2012-15
Reported unit sales	45,101,327	41,807,901	29,661,407	26,470,193	-41.3%

Source: See text accompanying note 19.

The “B-shape” refers to a “bullet” or “blunt” shape lamp, which like the BA, CA and F-shaped lamps are largely used in chandeliers or wall sconces. The candelabra base incandescent lamps are already regulated by Congress and are non-exempt lamps outside the scope of this rulemaking.

These medium screw base decorative lamps are designed for longer life and as a result have lower light output and are unacceptable for applications normally served by general service lamps. Since this lamp’s wattage is capped at 40 watts by statute, it has a considerably lower lumen output than the standard incandescent or halogen type lamp and will not meet a consumer’s lumen output requirements for most lighting applications served by general service incandescent lamps. Furthermore, because of the smaller size of these lamps, lamp manufacturers cannot make LED alternatives as aesthetic as incandescent versions or as efficient as larger A-line LED lamps because there is insufficient room to put the required electronics in these lamps to match the efficacy of the A-line LED lamps.

The “BA shape” refers to a smooth surface bent tip shape lamp. The difference with the B-shape lamp is strictly its aesthetic appeal (or lack thereof) to a consumer. What is stated above with respect to the B-shape lamp is applicable to the BA-shape lamp.

The “CA shape” refers to a smooth surface candle-like shaped lamp. Like the BA-shaped lamp, the difference with the B- and BA-shaped lamp and the CA-shaped lamp is strictly its aesthetic appeal (or lack thereof) to a consumer. What is stated above with respect to the B- and BA-shape lamp is applicable to the CA-shape lamp.

The “F-shape” refers to a flame shaped lamp, which does not have a smooth surface. The difference with the B- and BA- and CA-shaped lamps and the F-shaped lamps is strictly its aesthetic appeal (or lack thereof) to a consumer. What is stated above with respect to the B, BA- and CA-shaped lamp is applicable to the F-shape lamp.

As the data shows, sales of these lamps are declining and have not increased significantly. The reported sales are lower in 2015 than they were in 2012.

Smaller diameter globe shape lamps

G16-1/2, G25, and G30 (globe) shape lamps (≤40 watts)

Reported unit sales	2012	2013	2014	2015	% Change 2012-15
G16-1/2	7,828,656	7,165,375	6,656,194	6,532,937	-16.6%
G25	46,402,599	43,979,690	36,905,627	33,401,786	-28%
G30	157,629	169,429	154,008	114,951	-27.1%

Source: See text accompanying note 19.

The G16-1/2 globe shape is the smallest version of a globe shape lamp with a 2" diameter. Its primary application is in make-up mirrors used in theaters. There is no prospect for lamp switching with this lamp because of its size and low lumen output.

The G25 shape version of the globe lamp with a 3" diameter is the most popular of the globe shape lamps. It is used primarily in bathroom vanities and bathroom lamp strips. There is no prospect for lamp switching with this lamp because of its low lumen output.

The G30 (globe) shape lamp with its 3.5" diameter used to be the most popular of the globe shape lamps, but demand has fallen in favor of G25 shape lamps.

As the data shows, sales of these lamps are declining and have not increased significantly.

S shape lamps (≤40 watts)

	2012	2013	2014	2015	% Change 2012-15
Reported unit sales	4,798,005	5,118,343	5,365,474	5,182,770	8%

Source: See text accompanying note 19.

"S-shaped" lamps are "service lamps" primarily used as "sign lamps" in marquis signs. This is a commercial product. In contrast to general service incandescent lamps, the S shape lamp has a relatively straight glass profile. Consumers would almost never use these lamps in their home or put this lamp into a general service lamp socket.

M-14 lamps (≤40 watts)

	2012	2013	2014	2015
Reported unit sales	Zero	Zero	Zero	Zero

Source: See text accompanying note 19.

This lamp shape is an artifact from another era, and it is no longer manufactured by NEMA members. It had a mushroom shape, and its primary application was in art deco lamp fixtures and some ceiling fans.

As the data shows, sales of these lamps are zero over all four years and have certainly not increased significantly.

Higher lumen lamps > 2600 lumens to 3300 lumens

While not specifically listed among the 22 exclusions from the definition of general service incandescent lamps, DOE is proposing to regulate another set of incandescent lamps that are presently excluded from the definition of general service incandescent lamps because their lumen output is greater than 2600 lumens. NEMA comments on DOE's proposal to regulate those lamps as well.

High lumen incandescent lamps (>2600 lumens – 3300 lumens)

	2011	2012	2013	2014	2015
Reported unit sales	9,878,000	12,272,000	9,296,000	5,232,000	4,049,000

Source: <https://www.regulations.gov/document?D=EERE-2011-BT-NOA-0013-0017ce>

The same precise point made with respect to shatter-resistant and three-way incandescent lamps applies to DOE's treatment of incandescent lamps with a lumen output greater than 2600 lumens to 4000 lumens. This is one of the five categories of incandescent lamps for which Congress established a condition precedent for regulation. The data here is even more severely indicative that DOE has made a wholly arbitrary and capricious choice to call these lamps "general service incandescent lamps": 2015 sales are approximately 90% less than they were in 1997. 2015 unit sales are nearly 60% below 2011 unit sales. DOE's response to that fact is fraught with confusion and misdirection (NOPDDA, 81 FR at 71804):

While sales are not necessarily an indication of use in general lighting product offerings above 4,000 lumens indicate that these lamps may be used mainly in specialty applications rather than for purposes traditionally served by GENERAL SERVICE INCANDESCENT LAMPSs. EISA 2007 directs DOE to track sales of five exempt lamp types, including 2,601 to 3,300 lumen incandescent lamps. While DOE acknowledges that reported data show that sales of these incandescent lamps have been decreasing over the last several years, DOE notes that the majority of product offerings between 2,601 and 3,300 lumens are CFLs or LED lamps and thus are not captured in the sales data. For the reasons described in this paragraph, DOE is proposing that general service lamps must have lumen outputs greater than or equal to 310 lumens and less than or equal to 4,000 lumens.

NEMA disagrees with DOE's claim that "sales are not necessarily an indication of use in general lighting applications." Since 1992 Congress has recognized that general service incandescent lamps represent a majority of the lighting applications,²⁷ and it is therefore, in the mind of Congress, a legislative fact that sales are necessarily an indication of use in general lighting applications. As NEMA observed in its General Comment No. 1, above, Congress described a sales data-driven condition precedent for regulation of non-exempt specialty lamps excluded from the definitions of general service incandescent lamp and general service lamp .

²⁷ See the discussion in NEMA's May 16, 2016 Comments on the NOPR in this proceeding at 6-7.

Unit sales are the principal indication that a specialty lamp could be considered for energy conservation standards because Congress specifically called that fact out in the EISA 2007 amendments. It is the “only factor” Congress specifically called out in the EISA 2007 legislation. Congress called out lamp sales specifically because it was demonstrative of lamp switching risk where less efficacious lamps would be substituted for more efficacious lamps. In the case of the high lumen lamps, Congress established a condition precedent for not maintaining the exclusion and their exemption from regulation, just like shatter-resistant incandescent lamps and three-way incandescent lamps. Congress singled out “*actual unit sales* of 2,601-3,300 lumen general service incandescent lamps in the lumen range of 2,601 through 3,300 lumens,” 42 USC §6295(i)(4)(g), as a specific factor for the Secretary to evaluate in deciding whether to apply energy conservation standards to these high lumen incandescent lamps. Congress did not single out any other factor. The Secretary cannot say that sales are unimportant. The fact that Congress only singled sales out indicates that it was important to Congress. And if it is important to Congress it has to be important to the Secretary.

DOE misdirects attention away from the acknowledged fact that “sales of these incandescent lamps have been decreasing over the last several years,” by stating that most “product offerings between 2601 and 3300 lumens are CFLs and LED lamps while providing no data whatsoever of what those sales might be. DOE’s general observation may be correct, but what DOE is in fact proposing to do in this rulemaking is to eliminate the high lumen incandescent lamp by applying a 45 LPW energy conservation standard when Congress’ entirely different metric for regulation of the high lumen incandescent product is nowhere in sight. That misdirection is totally unresponsive to NEMA’s comments, rendering DOE’s proposal arbitrary and capricious. DOE cannot simply hold on to its pre-conceived “framework” and lump all three lamp technologies into a common bowl of luminous stew where each lamp technology loses its identity in order to avoid the analytical framework that Congress clearly spelled out for the incandescent technology: DOE has offered no evidence that it can economically justify establishing energy conservation standards for high lumen CFLs and LEDs or that such standards will generate significant energy savings. It is not surprising that the NOPDDA, Table II.1 at 27, makes no claim that the high lumen incandescent lamps present a “lamp switching risk” and DOE’s reasoning quoted above would only justify that they present no lamp switching risk. DOE’s only rationale for discontinuing the exemption for high lumen incandescent lamps seems to be that it has some unbounded and undefined “discretion” to call an orange a grapefruit,²⁸ and by sleight of hand regulate a product in a manner that Congress clearly directed the Secretary to regulate only in entirely different circumstances from the circumstances that confront the Secretary.

Nor are these lamps “used to satisfy lighting applications traditionally served by general service incandescent lamps.” They are largely used in commercial and outdoor applications where very bright light is required. We explain this in greater detail in response to Item No. 6 below.

- 2) DOE requests comment on the 14 general service incandescent lamp exemptions that are proposed to be maintained in this notice. In particular, DOE requests comment on

²⁸ *API v. United States EPA*, 198 F.3d 275, 278 (D.C. Cir. 2000) (“[I]f Congress makes an explicit provision for apples, oranges and bananas, it is most unlikely to have meant grapefruit.”).

the estimated annual unit sales, potential for lamp switching, and any other factors that should be considered.

NEMA Comment: NEMA agrees that exemptions on the other 14 exclusions from the general service incandescent lamp definition should maintain their exemption from regulation or, in the case of the appliance lamp that has a wattage cap of 40 watts, that that energy conservation standard be maintained at 40 watts.

- 3) DOE requests any additional sales data from stakeholders that could be considered when determining whether to maintain or discontinue the general service incandescent lamp exemptions.

NEMA Comment: See response to Item No. 1 and General Comment No. 3.

- 4) DOE requests comment on the proposed definition for general service incandescent lamps.

NEMA Comment: NEMA does not support the proposed definition for both the reasons NEMA provided in its comments on the NOPR in this rulemaking and for the reasons explained elsewhere in these comments on the NOPDDA. Consistent with our General Comment No. 1 above and our Comments in the NOPR, NEMA urges the Secretary to leave the definition of general service incandescent lamp unchanged as the Secretary has no authority to change that definition.

- 5) DOE requests comment on its preliminary determination that the following exemption types are not specific to incandescent technology: appliance lamps; black light lamps; bug lamps; colored lamps; infrared lamps; left-hand thread lamps; marine lamps; marine signal service lamps; mine service lamps; plant light lamps; sign service lamps; silver bowl lamps; showcase lamps; and traffic signal lamps.

NEMA Comment: By way of background for our response to this request, NEMA refers the Secretary to our General Comment No. 1 and the approach to regulation of general service lamps described in the statute. NEMA agrees with the principle that exemptions from energy conservation standards apply to all technologies of lamps that are excluded from the definition of general service lamp where no energy conservation standard has been established by Congress or DOE for that excluded lamp type. NEMA sees no reason to discontinue the exemptions for the incandescent, compact fluorescent (CFL) or light-emitting diode (LED) versions of the lamp types described above. For some of these exempt categories, a CFL or LED version of the lamp does not exist.²⁹ NEMA also sees no reason to discontinue the exemptions for the compact fluorescent or LED versions of any other of the excluded specialty lamps as there is no empirical data indicating that lamp shifting is occurring for any of these specialty lamp types, although we have proposed in our Comments on the NOPR in this rulemaking that DOE might want to consider energy conservation standards for a couple of the LED versions of certain specialty lamps excluded from the definition of general service lamp.

NEMA urges the Secretary to consider whether the regulatory burden of testing, certification and enforcement purposes for LED versions of specialty lamps excluded from the

²⁹ See discussion in NEMA's Comments on the NOPR at 38-40, Table A.

definition of general service lamp is warranted for specialty lamp types from the newer LED technology versions. The Secretary's instinct should be to resist regulation for the exempt versions of this fast moving technology unless there is a compelling case to burden a new technology with regulation that NEMA does not see in this case. In the case of LED technology, there is no hard evidence that lamp shifting from general service versions of these LED lamps to specialty versions of these LED lamps is even a palpable possibility and a loss of significant energy savings, and one naturally has to ask, why the rush?

- 6) DOE requests comment on the proposed GSL lumen range of greater than or equal to 310 lumens and less than or equal to 4,000 lumens.

NEMA Comment: Please see NEMA's comment on high lumen incandescent lamps under Item 1 above. NEMA recommends that the Secretary not re-write the lumen range beyond the 3300 lumen level established by Congress for incandescent lamps. To the extent that the Secretary is authorized to consider including "other lamps that . . . are used to satisfy lighting applications traditionally served by general service incandescent lamps," these high lumen lamps above 2600 lumens to 3300 lumens are not and will not be widely used in those applications. It is worth noting that the lighting applications traditionally served by general service incandescent lamps are predominantly in households.³⁰ These high lumen lamps are simply too bright for most household use, and while it is true that one could, for example, find a high lumen 150 watt lamp in residences, it is insubstantial and numerically a very low occurrence in the context of the billions of units of general service lamp sockets in households. These lamps are primarily used in commercial and outdoor applications, and as the sales data demonstrates in the case of incandescent versions, see Comment 1, sales have dropped dramatically and they are less than one percent the number of general service lamps. They are not used to satisfy lighting applications traditionally served by general service incandescent lamps, and therefore the statute provides no authority for the Secretary to deem these lamps either "general service incandescent lamps" or "general service lamps".

One consequence of the proposed expansion in lumen range to 4000 lumens does is inadvertently to bring certain high intensity discharge (HID) lamps into the regulatory fold. See NOPDDA, 81 FR at 71806. This makes absolutely no sense to NEMA. High intensity discharge lamps were not a technology specifically listed in the definition of general service lamp, but Congress surely knew about the technology when it enacted EISA 2007 and could have included it in the paragraph if that was intended. Congress understood that the HID lamp is a commercial lamp and had no reason to consider it a residential consumer lamp and wrap it in to the general service lamp framework as a consumer household product. Congress had previously authorized the Secretary to undertake a rulemaking to determine whether energy conservation standards for high intensity discharge lamps were technologically feasible and economically justified. 42 U.S.C. §6317(a). By placing HID lamps in 42 U.S.C. §6317 Congress explicitly recognized that the HID lamp was primarily a commercial and industrial product, not a residential consumer product.³¹

³⁰ DOE estimated that 84% of general service lamps are used in households. Technical Support Document at 9-23.

³¹ Accord, 10 CFR §431.282 (Secretary recognizes HID lamps as commercial product by placing regulations in Part 431 of 10 CFR). See also 80 Fed.Reg. 76355 (December 9, 2015)(where the Secretary considered the impact of any proposed regulation for HID lamps as an impact on "*commercial consumers.*").

Only recently, the Secretary made a negative determination that energy conservation standards for HID lamps were unwarranted. 80 FR 76355, 76372 (December 9, 2015) (“DOE determines that standards for HID lamps are either not technologically feasible, would not result in significant energy savings, or are not economically justified (see Table VI.17). Therefore, DOE is not establishing energy conservation standards for HID lamps.”). Specifically, with respect to the directional HID lamps that DOE is ostensibly and mysteriously trying to regulate as a “general service lamp” in this proceeding, DOE said that energy conservation standards for these HID lamps “would not result in significant energy savings.” *Id.* Table VI.17. It is incomprehensible that the Secretary would now try to regulate a product in a separate proceeding that he has only recently concluded that standards will not yield significant energy savings. This presents the same end-around the statutory framework for regulation of HID lamps that the Secretary is proposing with respect to incandescent reflector lamps. See discussion *infra*.

NEMA members provided data for HID lamps with light output 4000 lumens and under and the number is small and clearly declining, consistent with the record in the HID lamp rulemaking. The 2015 sales are 33% *below* 2012 sales, and industry projects HID lamp sales to continue to fall:

HID under 4000 lumens	2012	2013	2014	2015	% Change 2012-15
Domestic Unit Sales	2,729,966	2,820,484	2,168,300	1,817,209	-33.4%

Source: see text accompanying note 19.

Additionally, we reiterate a comment from the October 21st Public Meeting that if the DOE intends to include small HID products in the scope of this rule, there is no approved test procedure for these products in terms of treating them as General Service Lamps. These products should not be included in this rulemaking.

To the extent that the Secretary appears to be targeting 200 watt incandescent lamps and higher lumen (2650 lumens to 3600 lumens) compact fluorescent lamps (e.g. 40-55 watt CFL), these lamps are simply not found in residential environments because they are extremely expensive and too bright for the home. No reasonable person could classify these lamps as lamps “used to satisfy lighting applications traditionally served by general service incandescent lamps.” A single CFL lamp in this lumen range sells for \$15 or \$16 per lamp. A single 200 watt incandescent version of this lamp sells for \$10-\$12 per lamp. General service CFLs and LEDs in the normal household lumen range (310-2600 lumens) sell for a fraction of this amount and the DOE knows this. Finally, it should be noted that over 95% of general service lamp fixtures will not accommodate a 200 watt incandescent lamp because of Underwriters Laboratories thermal standards in UL 1598 making the lamp a nearly zero prospect for lamp switching and use in lighting applications traditionally served by general service incandescent lamps.

- 7) DOE requests comment on its preliminary determination that specialty MR lamps warrant an exemption and the proposed definition for the term “specialty MR-lamp.”

NEMA Comment: First, NEMA thanks the DOE for directing some attention to this issue. NEMA’s approach to the MR lamp issue in response to the NOPR was slightly different; however we believe that NEMA’s overall approach to regulation of MR lamps of all technologies would have reached a similar but not identical outcome for specialty MR lamps. The DOE’s

proposed approach leads NEMA to revisit its thinking on this lamp. DOE proposed the following definition for “specialty MR lamps”:

Specialty MR lamp means a lamp that has an MR bulb shape as defined in ANSI C79.1 (incorporated by reference; see §430.3) with a diameter less than 2.25 inches; operates at any voltage; and that is designed and marketed for use in projectors, scientific illumination equipment, theatre lighting, studio lighting, stage lighting, film lighting, medical equipment lighting, or emergency lighting.

There are number of “specialty” MR lamps that do not operate at voltages traditionally associated with general service incandescent lamps, 12-13 volts, or 120-130 volts. Nearly all of the halogen incandescent versions of these specialty lamps have very low lamp life ratings --- 1000 hours or less, which are all below the minimum lamp life rating of general service MR lamps. Furthermore, they are not used for residential applications at all and are not consumer products. Some of these products have a diameter of 2”. To avoid potential confusion and associated burden, NEMA proposes the DOE cite a diameter of > 2.25”, as was done in the State of California’s recent regulatory action for Title 20³². NEMA recommends the following alternative definition for specialty MR lamps:

Specialty MR lamp means a lamp that has an MR bulb shape as defined in ANSI C79.1 (incorporated by reference; see §430.3) with a diameter less than ~~2 inches~~ 2.25 inches, is not designed to operate at 11-13 volts or 120-130 volts; or has a rated life of 1000 hours or less; or has a rated wattage greater than 75W, or, if any one of the foregoing attributes is not applicable, is identified in Table 8 of ANSI Special Report 24f, *ANSI Assigned Photo Lamp Codes (2002)*³³ (incorporated by reference; see §430.3). [Delete references to specific special applications]³⁴

Having addressed the Secretary’s proposal for specialty MR lamps, NEMA asks the Secretary to visit NEMA’s proposed energy conservation standards for MR lamps other than specialty MR lamps in its May 16, 2016 Comments on the NOPR in this rulemaking at pages 107 and 109. NEMA proposed energy conservation standards are represented by wattage caps: 15 watts for LED versions of these lamps and 50 watts for incandescent versions of these

³² http://docketpublic.energy.ca.gov/PublicDocuments/15-AAER-06/TN206828_20151204T051310_Alex_Boesenberg_Comments_NEMA_Comments_to_Title_20_45day_Langua.p df at page 21 *et seq.* Generally, see <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=15-AAER-06>

³³ We provide a copy of this document as an Addendum to our comments. The ANSI Special Report 24f publication documents the sheer variety of lamp bases in the market, many for very specific applications having nothing to do with general service lamp applications. Proposing to capture “all ANSI bases” in the scope of the definition of general service lamps portends unintended consequences for the market that cannot be entirely foreseen.

³⁴ NEMA proposes eliminating the references to the applications because of a legitimate concern that it cannot capture all specialty applications for this lamp that should be excluded. NEMA noticed that the DOE’s proposed applications in its definition of specialty MR lamp do not include aviation applications, which are significant for this product and that would have been a major oversight. The proposed definition of specialty MR lamp above reaches all these applications.

lamps. As NEMA explained in its Comment on the NOPR at page 55, the 45 lumen per watt standard is problematic for the LED version of the MR lamp and a wattage cap would be technologically feasible, economically justified and minimize regulatory testing and certification burden on manufacturers. Likewise a 50 watt wattage cap for the halogen incandescent version of this lamp is more practical and less burdensome to implement.

8) DOE requests comment on its proposed definition of general service lamp.

NEMA Comment: NEMA does not support the proposed definition for both the reasons NEMA provided in its Comments on the NOPR in this rulemaking and for the reasons explained in our General Comment No. 1 on the NOPDDA. Aside from ignoring the severe limitations on the Secretary's ability to include specialty lamps in the definition of general service incandescent lamp and general service lamp, as we discuss in our General Comment No. 1, there is an apparent lack of awareness of the variety of the types of lamps that would be brought into the EPCA regulatory framework and the unintended consequences of doing so. The decision to include all "ANSI bases" in these definitions is extremely troublesome. In its comments on the NOPR, NEMA constructively offered a definition that excluded from the definition "specialty lamp bases" and we did so for good reason: these lamps are not used in household or residential lamp applications. One of our members has provided two pages from its catalog displaying the variety of "ANSI bases" as well lamp shapes that it manufactures. It is attached as Addendum A. We have circled and struck through the unusual lamp bases and shapes that are exclusively commercial lamps or cannot substitute for general service incandescent lamps. Visually, one can easily see that this is an indisputable conclusion. But DOE's proposed definitions would sweep these lamps into the regulations and eliminate them from the market. Additionally, we have circled and struck through the incandescent reflector lamps as well as the incandescent intermediate base and incandescent candelabra bases that are regulated under another provision of EPCA and are not "exempt."

NEMA recommends the definition of general service lamp proposed by NEMA in its Comments on the NOPR, together with collateral definitions of specialty lamp bases and specialty lamps, with modification to include specialty MR Lamps in the definition of specialty lamps.

General service lamp means a lamp that has an ANSI base, but is not a specialty base lamp, has a rated voltage from 110 to 130 volts or has a rated voltage from 11 to 13 volts, has an initial lumen output of 310 lumens or greater (or 232 lumens or greater for modified spectrum general service incandescent lamps) and an initial lumen output of 2600 lumens or less, is not a light fixture, is not a specialty lamp, is not an incandescent reflector lamp or a general service fluorescent lamp, and is used to satisfy a majority of lighting applications. General service lamps include, but are not limited to, general service incandescent lamps, compact fluorescent lamps, general service light-emitting diode lamps, general service organic light emitting diode lamps, and reflector lamps (that are not a specialty base lamp, specialty lamp, or incandescent reflector lamp).

General service light-emitting diode (LED) lamp means an integrated or non-integrated LED lamp designed for use in a majority of lighting applications and is not a specialty lamp or a specialty base lamp (as defined in § 430.2) and that uses light-emitting diodes as the primary source of light. It includes lamps marketed as vibration service, vibration resistant, or rough service lamp.

MR lamp means a curved focusing reflectorized bulb which may have a multifaceted inner surface that is generally dichroic coated and referred to as a multifaceted reflector lamp with a GU10, GU11, GU5.3, GUX5.3, GU8, GU4, or E26 base. It is commonly used with a tungsten halogen light source or an LED light source and may be either open faced or sealed together with a glass lens. The lens, if any, may be either plain or configured. For LED or other technology: A curved focusing bulb following the same general outline shape as the halogen MR. MR lamp designations are based on the diameter of the lamp measured in eighths of an inch: general service MR lamps designated as MR20 (20/8" diameter), MR16 (16/8" diameter), MR14 (14/8" diameter) and MR11 (11/8" diameter) and specialty MR lamps.

Specialty lamp means a lamp that is designed for and used in special applications and is an appliance lamp, black light lamp, bug lamp, colored lamp, infrared lamp, left-hand thread lamp, marine lamp, marine signal lamp, mine service lamp, plant light lamp, rough service incandescent lamp, shatter-resistant lamp (including a shatter-proof lamp and a shatter-protected lamp), showcase lamp, sign service lamp, silver bowl lamp, 3-way incandescent lamps, traffic signal lamp, vibration service incandescent lamp, G shape lamp as defined in ANSI C78.20 (incorporated by reference, see §430.3) and ANSI C79.1-2002 (incorporated by reference, see §430.3) with a diameter of 5 inches or more, T shape lamp as defined in ANSI C78.20 (incorporated by reference, see §430.3) and ANSI C79.1-2002 (incorporated by reference, see §430.3) and that use not more than 40 watts or have a length of more than 10 inches, or B, BA, CA, F, G16-1/2, G-25, G30, S, or M-14 shape lamps as defined in ANSI C79.1-2002 (incorporated by reference, see §430.3) and ANSI C78.20 (incorporated by reference, see §430.3) of 40 watts or less, or a specialty MR lamp.

Specialty base lamp means a lamp with an intermediate base (E17), candelabra base (E12), mini-candelabra base (E11), bayonet base, double ended base, screw terminal base, medium side prong base, mogul prong base, recessed single contact, mogul screw, mogul bi-post, G53, Double Contact Prefocus, 2-Pin GY6.35, 2-Pin G8, and 2-Pin G9 bases when used with any lamp; and 2-pin G4 when used with a non-reflector lamp.

Specialty MR lamp means a lamp that has an MR bulb shape as defined in ANSI C79.1 (incorporated by reference; see §430.3) with a diameter of an 2.25 inches or less, does not operate at 12-13 volts or 120-130 volts; or has a rated life of 1000 hours or less, or has a rated wattage greater than 75; or, if any one of the foregoing attributes is not applicable, is identified in Table 8 of ANSI Special Report 24f, *ANSI Assigned Photo Lamp Codes* (2002) (incorporated by reference; see §430.3).

The Unintended Consequences of Pursuing the Secretary's Proposed Definitions

If the Final Rule includes all voltages and all lamp base types, the scope will be inadvertently broadened to include a vast array of specialty lamp types that cannot possibly be used to satisfy lighting applications traditionally served by general service incandescent lamps. (See Document 'ANSI Special Report – 24f' (attached as Addendum B) for more detail on some (but not all) of the specialty lamp types available.) It sweeps in a broad number of lamps that are exclusively commercial lamps. While most of these lamp types are unknown to the public and never sold in retail outlets, they provide specialized lighting service in a wide variety of applications every day. LED options typically do not exist for these applications, which include airport, airplane, airway, locomotive, automobiles, photographic, stage, studio, and medical, dental and are used in thousands of other types of specialized equipment. We appreciate the realization by DOE staff at the October 21st Public meeting that many niche products might

never have an effective high-efficacy alternative. The current DOE proposal could do great harm to many lighting applications producing serious safety and security concerns if specialty lamps are suddenly no longer available in any technology. This is one important reason why NEMA has proposed to change the definition and scope of a General Service Lamp; to prevent these significant negative outcomes.

Nearly all general service incandescent lamps are used in homes. At the very least, any lamp covered by the scope of the definition of general service lamp must have the potential of being used in a home. There are only two voltages found in a home that operate in any lighting fixture, 120/130 volts or 12 volts. If the lamp does not operate at one of these voltages, it cannot possibly be used to satisfy lighting applications traditionally served by general service incandescent lamps. There are also a limited number of lamp bases used in a home. If a lamp does not have a common base type, it cannot possibly be used to satisfy lighting applications traditionally served by general service incandescent lamps. NEMA's recommended definition restores the statutory focus on these voltages associated with general service lamps.

NEMA's Comments in the NOPR proposed a definition of specialty lamp bases that would be clearly excluded from the definition of general service lamp. Our proposed definition also restored reference to the voltages used by general service incandescent lamps and general service lamps in households. We did so for a very good reason. The odd-ball voltages and lamp bases are used in commercial applications including: airway, airport, aircraft or other aviation service; photo, projection, sound reproduction, or film viewer service; stage, studio or television service; mill, saw mill, or other industrial process service; headlight, locomotive, street railway, or other transportation service; code beacon, marine signal, lighthouse, reprographic, or other communication service; medical and dental Service, microscope, map, microfilm, or other specialized equipment service,

- 9) DOE requests comment on the various definitions proposed to better delineate the GSL definition.

NEMA Comment: NEMA is in agreement with the proposed definitions. At the public meeting on October 21st, some stakeholders believed that further refinement of some definitions was warranted; however, the proposed definitions have been used by the lamp manufacturing industry for a long period of time and are well-understood. These definitions have presented no problems or confusion, and as DOE has proposed they present little chance for evasion and the creation of loopholes. NEMA addresses the comments of the other stakeholders below:

Colored lamps

DOE proposes the following definition of colored lamps and NEMA agrees with that proposal:

Colored lamp means a colored fluorescent lamp, a colored incandescent lamp, or a lamp designed and marketed as a colored lamp and not designed and marketed for general lighting applications with either of the following characteristics (if multiple modes of operation are possible [such as variable CCT], either of the below characteristics must be maintained throughout all modes of operation):

- (1) A CRI less than 40, as determined according to the method set forth in CIE Publication 13.3 (incorporated by reference; see §430.3); or

(2) A correlated color temperature less than 2,500 K or greater than 7,000 K as determined according to the method set forth in IES LM-66 or IES LM-79 as appropriate (incorporated by reference; see §430.3).

NEMA understands that the Secretary is proposing a definition of colored lamp that covers all lamp technologies generally. NEMA further understands that the Secretary is not proposing to amend the statutory definition of “colored incandescent lamp” or the DOE’s definition of colored fluorescent lamp, which remain intact. The definitions of colored incandescent and colored fluorescent lamp were carefully considered during the DOE rulemaking following the enactment of EPLA 1992 and the definitions were intended to recognize what were truly understood to be colored lamps at the time.

One of the stakeholders attending the October 21st public meeting in this proceeding suggested that the word “or” after the semi-colon in clause (1) above be changed to an “and.” NEMA cannot agree with this, because it will eliminate some truly colored lamps from the market with no justification. The DOE recognized the significance of this in 1997 when it established the definition of colored incandescent lamp. 62 Fed.Reg. 29222, 29228-29 (May 29, 1997)(“NEMA asked the Department to clarify that **either a CCT value or a CRI value is sufficient** to determine that a lamp is colored. . . The Department believes the CCT and the CRI methods are both valid indicators of the **color** characteristics of lamps, although they are slightly different. Some lamps may be considered colored according to both methods, whereas others may be considered colored according to one or the other. However, **meeting either criteria is sufficient to demonstrate the colored characteristic**. Also, two methods give the manufacturers flexibility to use the test method that is least burdensome.”)(emphasis supplied).

Infrared

DOE has proposed the following definition for the infrared lamp, and NEMA agrees with that proposal.

Infrared lamp means a lamp that is designed and marketed as an infrared lamp, has its highest radiant power peaks in the infrared region of the electromagnetic spectrum (770 nm and 1 mm), and which has a primary purpose of providing heat.

One of the comments by a stakeholder attending the October 21st public meeting in this proceeding suggested that an incandescent lamp with radiant power peaks in the infrared region (770 nm and 1mm) could simply be marketed as an infrared lamp. That is simply not true. The Secretary’s proposed definition consists of three attributes, each joined by the conjunctive “and.” In the end, the infrared lamp has to provide heat, and if it does not consumers will not purchase for it that purpose. Because it provides heat, and little illumination, it is distinct from the general service incandescent lamp, and there is no plausible chance of lamp switching or use in lighting applications traditionally served by general service incandescent lamps.

Silver bowl

DOE has proposed the following definition for the silver bowl lamp, and NEMA agrees with the proposed definition.

Silver bowl lamp means a lamp that has a reflective coating applied directly to part of the bulb surface that reflects light toward the lamp base and that is designed and marketed as a silver bowl lamp.

This specialty lamp is designed for pendant or hanging light fixtures and has an opaque silver coating on the bulb that causes light to reflect upward toward the ceiling. It is primarily found in commercial applications to create a certain room ambiance. It is simply not suitable for lighting applications traditionally served by general service incandescent lamps in household environments.

Traffic signal lamp

DOE proposes the following definition for traffic lamp, and NEMA agrees with the proposal.

Traffic signal lamp means a lamp that is designed and marketed for traffic signal applications.

This is a lamp that is experiencing substantially declining sales because the Energy Policy and Conservation Act mandates that traffic signal modules utilize light-emitting diode technology for newly manufactured traffic signal modules.³⁵ These lamps have a lower lumen output and longer life than the standard general service incandescent lamp, a more robust construction that results in a significantly higher price for the lamp than a general service incandescent lamp, and utilize a larger A-21 bulb shape. These lamps typically have brass bases so they do not corrode. Consumers will not switch to this unique specialty lamp to avoid using a general service lamp, and this lamp is not found in consumer distribution channels such as retail stores.

10) DOE requests comment on the proposed changes regarding the certification and reporting requirements of integrated LED lamps.

NEMA Comment: NEMA is fine with the ILAC accreditor identification, although we would point out that we understand there are no “identification numbers” for ILAC accreditors. As for the proposal to include CRI in the certification reporting requirements, we ask the Secretary to reconsider this proposal and delete it. CRI is not part of the DOE standards for general service incandescent lamps or general service LED lamps. Adding CRI to the DOE certification adds another regulatory testing and certification burden with respect to an attribute that is not part of the energy conservation standard.

³⁵ We collected data from manufacturers as discussed above, see note 19 and accompanying text, relative to traffic signal lamps and confirmed this observation:

Traffic signal lamps	2012	2013	2014	2015	% Change since 2012
Domestic unit sales	496,686	408,764	277,020	168,178	-66.1%

- 11) DOE requests comment on whether manufacturers anticipate difficulty in transitioning to a backstop standard that would come into effect on January 1, 2020, including, for example, with respect to certain incandescent lamp types for which DOE proposes to discontinue certain exemptions, whether, and to what extent, additional time to transition may be needed.

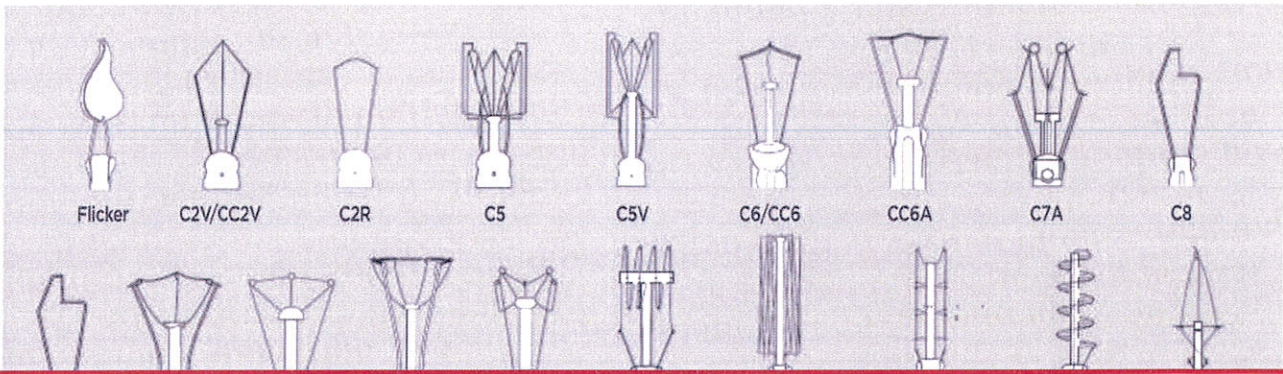
NEMA Comment:

NEMA reiterates its position about the DOE's interpretation of the "backstop" that we outlined in our comments on the NOPR. We respectfully submit that DOE is making an enormous mistake in the way it is interpreted the Appropriations Rider and EISA-2007. See NEMA Comments on the NOPR at 30-35 and 65-66.

As DOE has noted at both public meetings in this proceeding, the "backstop" is unusual in EPCA, because EPCA requires the Secretary to promulgate energy conservation standard that prohibit the *manufacture* of a covered product that does not meet the requirements of the rule after a date certain. In contrast, the "backstop" prohibits the *sale* of products by a specific date. That legislative fact naturally presents enormous inventory management problems that manufacturers and the distributors of their products do not have to concern themselves with when new or amended energy conservation standards are adopted under EPCA. EPCA allows existing inventory of previously compliant product to be sold through the distribution channel after an energy conservation standard goes into effect. The "backstop" will create a stranded inventory problem, even before January 1, 2020, and that presents the likelihood manufacturers, retailers, and distributors will experience significant financial hardship due to millions of dollars of stranded inventory that would have to be destroyed. During the October 21, 2016 public meeting, DOE offered enforcement discretion to any business needing to sell stranded inventory. The broader the definition of general service lamp, the higher likelihood that many specialty products with very low sales volumes and slow turnover will be effected. DOE's unwarranted expansion of the scope of general service incandescent lamps and general service lamps exacerbates this problem even more. The greater the number of product types that are effected and the greater the number of specialty and non-exempt product types are effected, the longer it will take to sell through inventory. The current DOE proposal will have severe impacts on the industry which is a significant reason why NEMA has asked DOE to narrow the scope. If DOE persists on pursuing an overly expansive scope due to an overabundance of caution and unwarranted concern and speculation about lamp switching, industry would require 2-3 years of enforcement discretion to sell down inventories and exit businesses.

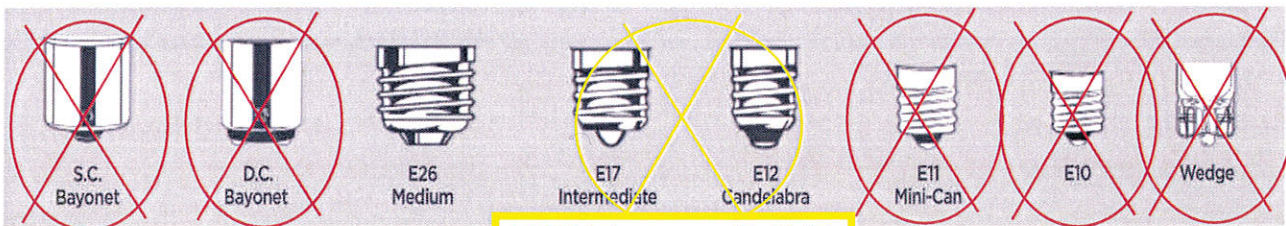
NEMA submits that Congress provided another avenue to address this issue without imposing severe financial burdens on a domestic manufacturing industry, their employees and their customers, if the statutory tests can be met. Congress authorized a second rulemaking for general service lamps beginning in 2020, which includes the further opportunity to consider whether exemptions should be maintained or discontinued. 42 U.S.C. §6295(i)(6)(B). In this later rulemaking, the Secretary may very well discover that market forces and competition have removed these specialty and non-exempt lamp products from the market without a disruptive regulatory fiat and no significant impact on energy consumption. NEMA urges the DOE to reconsider and withdraw its interpretation of the Appropriations Rider and the backstop and reconcile the two in the manner that NEMA recommended in its Comments on the NOPR. DOE's approach to this rulemaking is certainly not aligned with Congress' vision in EISA-2007. NEMA urges the DOE to withdraw consideration of its unwarranted proposed expansion of the scope of this rulemaking and the proposed definitions.

FILAMENT DESIGNATIONS



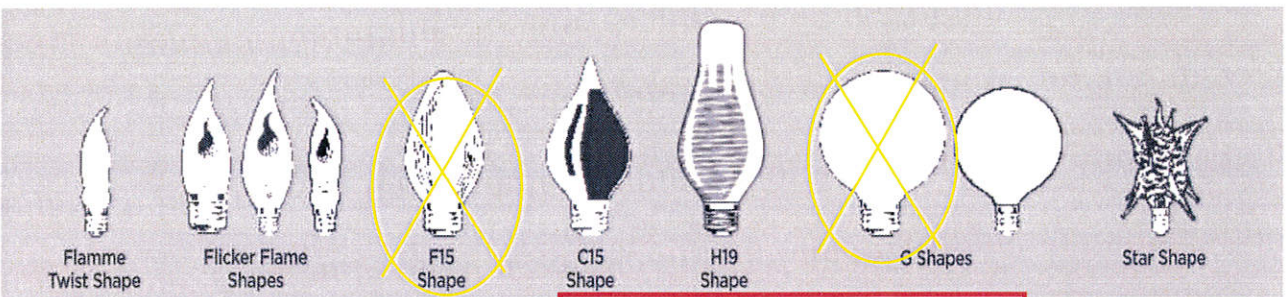
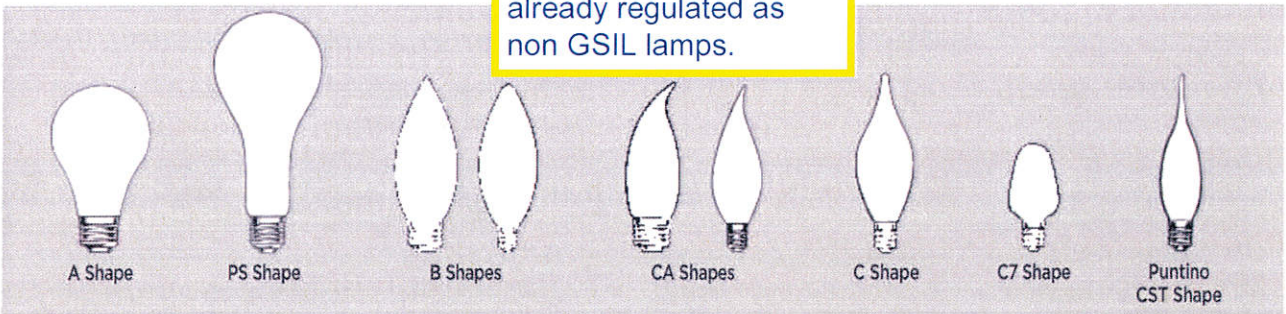
Exclude specialty base types: Single Contact Bayonet, Double Contact Bayonet, E11 Mini-Candelabra, E10, and Wedge

INCANDESCENT BASE TYPES

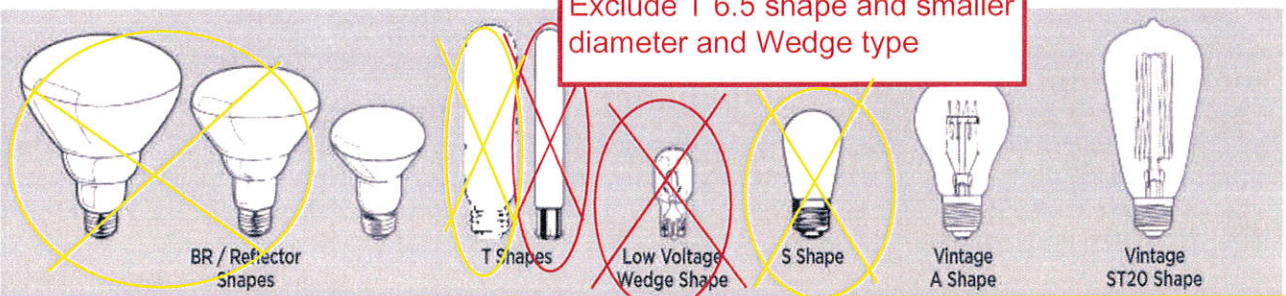


NOTE: Lamps with E17 and E12 base types are already regulated as non GSIL lamps.

INCANDESCENT LAMP



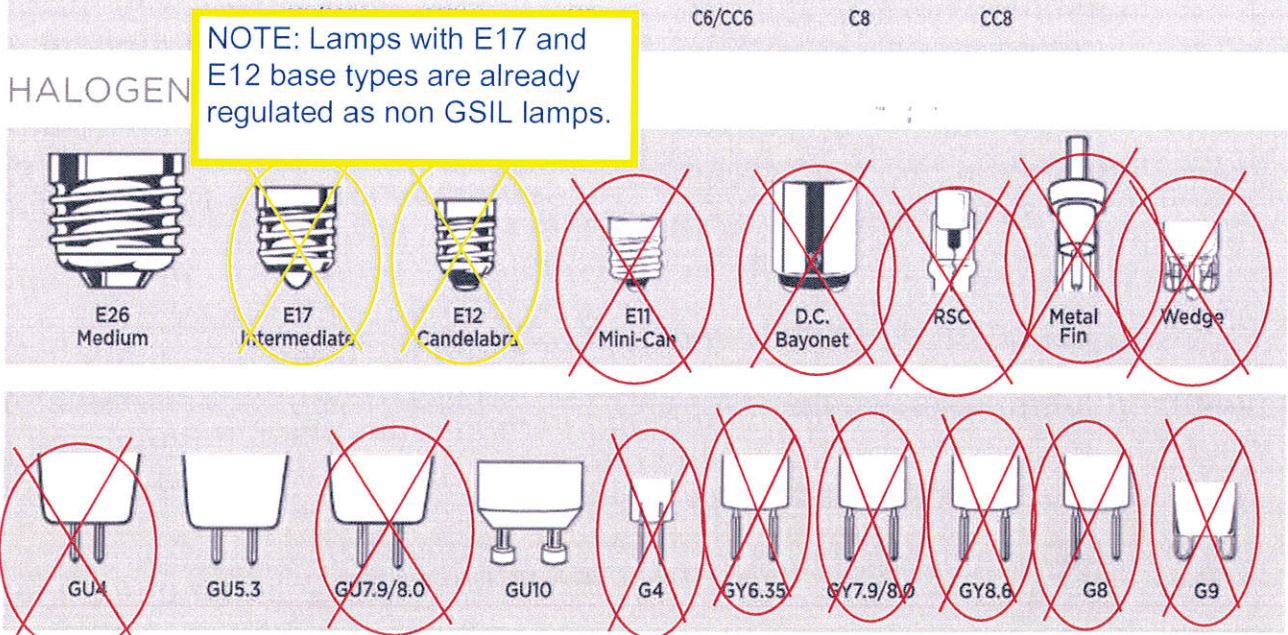
Exclude T 6.5 shape and smaller diameter and Wedge type



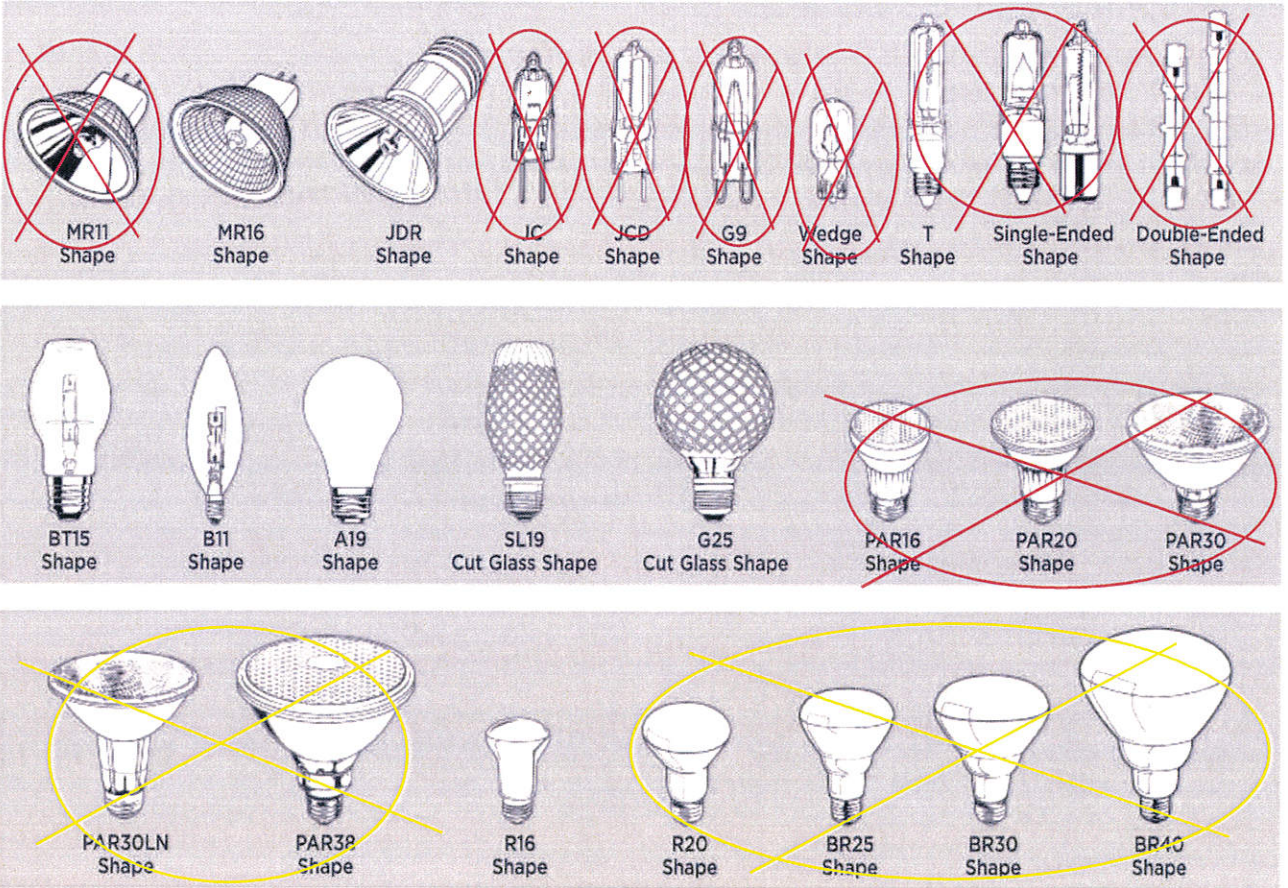
NOTE: Reflector lamps with a diameter of 2.25" or greater are already regulated as IRL lamps. Medium Base F, G, S, and T shape lamps are already regulated as non GSIL lamps.

Exclude specialty base and shape types including:
 E11 Mini-Candelabra, Single Contact Bayonet, Double Contact Bayonet, Recessed Double Contact, Metal Fin Double Contact, wedge, G4, GU4, GY6.35, GU7.9, G8, and G9 base types.
 MR less than 2" diameter, JC, JCD, single ended T6.5 and smaller shape and double ended T6 and smaller shapes.

NOTE: Lamps with E17 and E12 base types are already regulated as non GSIL lamps.



HALOGEN LAMP SHAPES



Reflector lamps with a diameter of 2.25" or greater are already regulated as IRL lamps and should be

ANSI Assigned Photo Lamp Codes



Special Report - 24f

Seventh Edition

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Editors: Ken Denton
Randolph Roy

Technical Writer: Bernie Rachel



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ANSI Assigned Photo Lamp Codes

1 Scope

This special report is a consolidation of design and performance data for all photo lamps for which ANSI three-letter codes have been assigned. These lamps are used for a multitude of photographic, projection, stage-studio, or general lighting applications. Lamp design and performance information contained in this report is that provided by various lamp manufacturers in applications for ANSI three-letter codes, but is not American National Standard information.

Lamp manufacturers' published design and performance values may vary, and appropriate lamp manufacturers should be contacted for more specific or additional information. Also, some lamps listed in this report may no longer be manufactured or used, and lamp manufacturers should be contacted for availability.

Lamp manufacturers also use certain three letter combinations to identify various product families or individual lamp types. Therefore to avoid confusion in the marketplace, these three letter combinations shall not be used as photo lamp codes. The combinations that are excluded as ANSI assigned photo lamp codes are listed in [Table 3](#).

2 Normative references

ANSI C78.260-1998, *Tubular Tungsten Halogen Lamps - Physical Characteristics*

ANSI C78.370-1997, *Method of Designation for Electric Lamps - Photographic, Stage, and Studio*

ANSI C78.1403-1997, *Tungsten-Halogen Lamps with G6.35, GX6.35, and GY6.35 Bases*

ANSI C78.1408-1991, *CBA Projection Lamp*

ANSI C78.1420-2001, *Microfilm Projection Lamps - Two-inch (51mm) Dichroic Coated Integral Reflector, Rim Reference, Tungsten Halogen Lamps with GX5.3 Bases*

ANSI C78.1430-1997, *Slide Projector Lamps, Condensing, Dichroic, 1.65-inch (42mm) Integral Reflector Rim Reference Tungsten-Halogen Lamps with GX5.3 Bases*

ANSI C78.1431-1997, *Slide Projector Lamps, Condensing, Dichroic, Two-inch (51mm) Integral Reflector Rim Reference Tungsten-Halogen Lamps with GY5.3 Bases*

ANSI C78.1432-1997, *Tungsten Halogen Lamps with GZ9.5 Two Pin, Prefocus Bases and 36.6mm Nominal Light Center Length*

ANSI C78.1433-2001, *Two-inch (51mm) Dichroic Coated Integral Reflector, Rim Reference, Tungsten Halogen Large Screen Projection Lamps with GX5.3 Bases*

ANSI C78.1434-2001, *Condensing Dichroic Coated Integral Reflector Side Pin Tungsten-Halogen Projection Lamps with GX7.9 Bases*

ANSI C78.1435-2002, *Projection Lamps - Tungsten Halogen Lamps with G5.3 Bases*

ANSI C78.1460-1991, *Single-Ended Tungsten-Halogen Lamps with GZ9.5 Base, T6 Bulb, 36.5mm LCL, 76.2mm MOL with Proximity Reflector*

ANSI C78.1500-2001, *Tungsten-Halogen Lamps with P28 Bases, 89mm LCL*

ANSI C78.1501-2001, *Tungsten-Halogen Lamps with G22 Bases, 63.5mm LCL*

ANSI C78.1503-2001, *Tungsten-Halogen Lamps with G9.5 Bases, 60.5mm LCL*

ANSI C78.1504-2001, *Tungsten-Halogen Lamps with P28 Bases, 55.5mm LCL*

ANSI C78.1505-2001, *Tungsten-Halogen Lamps with G38 Bases, 127mm LCL*

ANSI C79.1-1994, *Nomenclature for Glass Bulbs Intended for Use with Electric Lamps*

ANSI C81.61-1990, *Electrical Lamp Bases*

SR25d-1997, *Assigned Miniature Lamp Codes*

SR26d-2001, *ANSI Sealed Beam Lamp Codes*

3 Lamp information

All lamp codes are assigned according to ANSI C78.370. All lamps in this report fall into five basic design classes defined by numbers 1 through 5 as follows:

1. Incandescent
2. Single-ended tungsten halogen
3. Double-ended tungsten halogen
4. Integral reflector
5. PAR lamps

All lamps are listed in different colors for each design class. Font colors are [blue for incandescent lamps](#), [green for single-ended tungsten halogen lamps](#), [violet for double-ended tungsten halogen lamps](#), [red for integral reflector lamps](#), and [dark red for PAR lamps](#).

[Incandescent lamps](#) are earlier photographic, projection, and stage-studio lamps with assigned ANSI codes with small to large bulbs and with bayonet, screw, pre-focus, pin, and special bases. Some incandescent projection lamps are four-pin projection lamps mostly with self-contained proximity reflectors mounted next to the filaments and sealed inside the bulbs. Also, some lamps have opaque or black top coatings on the bulbs.

[Single ended tungsten halogen lamps](#) are higher light output higher color temperature photographic, projection, and stage-studio lamps with smaller quartz bulbs and mostly with two-pin bases, but also with bayonet, screw, pre-focus, wedge, and special bases. Again, some projection lamps have self-contained proximity reflectors.

Double ended tungsten halogen lamps are also higher light output higher color temperature projection and stage-studio lamps nearly all with recessed single contact bases at each end of the lamp.

Integral reflector lamps consist of smaller quartz halogen inner lamps focused and cemented inside reflectors. Unless otherwise noted, all reflectors are molded glass reflectors with dichroic reflective coatings. Most integral reflector lamps have two-pin bases, but some have bayonet, screw, and special bases. Also, some lamps have opaque coatings.

Finally, PAR lamps or parabolic aluminized reflector lamps are high light output PAR36 or PAR64 photographic or stage-studio lamps with double contact lug or special bases.

4 Description of lamp data

Lamp design and performance data included in this report are as follows:

Code or ANSI assigned three-letter lamp code

Class or design classification 1, 2, 3, 4, or 5

Volts or rated voltage

Watts or rated wattage

Amps or amps of current rated lamps.

Bulb designations used are in accordance with ANSI C79.1.

Base designations used are in accordance with the International Electrotechnical Commission (IEC) and in accordance with ANSI C81.61. Some bases without IEC or ANSI designations are listed as various special designs. Some information on base designations in this report is provided in Tables 1 and 2, pages 4 and 5.

Lumens

Color temperature where appropriate

Life or design life declared by the manufacturer

Burn position recommended

LCL or light center length of incandescent, single ended tungsten halogen, and some integral reflector lamps with side pin bases.

MOL or maximum overall length

WD or working distance of some incandescent projection lamps with self-contained proximity reflectors and integral reflector lamps.

Beam spread of integral reflector and PAR lamps

Beam candlepower meaning center beam candlepower or maximum beam candlepower of integral reflector or PAR lamps.

Comments including other design features such as proximity reflectors, opaque coatings, and special reflectors and beam patterns of integral reflector lamps.

Also, there is additional performance, dimensional, or other design information specifically for some lamp types listed in this special report contained in some ANSI lamp performance, dimensional, or design standards. These lamp specific ANSI standards are given under comments for these listed lamp types. All of these ANSI lamp specific standards are also listed as Normative References.

There are now 919 lamps with ANSI assigned photo lamp codes. In the following pages, all of these lamps are first listed in order of assigned ANSI code. Then lamps of each of the five design classifications are listed separately and sorted by watts, volts, and life in which bulb and base sizes tend to get progressively larger.

Finally, some data are missing from the special report. Either information was not provided in the original Lamp Code Designation form, or there was no Lamp Code Designation form in the archives to use as a reference.

Other special reports on ANSI assigned lamp codes, SR25d and SR26d are available from NEMA.

Table 1 - Base Codes and Common Names

Base code	Common Name or Description
BA15s	Candelabra bayonet, single contact
BA15d	Candelabra bayonet, double contact
E10/12	Miniature screw
E11	Minican screw
E12/15	Candelabra screw
E17/20	Intermediate screw
E26/24	Medium screw
E39	Mogul screw
G2.4	Two-pin
G3.18	Two-pin
G3.9	Two-pin
G4	Two-pin
GZ4	Two-pin
G4.5	Two-pin
G5.3	Miniature two-pin
GX5.3	Two-pin (low voltage)
GY5.3	Two-pin flattened pins (high voltage)
G6.35	Glass two-pin
GX6.35	Two-pin
GY6.35	Glass two-pin
GZ6.35	Two-pin
G7.9	Side pin (high voltage)
GX7.9	Side pin (low voltage)
G9.5	Medium two-pin
GX9.5	Medium two-pin
GY9.5	Two-pin prefocus (higher wattage)
GZ9.5	Two-pin prefocus
G16d	Extended mogul end-prong
GY16	Two-pin
G17t	Tri-pin prefocus
G17q	Four-pin prefocus (high voltage)
GX17q	Four-pin prefocus (low voltage)
G20	Two-pin
G21	Two-pin
G22	Medium bipost
G38	Mogul bipost
P28s	Medium single contact prefocus
P30s	Candelabra single contact prefocus
P30d	Candelabra double contact prefocus
P40s	Mogul single contact prefocus
R7s	Recessed single-contact
RX7s	Recessed single-contact
Wedge	

Table 2 - Special Bases

Base code	Common Name or Description
Special A	Miniature three-pin
Special B	Double contact medium ring
Special C	G17 special connection
Special D	Small indexing ring
Special E	Large indexing ring (B&H large ring)
Special F	Locking four-pin
Special G	Screw terminals
Special H	Two-button
Special I	Two-pin plug
Special J	Ferrule contact
Special K	Special cable leads

Table 3 - Three Letter Combinations Excluded as ANSI Assigned Photo Lamp Codes

ADZ	ELO	HBO	KRC	MLW	PLC	SLS	VHO	XBO
ARC	ELT	HLX		MPR	PLS	SOX	VIP	XOP
ATC		HMD		MQI	PLT	SPL		
		HMI	LUH	MSD	PLZ			
		HMP		MSR				
BLB		HOK		MVR				
		HPA		MVT				
		HPL		MXR				
CDM		HPR						
CFL		HPW						
CMH		HSB						
CSS		HSD						
		HSR						
		HTI						
		HTK						
		HTQ						

Table 4 – ANSI assigned photo lamp codes – All Lamps

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
BAA	4	28	75	MR16	GX5.3		3000	2000	Any		44.5	3327			
BAB	4	12	20	MR16	ABLE3		3150	3000	Any		44.5				
BAH	1	115	300	A21	E26/24	9300	3200	20	Any	96	133.4				
BAK	1	4	3	T5	P30s	30		250	Any	28.6	50.8				
BAL	1	28	19	B6	BA15d			100	Any	26.4	42.1				
BBA	1	115	250	A21	E26/24	8700	3400	3	Any	85.7	125.4				
BBB	4	12	45	MR16	GX5.3			400	BDTH		44.5				
BBF	4	12	20	MR16	GX5.3		2672	2000	Any		44.5				
BBG	4	12	75	MR16	GX5.3		2714	3500	Any		44.5				
BCA	1	115	250	A21	E26/24	5400	4800	3.5	Any	85.7	125.4				
BCD	2	12	50	T3.5	G6.35	1350		50	BDTH	30	44				
BCK	2	120	500	T6	G17t		3200	50	BDTH	39.7	88.9				Proximity reflector
BCL	2	120	300	T6	G17t		2950	1000	BDTH	39.7	82.6				Proximity reflector
BCM	2	220	20000	T32	G38	580000	3200	350		354	560				
BDD	1	20	150	T8	BA15s			50	BD	40.5	92.1				
BDJ	1	120	200	B12	BA15d		3200	20	BD	34.9	66.7				
BDK	1	120	100	R14	BA15d		3400	4	Horiz		69.9				
BDL	2	120	2500	BT12	G22	70000	3200	400	BDTH	90	175				
BDM	2	120	2000	BT12	G22	55000	3200	400	BDTH	90	175				
BEC	1	120	150	B12	BA15d	3500	3075	25	BD	34.9	66.7				
BEH	1	120	150	T10	G17q	3500	3100	15	BDTH	33.4	79.4				
BEJ	1	120	200	B12	BA15d	4600	3100	25	BD	34.9	66.7				
BEP	1	115	300	R30	E26/24		3400	4	Any		133.4				
BEV	1	20	150	G16.5	P30s	4000	3300	50	BU	52.4	76.2				
BEY	1	20	100	G16.5	P30s	2700		50	BDTH	34.9	76.2				
BFA	1	115	375	R40	E26/24		3400	4	Any		168.3				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
BFD	2	120	1000	T12	P28s	31000	3350	10	BD	55.6	146.1				
BFE	1	120	750	T20	P28s	17000	3000	200	BDTH	55.6	146.1				
BFK	1	120	750	T20	P28s	17000	3000	200	BDTH	55.6	146.1				
BFL	1	115	750	T20	P28s	13500	3050	200	BD	55.6	146.1				
BGB	1	4	3	S8	P30d	30		50	Any	28.8	50.8				
BHB	4	120	250	MR14	G7.9		3400	25	Horiz	15.9	47.4	65.8			
BHC	2	120	600	T6	GZ9.5	17500	3200	75	Any	36.5	63.5				
BHD	1	20	100	S11	BA15s	2800		50	BDTH	34.9	60.3				
BHH	1	120	100	S11	BA15d	2000	3200	15	BDTH	34.9	60.3				
BJK	2	120	750	BT10	P28s	18000		150	BDTH	55	127				
BKD	2	120	750	T7	G22	18000	3200	150	BDTH	63.5	140				
BKE	2	120	1000	T7	G22	25000	3200	175	BDTH	63.5	140				
BKK	2	120	1000	BT10	P28s	25000		175	BDTH	55.5	127				
BKR	1	115	30	S11	E12/15	400	2775	50	Any	41.3	57.2				
BKV	1	115	30	S11	BA15s	400	2775	50	Any	34.9	60.3				
BLC	1	115	30	S11	BA15d	400	2775	50	Any	34.9	60.3				
BLK	1	120	30	S11	E12/15	400	2700	50	Any	41.3	57.2				
BLR	1	115-125	50	S11	BA15s	780	2850	50	BDTH	34.9	60.3				
BLX	1	115-125	50	S11	BA15d	780	2850	50	BDTH	34.9	60.3				
BMA	1	115	150	S11	Special D		3100	10	Horiz	28.2	65.1				
BMD	1	115-125	100	S11	BA15d	2000	3000	25	BDTH	34.9	60.3				
BMG	1	115-125	100	S11	BA15d	2000	3000	25	BDTH	34.9	60.3				
BMS	1	120	8	S11	E26/24			1400	Any		57.2				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
BMV	1	120	100	S11	BA15s	1860	2950	50	BDTH	34.9	60.3				
BNF	1	120	75	S11	BA15d	1300	2900	25	BDTH	34.9	60.3				
BRD	1	4	3	T5	BA15s	30		50	Any	31.8	50.8				
BRH	3	120	1000	T5	R7s	30000	3375	75	Any		95.3				See ANSI C78.260
BRJ	2	15	150	T3	G6.35	5000	3400	50	BDTH	30	44				See ANSI C78.1403
BRK	1	4	3	T5	P30s	28		50	Any	28.6	60.3				
BRL	2	12	50	T3.5	G6.35	1400	3400	50	BDTH	30	44				See ANSI C78.1403
BRN	2	120	1200	T7	G17t		3350	20	BD	39.7	95.3				Proximity reflector
BRP	2	120	750	T7	G17t		3250	50	BD	39.7	95.3				Proximity reflector
BRR	2	120	1000	T7	G17t		3250	50	BD	39.7	95.3				Proximity reflector
BRS	1	4	3	T5	P30s	30		50	Any	28.6	50.8				
BRT	2	80	600	T8	GZ9.5	13200	3100	200	BD	36.6	66				
BRW	2	225	1000	T7	Special A	30000	3400	10	Any	54	90				
BRX	1	6	6	T5	P30d	70		100	Any	28.6	60.3				
BSB	1	6	6	T5	P30s	70		100	Any	28.6	60.5				
BSC	2	120	750	T5	G22	20000	3200	250	Any	101.6	165.1				
BSD	2	120	750	T5	G22	15000	3000	2000	Any	101.6	165.1				
BSE	2	225	500	T5	G6.35	15000	3400	10	Any	44	70				
BSF	2	25	280	T4	G6.35	9500	3400	15	Any	33	55				See ANSI C78.1403
BSH	3	225	500	T3	R7s	9500	2950	2000	Any		119.8				
BSJ	2	220	440	T5	G6.35	4700	3200	200	Any	40	71				
BSK	1	6	6	T5	P30s	70		100	Any	28.6	50.8				
BSS	1	6	6	T5	P30s	70		100	Any	28.6	60.3				
BSW	1	7	1.4	T5	P30s	15		50	Any	28.6	60.3				
BTA	2	120	1000	T7	GX9.5	25200	3250	50	BDTH	44.5	95.3				
BTC	2	120	1000	T7	Special B	25200	3250	50	BU	88.9	149.2				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
BTD	1	7	1.4	T5	P30d	16		50	Any	28.6	60.3				
BTG	2	120	1200	T7	G17t	38200	3350	20	BD	39.7	95.3				
BTL	2	120	500	T6	P28s	11000	3050	500	BDTH	55.6	127				See ANSI C78.1504
BTM	2	120	500	T6	P28s	13000	3200	100	BDTH	55.5	127				See ANSI C78.1504
BTN	2	120	750	T7	P28s	17000	3050	500	BDTH	55.5	127				See ANSI C78.1504
BTP	2	120	750	T7	P28s	20000	3200	200	BDTH	55.5	127				See ANSI C78.1504
BTR	2	120	1000	T7	P28s	27500	3200	200	BDTH	55.5	127				See ANSI C78.1504
BTT	1	9	19.4	T5	BA15s	310		150	Any	28.6	54				
BVA	2	120	900	T7	GY9.5		3250	75	BDTH	44.5	88.9				Proximity reflector
BVB	1	120	30	T7	BA15s	465		25	BD	34.9	66.7				
BVE	2	120	625	T6	GZ9.5		3200	75	BDTH	44.5	88.9				
BVK	1	5	32.5	T8	P30s	365		50	BDTH	41.3	66.7				
BVL	1	6	6	T5	P30s	85		400	Any	28.6	60.3				
BVM	2	225	650	T7	GX6.35	20000		15	Any		57.5				See ANSI C78.1403
BVR	1	120	30	T7	BA15d	465		25	BD	34.9	66.7				
BVT	2	120	1000	T7	P40s	23000	3050	500	Any	100	177.8				
BVV	2	120	1000	T7	P40s	27500	3200	200	Any	100	177.8				
BVW	2	120	2000	T11	P40s	57500	3200	200	Any	100	203.2				
BWA	2	120	2000	T8	G38	54000	3200	500	BD	127	203.2				See ANSI C78.1505
BWD	1	8.5	35.7	T8	P30d	700		150	BD	41.3	79.4				
BWF	2	120	2000	T8	E39	59000	3200	500	BD	133.4	190.5				
BWG	2	120	2000	T8	E39	57200	3200	500	BD	133.4	190.5				
BWL	2	120	2000	T8	E39	57200		500	BD	241.3	298.5				
BWM	2	120	750	T7	G9.5	20900	3200	200	BDTH	60.3	114.3				See ANSI C78.1503
BWN	2	120	1000	T7	G9.5	28500	3200	250	BDTH	60.3	114.3				See ANSI C78.1503
BXA	1	10	75	T8	P30s			100	BD	37.3	79.4				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
BXB	1	8.5	34	T8	P30s	690		100	BDTH	41.3	79.4				
BXE	1	10	75	T8	BA15s			100	BD	44.5	79.4				
BXG	1	10	75	T8	BA15s			100	BD	40.5	79.4				
BXJ	1	8.5	34	T8	BA15s	690		100	BDTH	44.5	79.4				
BXM	1	9	36	T8	P30s			500	BD	37.3	79.4				
BXN	1	10	50	T8	P30s			100	BD	37.3	79.4				
BXT	1	12	100	T8	BA15s	2250	3050	25	BD	34.9	79.4				
BYA	1	10	75	T8	P30s			100	BD	41.3	79.4				
BYS	1	9	36	T8	P30s			500	BD	37.3	79.4				
BZW	1	120	50	T8	BA15s	850	2810	50	BD	34.9	79.4				
CAC	1	120	50	T8	BA15d	900	2810	50	BD	34.9	79.4				
CAJ	1	120	50	T8	BA15d	850	2850	50	BD	34.9	79.4				
CAL	1	120	300	T10	G17q		3200	25	BD	39.7	101.6				Proximity reflector
CAR	1	120	150	T10	G17q		3100	15	BD	33.4	79.4				Proximity reflector
CAS	1	120	50	T8	BA15s	775	2875	50	BD	34.9	79.4				
CAW	1	120	50	T8	BA15d	810	2900	50	BD	34.9	79.4				
CAX	1	120	50	T8	BA15d	775	2875	50	BD	34.9	79.4				
CBA	2	120	500	T6	G17q		3200	50	BDTH	44.5	92				See ANSI C78.1408
CBJ	1	120	75	T8	BA15s	1250	2950	50	BD	34.9	79.4				
CBX	1	120	75	T8	BA15d	1250	2950	50	BD	34.9	79.4				
CCK	1	120	75	T8	P30d	1300	2925	50	BD	31.8	79.4				
CCM	1	120	200	T8	BA15d	4500	3100	25	BD	34.9	92.1				
CDD	1	120	100	T8	BA15s	2000	2975	50	BD	34.9	79.4				
CDJ	1	120	100	T8	BA15d	2000	2975	50	BD	34.9	79.4				
CDK	1	120	100	T8	BA15d	2000	2975	75	BD	34.9	79.4				
CDS	1	120	100	T8	BA15s	1800	2900	50	BD	34.9	79.4				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
CEB	1	120	100	T8	BA15d	1850	2975	50	BD	34.9	79.4				
CEL	1	120	120	T8	BA15d	1950	3000	200	BD	34.9	79.4				
CEM	1	120	120	T8	BA15s	1950	3000	200	BD	34.9	79.4				
CEW	1	120	150	T8	BA15s	3500	3100	25	BD	34.9	92.1				
CGE	1	120	150	T8	BA15s	2500	3000	200	BD	34.9	92.1				
CGP	1	120	150	T8	BA15d	3500	3075	25	BD	34.9	92.1				
CGW	1	120	200	T8	BA15s	4200	3075	25	BD	34.9	92.1				
CHG	1	120	200	T8	P30d	4600	3075	25	BD	31.8	92.1				
CHK	1	120	150	T8	BA15s	2995	2850	500	BD	34.9	92.1				
CHT	2	120	5000	GT19	G38	35000	3200	350	BDTH	165.1	279.4				
CHY	1	230	50	T8	BA15d	650	2560	50	BD	34.9	79.4				
CJX	1	230	100	T8	BA15d	1650	2850	50	BD	34.9	79.4				
CLS	1	120	300	T8.5	BA15s	7700	3200	25	BD	34.9	104.8				
CLX	1	120	300	T8.5	BA15d	7600	3200	25	BD	34.9	104.8				
CMV	1	120	300	T8.5	BA15s	7300	3100	25	BD	34.9	104.8				
CPR	1	6	108	T10	P28s	2250	3075	50	BD	55.6	146.1				
CRT	1	120	300	T10	G17q		2900	250	BD	39.7	101.6				Proximity reflector
CSH	1	120	150	T10	G17q			500		33.4	101.6				
CTL	1	120	150	T10	P28s	2600	3000	500	BD	55.6	146.1				
CTT	1	120	1000	T12	G17q		3300	25	BD	39.7	117.5				Proximity reflector
CVS	1	120	200	T10	P28s	4250	3025	50	BD	55.6	146.1				
CWA	1	120	750	T12	G17q		3250	25	BD	39.7	117.5				Proximity reflector
CWD	1	120	300	T10	G17q	7500	3150	25	BD	39.7	101.6				
CWZ	2	120	1500	T8	P40s	38500	3200	325	Any	100	190.5				
CXH	1	230	300	T10	G17q			25	BD	39.7	101.6				
CXK	1	120	300	T10	P28s	7500	3200	25	BD	55.6	146.1				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
CXL	1	8	50	T9.5	P30s			25	BD	47	96	33.5			Opaque coating
CXR	1	8	50	T8	P30s		3200	25	BD	47	96	33.5			Opaque coating
CXY	1	120	300	T10	P28s	7300	3100	25	BD	55.6	146.1				
CXZ	2	120	1500	T8	G38	38500	3200	325	BD	127	203.2				See ANSI C78.1505
CYC	1	120	300	T10	BA15s	7600	3200	25	BD	34.9	81				
CYK	1	120	400	T10	G17q		3100	200	BD	39.7	104				
CYS	1	120	1200	T12	G17q		3300	10	BD	39.7	117.5				Proximity reflector
CYV	2	120	1000	T7	G38	27500	3200	200	Any	127	196.9				See ANSI C78.1505
CYX	2	120	2000	T9.5	G38	59000	3200	250	BDTH	127	215.9				See ANSI C78.1505
CZA	1	120	500	T10	G17q		3300	25	BD	39.7	101.6				Proximity reflector
CZG	1	230	500	T10	G17q			25	BD	39.7	101.6				Proximity reflector
CZM	2	120	2000	GT13	G38	55000	3200	250	BDTH	127					Proximity reflector
CZS	1	120	500	T10	E26/24	12500	3200	25	BD	76.2	139.7				
CZX	1	120	500	T10	P28s	12500	3200	25	BD	55.6	146.1				
DAF	1	120	300	T10	Special C		3100	300	BD	33.4	101.6				
DAH	1	120	500	T12	G17q		3200	200	BDTH	44.5	94				Proximity reflector
DAK	1	120	500	T10	G17q	13400	3200	25	BD	39.7	101.6				
DAN	1	118	200	R20	E26/24		3400	4	Any		101.6				
DAR	1	120	500	T10	Special D	12500	3200	25	BD	58.8	139.7				
DAS	1	120	500	T10	Special B	13000	3250	25	BU	88.9	149.2				
DAT	1	120	400	T10	G17q		3200	25	BD	39.7	101.6				
DAY	1	120	500	T10	G17q	13000	3200	30	BD	39.7	104				
DCA	1	21	150	T12	GX17q		3250	15	BDTH	39.7	90.5	44.5			Opaque coating
DCF	1	21	150	T12	GX17q		3250	15	BDTH	39.7	90.5	57			Dichroic coated reflector
DCH	1	120	150	T12	G17q			3150	BD	39.7	90.5	57			Opaque coating

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps		Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
DCL	1	120	150		T12	G17q		3150	15	BD	39.7	90.5	57			Dichroic coated reflector
DCT	2	120	2000		T9.5	G38	47000		1000	Any	127	216				
DCW	1	24	150		T12	GX17q		3050	50	Horiz	33.4	81				
DCX	1	120	750		T12	E26/24	19500	3250	25	BD	76.2	139.7				
DCY	1	120	150		T12	GX17q		3000	500	Horiz	44.5	92.1				Proximity reflector
DDA	1	24	150		T12	GX17q		3300	18	Horiz	33.4	74.1				Opaque coating
ddb	1	120	750		T12	P28s	20000	3250	25	BD	56.0	146.1				
DDF	4	17	55		MR16	GX5.3			300	BDTH		44.5	55.6			
DDJ	2	10	80		T3	GY9.5	1400	3150	1000	Any	27	59.5				
DDK	4	19	80		MR16	GX5.3		3300	40	BDTH		44.5	152			
DDL	4	20	150		MR16	GX5.3		3150	500	BDTH		44.5	197			See ANSI C78.1420
DDM	4	19	80		MR16	GX5.3		3350	50	BDTH		44.5	152			See ANSI C78.1433
DDN	3	20	200		T3	R7s	5000	3150	100	Horiz		60.1				See ANSI C78.260
DDP	2	22	132		T4	GZ9.5	3600	3250	125	BDTH	33.4	57.2				
DDS	4	21	80		MR16	GX5.3		3125	1000	BDTH		44.5	165			See ANSI C78.1420
DDY	1	120	750		T12	P28s	17000	2950	200	BD	55.6	146.1				
DDZ	2	24	250		T4	G6.35			1500	BDTH		55				
DEB	1	120	500		T12	P28s	9000	2850	800	BU	88.9	155.6				
DEC	1	120	750		T12	Special	20100	3275	25	BU	88.9	149.2				
DED	4	14	85		MR16	GX5.3		3150	1000	BDTH		44.5	165			See ANSI C78.1420
DEE	2	12	75		T3	G6.35	2100		50	BDTH	28.4	44				
DEF	1	21	150		T12	GX17q		3250	15	BDTH	39.7	90.5	44.5			Dichroic coated reflector
DEJ	1	120	750		T12	Special E	20000	3250	25	BD	58.8	139.7				
DEK	1	120	500		T12	G17q		3250	25	Horiz	44.5	92.7				Proximity reflector
DEP	1	120	750		T12	G17q	20000	3250	25	BD	39.7	117.5				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
DFA	1	120	150	T12	G17q		3150	15	BD	39.7	90.5	44.5			Opaque coating
DFD	1	120	1000	T12	P28s	31000	3350	10	BD	55.6	146.1				
DFE	1	30	80	T12	GX17q		3200	15	Horiz	39.7	81	57			Opaque coating
DFF	1	120	150	T12	G17q		2850	500	BD	39.7	77				Proximity reflector
DFG	1	120	150	T12	G17q		3150	15	BD	39.7	90.5	44.5			Opaque coating
DFK	1	120	1000	T12	Special E	30500	3375	10	BD	58.8	139.7				
DFN	1	120	150	T12	G17q		3150	15	Horiz	39.7	81	57			Opaque coating
DFR	1	120	500	T12	Special F			25	BDTH	44.5	98.5				Proximity reflector
DFT	1	120	1000	T12	P28s	28000	3300	25	BD	55.6	146.1				
DFW	1	120	500	T12	G17q		3200	25	BDTH	44.5	95.3				Proximity reflector
DFY	1	120	1000	T12	Special E	28000	3250	25	BD	58.8	139.7				
DGA	1	120	300	T10	G17q		3150	25	BDTH	44.5	101.6				
DGB	1	30	80	T12	GX17q		3200	15	BD	39.7	90.5	57			Opaque coating
DGF	1	120	500	T12	G17q	12500	3200	25	BDTH	44.5	101.6				
DGH	1	120	750	T12	P28s	15000	3050	500	BD	55.6	146.1				
DGS	1	120	1000	T12	Special B	33000	3375	10	BU	88.9	149.2				
DHJ	1	120	250	T12	G17q		3250	10	BD	39.7	117.5	35			Opaque coating
DHN	1	120	500	T12	G17q		3200	25	BDTH	44.5	95.3				Proximity reflector
DHT	1	120	1200	T12	P28s	37000	3350	10	BD	55.6	146.1				
DJA	1	120	150	T12	G17q			15	BD	39.7	90.5	57			Opaque coating
DJC	2	245	1000	Special	GX6.35	33000	3400	15	BDTH		65				
DJD	2	225	500	T5	G6.35	12500	3200	50	Any	44	75				
DJE	2	225	1000	Special	GX6.35	26000	3200	75	BDTH		75				
DJF	2	20	120	T3	G6.35	2700		500	BDTH	32	50				
DJG	1	6	10	T2.5	BA15s	180		70	Any	19	36.5				
DJL	1	120	150	T14	G17q		3150	15	BH	39.7	88.9	44.5			Opaque coating

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps		Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
DJT	4	14	50		MR16	GX5.3		3150	1000	BDTH		44.5	152			See ANSI C78.1420
DJV	1	4	3	0.75	T3	G4.5	30	2800	200	BDTH	20	45				
DJW	1	4	3	0.75	T3	G4.5	30	2800	200	BDTH	20	45				
DKM	1	21.5	250		T14	GX17q		3300	25	BD	39.7	100	52.4			Dichroic coated reflector
DKN	1	6	35		T12	GX17q			500	BDTH	39.7	90.5				Opaque coating
DKP	1	21.5	250		T14	GX17q			25	BD	39.7	100	67.3			Dichroic coated reflector
DKR	1	21.5	150		T14	GX17q		3250	10	BD	39.7	90.5	39.6			Dichroic coated reflector
DKX	2	120	1500		PS52	B9	41000	3200	1000	Any	241.3	330				
DKZ	2	120	1000		PS52	E39	28000	3200	750	Any	241.3	330				
DLC	1	120	250		T14	P28s	5500	3050	50	BD	55.6	146.1				
DLD	1	30	80		T14	GX17q			15	BD	39.7	88.9	44.5			Dichroic coated reflector
DLG	1	21.5	150		T14	GX17q			10	BDTH	39.7	90.5	44.5			Opaque coating
DLH	1	120	250		T14	G17q		3200	15	Horiz	39.7	88.9	44.5			Dichroic coated reflector
DLN	1	120	750		T12	G17q		3250	25	Horiz	44.5	95.3				
DLR	1	21.5	250		T14	GX17q		3300	10	BD	39.7	100	52.4			Dichroic coated reflector
DLS	1	21.5	150		T14	GX17q			10	Horiz	39.7	90.5	44.5			Dichroic coated reflector
DLT	1	30	500		T20	E26/24	1250		50	BD	76.2	139.7				
DLY	1	30	500		T20	P28s	1250		50	BD	55.6	146.1				
DMJ	1	240	480		T14	G17q		3200	50	Horiz	41.3	92.1				Proximity reflector
DMK	1	120	500		T14	G17q		3200	75	Horiz	41.3	92.1				Proximity reflector

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
DML	1	120	400	T14	G17q		3200	75	Horiz	41.3	92.1				Proximity reflector
DMS	1	120	500	T20	E26/24	13200	3200	50	BD	76.2	139.7				
DMX	1	120	500	T20	P28s	13200	3200	50	BD	55.6	146.1				
DNE	4	120	150	MR16	G7.9		3350	12	Horiz	15.9	50.8	69.1			
DNF	4	21	150	MR16	GX7.9		3400	25	Horiz	15.9	50.8	69.1			See ANSI C78.1434
DNS	1	120	500	T12	P28s	11000	3100	200	BU	88.9	155.6				
DNT	1	120	750	T12	P28s	17000	3100	200	BU	88.9	155.6				
DNV	1	120	1000	T12	P28s	24000	3100	200	BU	88.9	149				
DNW	1	120	500	T20	P28s	9500	3050	500	BDTH	55.5	146.1				
DPB	1	120	750	T20	E26/24	20500		25	BD	76.2	139.7				
DPC	4	8	50	MR16	GZ6.35			50	Horiz		42	32			
DPD	2	14.5	90	T3	G3.18	2500	3500	500	Horiz	28					
DPE	2	21	80	T3	G3.18	1900	3240	1000	Horiz	28					
DPF	2	13.8	25	T3	G3.18	500	3100	250	Horiz	27.3					
DPG	2	13.8	50	T3	G3.18	1250	3250	1000	Horiz	27.7					
DPH	2	13.8	85	T3	G3.18	2100	3250	1000	Horiz	28					
DPJ	1	120	750	T20	P28s	19000	3250	25	BD	55.6	146.1				
DPL	2	12	50	T3	Special	875	3125	2500	Any	31.5					
DPT	1	120	1000	T20	E39	28000	3200	50	BD	120.7	230.2				
DPW	1	120	1000	T20	P40s	28000	3200	50	BD	87.3	241.3				
DPY	2	120	5000	T17	G38	14000	3200	50	BD	165.1	279.4				
DRA	2	120	300	T5	G6.35	6900	3100	300	BDTH	33					See ANSI C78.1403
DRB	1	120	1000	T20	P28s	32000	3350	25	BD	55.6	146.1				
DRC	1	120	1000	T20	P28s	29000	3250	50	BD	55.6	146.1				
DRG	1	118	1000	T20	E26/24	28500		25	BD	76.2	139.7				
DRS	1	120	1000	T20	P28s	29000	3300	25	BD	55.6	146.1				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
DRW	1	120	1000	T20	E39	28500	3325	25	BD	120.7	230.2				
DSA	1	120	750	T20	P28s	17000		500	BD	55.6	146.1				
DSB	1	120	1000	T20	P40s	38500	3325	25	BD	87.3	241.3				
DSE	2	120	1000	T20	E39	23500	3050	500	BU	241.3	304.8				
DSF	2	120	1500	T20	E39	41000	3200	200	BDTH	241.3	304.8				
DSW	1	24	200	T14	GX17q		3200	25	BDTH	39.7	87.3	44.5			Dichroic coated reflector
DTA	2	120	1500	T8	P40s	39000	3200	100	Any	87.3	203.2				
DTJ	1	120	1500	T20	P40s	42500	3225	25	BD	87.3	241.3				
DTS	1	120	1500	T20	G38	42500	3225	25	BD	101.6	241.3				
DTY	2	120	10000	T24	G38	28500	3200	300	BD	254	391				
DVF	1	120	2000	G48	G38	61000	3200	100	BD45	127	238.1				
DVG	1	120	500	T20	G22	14500	3200	50	BD45	63.5	165.1				
DVH	1	120	750	T24	G13	22000	3200	50	BD45	63.5	165.1				
DVS	3	120	500	T3	R7s			2000	Horiz		117.5				
DVV	3	120	1500	T8	R7s	42700	3200	400	Any		142.9				See ANSI C78.260
DVX	3	165	1500	T3.25	R7s	36000	3100	600	Horiz		186				See ANSI C78.260
DVY	2	120	650	G6	G5.3	20000	3400	25	BDTH	36.5	63.5				
DWC	1	120	150	R40	E26/24		2800	2000	Any		165.1				
DWD	1	100	300	R40	E26/24		2800	2000	Any		165.1				
DWE	5	120	650	PAR36	Special G		3200	100	Horiz		69.9				
DWH	5	6.3	100	PAR36	Special G		3400	3	Any		69.9				
DWK	1	230	1000	T20	P28s	25000	3100	50	BD	55.6	146.1				
DWT	3	120	1000	T6	R7s	21500		2000	Any		144.1				See ANSI C78.260
DWY	3	120	650	T4	R7s	20000	3400	25	Any		80.6				See ANSI C78.260
DWZ	3	30	375	T4	R7s	7000	2900	1000	Any		80.6				See ANSI C78.260

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
DXB	1	120	500	R40	E26/24		3400	6	Any		168.3				
DXC	1	120	500	R40	E26/24		3400	6	Any		168.3				
DXH	1	120	375	R40	E26/24		3200	15	Any		165.1				
DXK	5	120	650	PAR36	Special J		3400	30	Horiz		69.9				
DXM	3	30	250	T3.25	R7s	8400	3400	12	Any		59.6				See ANSI C78.260
DXN	3	120	1000	T5	R7s	33000	3400	30	Any		95.3				See ANSI C78.260
DXR	1	120	1000	PS35	E39	32500	3400	10	Any	177.8	238.1				
DXV	3	230	800	T4	R7s	22000	3400	15	Any		80.6				See ANSI C78.260
DXW	3	120	1000	T5	R7s	28000	3200	150	Any		95.3				See ANSI C78.260
DXX	3	240	800	T4	R7s	20500	3200	75	Any		80.6				See ANSI C78.260
DYA	3	120	1000	T5	R7s	28000	3200	200	Any		111.1				See ANSI C78.260
DYB	3	118	800	T3	R7s	25000	3400	15	Any		127.3				
DYC	3	245	1000	T3	R7s	33000	3400	15	Any		127.3				
DYF	2	19.3	140	T3	G5.3	4000	3200	100	BDTH	27	50.8				
DYG	2	30	250	G6	GZ9.5	7000	3400	15	BDTH	36.5	60.3				See ANSI C78.1432
DYH	2	120	600	G7	G5.3	17000	3200	75	Any	36.5	63.5				
DYJ	2	230	650	G7	G5.3	20000	3400	20	BDTH	42.8	63.5				
DYN	3	120	1000	T6	R7s	24500	3400	150	Any		111.2				See ANSI C78.260
DYP	2	120	600	G7	Special H	17000	3200	75	BDTH		59.7				
DYR	2	220	650	G7	GZ9.5	16500	3200	50	Any	36.5	50.8				See ANSI C78.1432
DYS	2	120	600	G7	GZ9.5	17000	3200	75	Horiz	36.5	63.5				See ANSI C78.1432
DYT	2	19	80	T3.25	G5.3	2600	3350	25	BDTH	26.9	48.4				
DYY	2	120	500	G6	G17t	14000	3250	50	BD	39.7	76.2				
DZA	2	10.8	30	T3.5	G5.3	800	3100	400	BDTH	27	50.8				
DZB	2	12	100	T3	G5.3	2800	3300	50	BDTH	27	50.8				
DZD	2	120	1000	T6	G22	25500	3200	400	Any	101.6	165.1				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
DZE	2	24	150	T4	GZ9.5	4300	3250	100	BDTH	33.4	57.2				
DZG	2	120	500	T6	Special H		3200	100	BU	88.9	144.5				
DZJ	2	225	900	T7	GZ9.5	22000		75	BD	44.5	83.1				Proximity reflector
DZK	2	225	900	T7	GY9.5	24000		75	BDTH	44.5	89				
DZN	4	120	150	MR14	G7.9		3350	18	Horiz	15.9	50.8	78.4			
DZP	4	30	50	MR18	GX7.9			150	Horiz	15.9	50.8	72.1			
DZT	2	100	625	T6	GZ9.5			75	BDTH	44.5	88.9				Proximity reflector
DZV	2	220	650	T7	GZ9.5		3250	50	BDTH	44.5	88.9				Proximity reflector
DZX	3	225	1000	T3	R7s	20000		1000	Horiz		191.1				See ANSI C78.260
DZY	2	120	250	T4	G6.35	5000	3000	2000	Any	48	75				
DZZ	2	12	100	T3.5	GZ9.5	2700	3050	1000	BDTH	26.9	57.2				
EAD	1	120	60	T6.5	BA15d	750		100	Any	55.6	101.6				
EAH	1	220	500	R40	E26/24		3400	6	Any		168.3				
EAJ	1	12	35	T6.5	BA15d	650		50	Any	47.6	101.6				
EAK	1	120	100	T6.5	BA15d	2000		50	Any	63.5	101.6				
EAL	1	120	500	R40	E26/24		3200	15	Any		168.3				
EBA	1	120	10000	G96	G38	29500	3200	300	BD45	254	442.9				
EBB	1	120	1000	T24	G22	33500	3350	12	BD45	63.5	165.1				
EBP	1	120	1000	T12	E26/24	28000		25	BD	76.2	139.7				
EBR	1	120	375	R30	E26/24		3400	4	Any		139.7				
EBV	1	120	500	PS25	E26/24	17500	3400	7	Any		176.2				
EBW	1	120	500	PS25	E26/24	11000	4800	7	Any		176.2				
ECA	1	120	250	A23	E26/24	6500	3200	20	Any		154				
ECK	1	120	2000	G48	G38	65000	3350	25	BD45	127	238.1				
ECN	1	120	5000	G64	G38	14500	3200	150	BD45	165.1	301.6				
ECP	1	120	10000	G96	G38	33500	3350	75	BD45	254	442.9				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
ECT	1	120	500	PS25	E26/24	13650	3200	60	Any	63.5	176.2				
ECV	1	120	1000	PS40	E39	26500	3200	60	Any		247.7				
EDH	1	120	750	T24	G13	25000	3350	12	BD45	63.5	263.5				
EDL	1	120	2000	T48	G20			25	BD45	127	266.7				
EDN	1	120	5000	T64	G20	16150	3350	75	BD45	165.1	339.7				
EER	1	120	2000	T30	G38	58500	3200	750	BDTH	127	260.4				
EEX	2	120	300	T6	P28s	7200	3200	50	Any	55.6	146.1				
EFM	4	8	50	MR16	GZ6.35			50	BDTH		42	32			Opaque coating
EFN	4	12	75	MR16	GZ6.35			50	BDTH		42	32			
EFP	4	12	100	MR16	GZ6.35			50	BDTH		42	32			
EFR	4	15	150	MR16	GZ6.35			50	BDTH		42	32			
EFX	2	120	500	T5	G22	10000	3000	2000	Any	101.6	165.1				
EGC	2	120	500	T4	P28s	13000	3200	150	Any	88.9	152.4				See ANSI C78.1500
EGE	2	120	500	T5	P28s	10000	3000	2000	Any	88.9	152.4				See ANSI C78.1500
EGF	2	120	750	T5	P28s	20000	3200	250	Any	88.9	152.4				See ANSI C78.1500
EGG	2	120	750	T5	P28s	15000	3000	2000	Any	88.9	152.4				See ANSI C78.1500
EGH	2	120	500	T6	G17t	11900	3250	50	BDTH	39.7	88.9				
EGJ	2	120	1000	T6	P28s	25500	3200	400	Any	88.9	152.4				See ANSI C78.1500
EGK	2	120	1000	T6	P28s	24500	3200	400	Any	88.9	146				See ANSI C78.1500
EGM	2	120	1000	T6	P28s	21500	3000	2000	Any	88.9	152.4				See ANSI C78.1500
EGN	2	120	500	T6	G22	13000	3200	100	BDTH	63.5	140				See ANSI C78.1501
EGR	2	120	750	T7	G22	20000	3200	200	BDTH	63.5	140				See ANSI C78.1501
EGT	2	120	1000	T7	G22	27500	3200	200	BDTH	63.5	140				See ANSI C78.1501
EGX	2	120	500	T6	G17t			200	BDTH	44.5	92.1				Proximity reflector
EGY	2	225	1000	T7	GX6.35	31000	3400	15	Any		61				See ANSI C78.1403
EGZ	2	120	500	T6	GZ9.5		3200	100	BDTH	36.5	76.2				See ANSI C78.1460

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EHA	2	120	500	T6	GZ9.5		3250	50	BDTH	36.5	76.2				See ANSI C78.1460
EHC	2	120	500	T4	G9.5	13000	3200	300	Any	60.3	95.3				See ANSI C78.1503
EHD	2	120	500	T5	G9.5	10000	3000	2000	Any	60.3	101.6				See ANSI C78.1503
EHF	2	120	750	T5	G9.5	20400	3200	300	Any	60.3	101.6				See ANSI C78.1503
EHG	2	120	750	T5	G9.5	15000	3000	2000	Any	60.3	104.8				See ANSI C78.1503
EHJ	2	24	250	T4	G6.35	8000	3400	50	BDTH	33	55				See ANSI C78.1403
EHM	3	120	300	T3	R7s	6000	2950	2000	Horiz		119.9				See ANSI C78.260
EHP	3	120	300	T4	R7s	5000	3000	2500	Any		80.6				See ANSI C78.260
EHR	3	120	400	T4	R7s	7500	3000	2000	Any		80.6				See ANSI C78.260
EHT	2	120	250	T4	E11	5000	3000	2000	Any	41.5	80				See ANSI C78.260
EHV	2	120	325	T4	E11	7800	3100	500	Any	41.5	80				
EHZ	3	120	300	T3	R7s	5900	2900	2000	Horiz		119.9				See ANSI C78.260
EJA	4	21	150	MR16	GX5.3		3350	40	BDTH		44.5	27.9			
EJD	3	120	1000	T3	R7s										
EJG	3	120	750	T3	R7s	19800	3200	400	Horiz		119.9				See ANSI C78.260
EJL	4	24	200	MR16	GX5.3		3400	50	BDTH		44.5	31.8			See ANSI C78.1433
EJM	4	21	150	MR16	GX5.3		3350	40	BDTH		44.5	38.1			
EJN	4	21	150	MR16	GX5.3		3400	40	BDTH		44.5	50.8			
EJV	4	21	150	MR16	GX5.3		3350	40	BDTH		44.5	44.5			
EJY	4	19	80	MR16	GX5.3		3400	25	BDTH		44.5	38.1			
EKB	2	120	420	G7	GZ9.5	11000	3200	75	Horiz	36.5	63.5				See ANSI C78.1432
EKD	2	120	650	G6	GZ9.5	20000	3400	25	Horiz	36.5	66				See ANSI C78.1432
EKE	4	21	150	MR16	GX5.3		3250	200	BDTH		44.5	44.5			
EKG	4	19	80	MR16	GX5.3		3400	25	BDTH		44.5	44.5			
EKJ	3	225	1000	T3	R7s	26000	3200	150	Horiz		127.3				
EKL	2	21	150	T3	GZ9.5	4650	3350	40	BDTH	27	54				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EKM	3	220-230	1000		T3	R7s	28000	3200	300	Any		189.1				
EKN	4	17.7	120		MR16	GX5.3		3200	120	BDTH		44.5	38.1			
EKP	4	30	80		MR16	GX5.3		3350	25	BDTH		44.5	44.5			
EKT	2	10.5	150		T4	Special	4000	3400	30	Any	31.8	57.2				
EKX	4	24	200		MR16	GX5.3		3400	50	BDTH		44.5	140			
EKZ	4	10.8	30		MR16	GX5.3		3100	200	BDTH		44.5	38.1			
ELA	2	19	65		T3	G5.3	1900	3350	25	BDTH	27	50.8				
ELB	4	30	80		MR16	GX5.3		3400	18	BDTH		44.5	29			See ANSI C78.1433
ELC	4	24	250		MR16	GX5.3		3400	50	BDTH		44.5	31.8			See ANSI C78.1433
ELD	4	21	150		MR16	GX5.3		3350	40	BDTH		44.5	165			
ELE	4	30	80		MR14	GX7.9		3400	20	Horiz	15.9	50.8	78.4			
ELH	4	120	300		MR16	GY5.3		3350	35	BDTH		44.5	152			See ANSI C78.1431
ELJ	3	120	1050		T5	R7s	30000	3200	75	Any		119.9				See ANSI C78.260
ELN	3	225	1250		T3	R7s	38750	3200	200	Any		127.1				
ELP	3	225	600		T4	R7s	17000	3200	60	Any		80.3				See ANSI C78.260
ELR	4	16	50		MR14	GX7.9			250	Horiz	15.9	40.6	205			
ELS	4	16	50		MR14	GX7.9		3100	650	Horiz	15.9	40.6	205			
ELV	4	21.5	150		MR18	GX7.9		3300	100	Horiz	15.9	50.8	69			
ELW	3	225	1000		T5	R7s	32000	3400	15	Any		95.4				See ANSI C78.260
ELZ	4	21	150		MR18	GX7.9		3450	60	Horiz	15.9	47.5	69			
EMC	4	12	100		MR16	GX5.3		3100	200	BDTH		44.5	142			
EMD	3	120	750		T3	R7s	19500	3200	400	Horiz		119.9				See ANSI C78.260
EME	3	240	800		T3	R7s	22000	3200	250	Horiz		119.9				See ANSI C78.260
EMF	3	240	800		T3	R7s	21400	3200	250	Horiz		119.9				See ANSI C78.260
EMG	2	220	500		T6	GZ9.5		3100	75	BDTH	36.5	76.2				See ANSI C78.1460

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EMH	2	17.5	75	T3.25	G5.3	1750	3150	300	Any	26.9	44.5				
EML	2	24	175	T4	G5.3	5000	3200	125	BDTH	27	57.2				See ANSI C78.1435
EMM	4	24	250	MR14	GX7.9		3400	50	Horiz	15.9	47.4	66			See ANSI C78.1434
ENB	4	21.5	150	MR16	GX5.3		3300	100	Any		44.5	44.5			
ENG	4	120	300	MR16	GY5.3		3450	15	BDTH		44.5	152			See ANSI C78.1431
ENH	4	120	250	MR16	GY5.3		3250	175	BDTH		44.5	152			See ANSI C78.1431
ENL	4	12	50	MR16	GX5.3		3050	3000	BDTH		44.5	38.1			
ENT	2	12	100	T3	GY6.35	2500		1000	Any	30	44				
ENV	4	21	80	MR14	GX7.9			20	Horiz	15.9	51.4	78.4			
ENW	4	19	80	MR16	GX5.3		3200	200	BDTH		44.5	44.5			
ENX	4	82	360	MR16	GY5.3		3300	75	BDTH		44.5	299			
ENZ	4	30	50	MR16	GX5.3		3400	25	BDTH		44.5	29			
EPD	2	240	485	T6	GZ9.5		3200	50	BDTH	36.5	76.2				See ANSI C78.1460
EPF	4	30	80	MR14	GX7.9		3200	100	Horiz	15.9	50.8	78			
EPG	4	21	80	MR14	GX7.9		3300	100	Horiz	15.9	51.4	81.8			
EPK	4	30	80	MR16	GX5.3		3400	18	BDTH		44.5	44.5			
EPL	2	30	250	T3	G5.3	7500	3400	6	Any	24.5	50				
EPM	2	30	350	T4	G6.35	11000	3400	6	Any	32.5	55				
EPN	4	12	35	MR16	GX5.3		3300	50	BDTH		44.5	29			
EPR	2	120	500	T6	G17t		3250	50	BDTH	41.1	88.9				Proximity reflector
EPS	2	220	500	T6	G17t		3250	50	BDTH	41.1	88.9				Proximity reflector
EPT	4	10.8	42	MR16	GX5.3		2900	8000	BDTH		44.5	38.1			
EPV	4	14.5	90	MR16	GX5.3		3150	500	BDTH		44.5	155			See ANSI C78.1420
EPW	4	100	360	MR16	GY5.3		3300	75	BDTH		44.5	299			
EPX	4	14.5	90	MR16	GX5.3		3150	500	BDTH		44.5	165			See ANSI C78.1420
EPZ	4	13.8	50	MR16	GX5.3		3150	1000	BDTH		44.5	108			See ANSI C78.1420

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
ERA	2	6	12	T2.25	Wedge	225	3200	100	BDTH	10					
ERB	2	12	12	T2.25	Wedge	250	3100	200	BDTH	10					
ERC	2	14	25	T3.25	Wedge	500	3100	200	BDTH	12.7	30.5				
ERD	2	14	35	T3.25	Wedge	800	3150	200	BDTH	12.7	33.7				
ERE	2	21	45	T3.25	Wedge	1500	3400	15	BDTH	12.7	30.5				
ERF	2	14	50	T3.25	Wedge	1200	3200	200	BDTH	12.7	33.7				
ERJ	4	12.8	45	MR13.25	G3.9		3400	15	Horiz		50.8	89			Opaque coating
ERK	2	6	12	T2.25	Wedge	250	3100	200	BDTH	10					
ERL	2	12	12	T2.25	Wedge	300	3350	50	BDTH	10					
ERM	2	6	7	T2.25	Wedge	170	3350	50	BDTH	10					
ERN	2	6	10	T2.25	Wedge	210	3250	50	BDTH	10					
ERP	2	25	25	T3.25	BA15s	500	3100	100	BD	24	50				
ERR	4	14	25	MR18	G3.9		3100	200	Horiz		60	121			Opaque coating
ERS	2	4	5	T2.25	Wedge	55	2900	300	BDTH	10					
ERV	4	36	340	MR16	GY5.3		3300	75	BDTH		44.5	299			
ERW	4	12	18	MR18	G3.9		2900	650	Horiz		60				Opaque coating
ERX	4	18	160	MR14	GX7.9		3200	250	Horiz	15.9	47.4	185			
ERY	4	24	250	MR14	GX7.9		3400	35	Horiz	15.9	47.4	65.8			
ESA	2	6	10	T3	G3.9			100	Any	19.5	30				
ESB	2	6	20	T3	G3.9	420	3200	100		19.5	33				
ESC	4	24	200	MR16	GX5.3		3400	25	BDTH		44.5	35			
ESD	4	120	150	MR16	GY5.3			12	BDTH		44.5	44.5			
ESE	4	100	150	MR16	GY5.3			12	BDTH		44.5	44.5			
ESG	2	28	25	T3.25	Wedge	500	3100	200	BDTH	12.7	30.5				
ESH	4	82	85	MR16	GY5.3			250	BDTH		44.5	152			
ESJ	4	82	85	MR16	GY5.3			40	BDTH		44.5	29			

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
ESK	2	24	250	T4	G6.35	8500		50	BDTH	33	50				
ESL	2	120	150	T4	E11	2400	3000	1000	Any	34.9	69.9				See ANSI C78.260
ESM	2	120	250	T4	E11	4800	3000	2000	Any	41.5	80				See ANSI C78.260
ESN	2	120	100	T4	E11	1900	3000	1000	Any	34.9	69.9				See ANSI C78.260
ESP	2	120	150	T4	BA15d	2400	3000	1000	Any	34.9	61.9				See ANSI C78.260
ESR	2	120	100	T4	BA15d	1900	3000	1000	Any	34.9	61.9				See ANSI C78.260
ESS	2	120	250	T4	BA15d	5000	3000	2000	Any	41.3	80				See ANSI C78.260
EST	3	120	1000	T5	R7s	33000	3400	15	Any		95.4				See ANSI C78.260
ESX	4	12	20	MR16	GX5.3		3150	3000	BDTH		44.5	108			
ESY	2	100	150	T4	G6.35	3300	3075	200	BD		50				See ANSI C78.1403
ESZ	3	225	1000	T3	R7s	26000	3200	200	Horiz		191				See ANSI C78.260
ETB	2	120	250	T4	BA15d	4700	2950	2000	Any	41.3	80				See ANSI C78.260
ETC	2	120	150	T4	BA15d	2800	2900	2000	Any	38	68				See ANSI C78.260
ETD	2	120	100	T4	BA15d	1750	3000	1000	Any	34.9	61.9				See ANSI C78.260
ETE	2	120	100	T4	E11	1750	2900	1000	Any	34.9	70.1				See ANSI C78.260
ETF	2	120	150	T4	BA15d	2700	2900	2000	Any	38	68				See ANSI C78.260
ETG	2	120	150	T4	E11	2800	2900	2000	Any	38	76.2				See ANSI C78.260
ETH	2	120	150	T4	E11	2700	2900	2000	Any	38	76.2				See ANSI C78.260
ETJ	4	120	250	MR16	GY5.3			175	BDTH		44.5	36.5			
ETM	4	6	7	MR18	G3.9		3350	50	Any		60				Opaque coating
ETN	4	6	12	MR18	G3.9		3100	200	Any		60				Opaque coating
ETP	4	12	12	MR18	G3.9		3100	200	Any		60				Opaque coating
ETR	4	12.8	30	MR16	GX5.3		3100	500	Any		44.5	114			
ETT	3	120	1000	T5	R7s	33000	3400	70	Any		95.3				See ANSI C78.260
ETV	2	100	500	T6	G17t		3250	50	BDTH	41.1	88.9				Proximity reflector
ETW	4	13.8	35	MR16	GX5.3			1000	Horiz		44.5	198			

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
ETX	4	82	200		MR16	GY5.3			50	BDTH		44.5	152			
ETY	4	12	45		MR16	GY5.3		3050	400	Horiz		44.5	29			Opaque coating
ETZ	2	6	12		T2.25	Wedge	300	3350	50	BDTH	10					
EVA	2	12	100		T3.5	GY6.35	2500	3200	1000	BDTH	30	44				See ANSI C78.1403
EVC	2	24	250		T5	G6.35	8400	3200	200	Any	33	57				
EVD	2	36	400		T6	G6.35	14500	3200	50	BDTH	36	60				See ANSI C78.1403
EVG	3	170	800		T4	R7s		3150	75	Any		79.4				See ANSI C78.260
EVR	2	120	500		T4	E11	10000	2900	2000	Any	50.8	95.3				See ANSI C78.260
EVS	2	120	300		T5	G6.35	8400	3270	50	BD	31.8	49				
EVV	2		110	6.6	T4	GZ9.5	17000		500	BDTH	39.1	63.5				
EWV	4	82	250		MR16	GY5.3			50	BDTH		44.5	299			
EVY	4	12	100		MR16	GZ6.35			1000	Horiz		44.5	32			
EVZ	4	100	250		MR16	GY5.3		3250	175	Horiz		44.5	36.5			
EWA	3	245	650		T4	R7s	20000	3400	6	Any		80.3				See ANSI C78.260
EWB	3	115	650		T4	R7s	19000	3400	6	Any		80.3				See ANSI C78.260
EWC	3	225	650		T4	R7s	19000	3400	6	Any		80.3				See ANSI C78.260
EWE	2	220	1000		T6	P28s	26500	3200	250	Any	88.9	145				See ANSI C78.1500
EFW	4	24	200		MR16	GX5.3			50	BDTH		44.5	299			
EWG	4	120	300		MR16	GY5.3			35	BDTH		44.5	32			
EWJ	4	12	28		MR16	GX5.3		3200	750	BDTH		44.5	141			
EWK	4	82	300		MR16	Special		3200	70	Any			152			
EWM	4	12	12		MR13	G21			200	Any		25.4	27.9			Opaque coating
EWP	3	90	420		T4	R7s	16000	3250	100	Any		81				See ANSI C78.260
EWR	2		150	6.6	T4	GZ9.5	3600	3100	500	BDTH	39.1	63.5				
EWS	3	225	650		T4	R7s	17000	3200	75							
EWT	4	12	28		MR11	G3.9		3000	1000	Any		44.5	107			Opaque coating

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EWV	4	82	300		MR13.25	GX5.3		3300	70	Horiz			152			
EWV	4	82	300		MR13.25	GX5.3		3300	35	Horiz		44.5	152			
EWX	2	24	250		T3	G6.35	8200	3400	50	BDTH	29	44				
EWY	4	12	80		MR16	GX5.3		3150	1000	Horiz			224			
EWZ	2	110	850		T2.5	GX6.35	23000	3300	75	Vert		65				
EXA	2	120	1000		BT11	P28s	24500	3050	750	Any	88.9	160				See ANSI C78.1500
EXB	2	120	750		BT11	P28s	17000	3000	750	BD	88.9	160				See ANSI C78.1500
EXC	5	220	1000		PAR64	GX16d		3200	300	Any		150				
EXD	5	220	1000		PAR64	GX16d		3200	300	Any		150				
EXE	5	220	1000		PAR64	GX16d		3200	300	Any		150				
EXF	2	120	500		T8	P28s	10500	2950	750	BD	88.9	160				See ANSI C78.1500
EXG	5	220	1000		PAR64	GX16d	30000	3200	300	Any		150				
EXK	4	12	50		MR16	GX5.3	960	3050	4000						2450	
EXL	2		30	6.6	T3.5	GZ9.5				BDTH	25.4	44.5				
EXM	2		45	6.6	T3.5	GZ9.5				BDTH	25.4	44.5				
EXN	4	12	50		MR16	GX5.3	1500	3050	3000	Any						
EXP	4	12	35		MR16	GX5.3	3300		50	Any		44.5				
EXR	4	82	300		MR13.25	GX5.3			35	BDTH		44.5	152			See ANSI C78.1430
EXS	4	30	200		MR16	G5.3	9400	3300	50	Any						
EXT	4	12	50		MR16	G5.3	9150	3050	3000	Any						
EXV	4	12	100		MR16	G5.3	3300	3350	50	Any						
EXW	4	82	300		MR13.25	GX5.3			15	BDTH		44.5	152			See ANSI C78.1430
EXX	4	120	250		MR16	GY5.3		3300	25	Any		44.5			6750	
EXY	4	82	250		MR13.25	GX5.3			200	BDTH		44.5	152			See ANSI C78.1430
EXZ	4	12	50		MR16	G5.3	3000	3075	3000	Any						
EYA	4	82	200		MR16	GY5.3		3300	50	BDTH						

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EYB	2	82	360		T3.5	G5.3		3300	75	Any						See ANSI C78.1435
EYC	4	12	71		MR16	G5.3	12000	3050	3500	Any						
EYD	2	12	85		T3.5	G5.3		3350	40	Any						
EYF	4	12	71		MR16	GX5.3	11000	3050	3500	Any						
EYG	4	14	25		T3	GX5.3			500	BDTH						See ANSI C78.1420
EYH	2	120	250		G6	G5.3		3000	200	Any	37.5					
EYJ	4	12	71		MR16	GX5.3		3050	3500	Any						
EYK	4	120	300		MR16	G5.3		3300	60	BDTH						
EYL	2	12	100		T3.25	GZ9.5	2900	3300	50	BDTH	36.5	61.9				See ANSI C78.1432
EYM	2	245	1000		T2.5	GX6.35	28500	3300	75	BDTH		75				
EYN	2	245	650		T2.5	GX6.35	17500	3300	50	BDTH		65				
EYP	4	12	42		MR16	GX5.3		3000	2000	BUBH						
EYR	4	12	42		MR16	GX5.3		3000	2000	BUBH						
EYS	4	12	42		MR16	GX5.3		3000	2000	BUBH						
EYT	2	120	750		T4	E11	18500	3050	500	Any	50.8	95.3				
EYV	2	130	500		T4	E11	10000	3000	2000	Any	50.8	95.3				See ANSI C78.260
EYW	2	130	500		T4	E11	10000	3000	2000	Any	50.8	95.3				See ANSI C78.260
EYX	2	120	500		T4	E11	10000	3000	2000	Any	50.8	95.3				See ANSI C78.260
EZA	4		30	6.6	MR16	GX5.3		2900		BDTH						
EZB	5	120	250		PAR36	Special J		2952	100							
EZC	4		45	6.6	MR16	GX5.3		2950	1000	BDTH						
EZD	2	19	125		T4	G5.3	2650	3050	2000	BDTH	26	73				
EZE	4	82	50		MR13.25	GX5.3		3250	150	BDTH						
EZF	4	68	225		MR13.25	GX5.3			500	BDTH						
EZG	4	35	300		MR16	Special I		6000	75	Horiz				37		
EZH	4	12	20		MR16	GX5.3		3000	3000	BDTH						

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps		Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EZJ	4	68	225		MR13.25	GX5.3			500	BDTH						
EZK	4	120	150		MR16	GY5.3		3100	200	Any						
EZL	2		200	6.6	T4	GY9.5	5000	3100	500	BDTH	38.1	63.5				
EZM	4	37.5	300		MR24	Special I		5500	25	Horiz						52
EZP	4		50	6.6	MR16	GX5.3		2950	2000	BDTH						44.5
EZS	3	37.5	300		T3.5	Special I		5500	25	BDTH						
EZT	4	45	350		MR24	Special I		5500	50	Horiz						52
EZW	4	82	85		MR16	GY5.3		2900	1000	BDTH						
EZX	4	12	20		MR16	G5.3	8500	3150	3000	Any						
EZY	4	12	42		MR16	G5.3	12500	3050	3000	Any						
FAD	3	120	650		T4	R7s	16500	3200	100	Any		80.6				See ANSI C78.260
FAE	1	120	550		R40	E26/24		3400	10	Any		165.1				
FAL	3	120	420		T4	R7s	11000	3200	75	Any		66.7				See ANSI C78.260
FAV	2	11.5	100		T3.25	E10	2700	3400	6	Any	27.6	63.5				
FAY	5	120	650		PAR 36	Special J		5000	35	Horiz		61.9				
FBD	2	120	500		T4	G5.3	13200	3200	50	Any	44.5	76.2				
FBE	5	120	650		PAR36	Special G		5000	35	Horiz		65.1				
FBG	2	120	500		G6	G5.3	13200	3200	50	Any	44.5	76.2				
FBJ	5	120	650		PAR36	Special J		3400	30	Horiz		61.9				
FBO	5	120	650		PAR36	Special G		3400	30	Horiz		65.1				
FBT	2	30	150		T3.25	E10	4200	3400	6	Any	27.6	60.3				
FBV	2	30	250		T3.25	E10	7000	3400	6	Any	27.6	60.3				
FBW	2	30	350		T4	E10	9800	3400	6	Any	27.6	60.3				
FBX	3	120	650		T4	R7s	16500	3200	100	Any		80.6				See ANSI C78.260
FBY	3	120	1000		T5	R7s	25000	3200	150	Any		95.3				See ANSI C78.260
FBZ	3	120	1000		T5	R7s	31000	3400	30	Any		95.3				See ANSI C78.260

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FCA	3	120	625	T4	R7s	19000	3400	25	Any		80.6				See ANSI C78.260
FCB	3	120	600	T4	R7s	16500	3200	75	Any		95.3				See ANSI C78.260
FCK	3	20	170	T3	R7s	4250	3150	100	Horiz		60.3				See ANSI C78.260
FCL	3	120	500	T3	R7s	10000	3000	2600	Horiz		119.9				See ANSI C78.260
FCM	3	120	1000	T3	R7s	27000	3200	300	Horiz		119.9				See ANSI C78.260
FCP	2	120	375	T4	E11	10500	3400	10	Any	35.6	66.7				
FCR	2	12	100	T3.5	GY6.35	2900	3250	50	BDTH	30	44.5				See ANSI C78.1403
FCS	2	24	150	T4	G6.35	4500	3400	50	BDTH	30	50.8				See ANSI C78.1403
FCV	2	120	1000	T6	G9.5	25500	3200	300	Any	60.3	101.6				See ANSI C78.1503
FCW	5	120	650	PAR36	Special J		3200	100	Horiz		61.9				
FCX	5	120	650	PAR36	Special J		3200	100	Horiz		61.9				
FCZ	3	120	500	T3	R7s	9300	3000	2600	Horiz		119.9				See ANSI C78.260
FDA	3	120	400	T4	R7s	10400	3200	250	Any		80.6				See ANSI C78.260
FDB	3	120	1500	T4	R7s	40000	3200	400	Horiz		167.9				See ANSI C78.260
FDV	3	120	500	T3	R7s	13250	3200	400	Horiz		119.9				See ANSI C78.260
FDG	3	225	1000	T3	R7s	33000	3400	15	Any		127.1				
FDN	3	120	500	T3	R7s	12500	3200	400	Horiz		119.9				See ANSI C78.260
FDS	2	24	150	T4	GZ9.5	4450	3400	50	BD	33.4	57.2				
FDT	2	12	100	T3.25	GZ9.5	2900	3300	50	Any	27	57.2				
FDV	2	24	150	T4	G6.35	4300	3300	100	BDTH	30	50.8				See ANSI C78.1403
FDW	2	24	150	T4	G6.35	4450	3400	50	BDTH	30	50.8				See ANSI C78.1403
FDX	2	12	100	T3.25	GY6.35	2900	3300	50	Any	30	44.1				See ANSI C78.1403
FEA	3	240	600	T4	R7s	15600	3200	75	Horiz		95.3				See ANSI C78.260
FEB	3	225	600	T4	R7s	17000	3200	75	Horiz		95.3				See ANSI C78.260
FEL	2	120	1000	T6	G9.5	27000	3200	300	Any	60.3	101.6				See ANSI C78.1503
FEP	2	240	1000	T6	G9.5	2300	3200	150	Any	60.3	101.6				See ANSI C78.1503

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FER	3	120	1000	T6	R7s	27500	3200	500	Any		144.1				See ANSI C78.260
FEV	2	120	200	T4	BA15d	5500	3200	50	Any	34.9	61.9				
FEX	3	240	2000	T8	RX7s	42500	3200	300	Any		142.9				See ANSI C78.260
FEY	3	120	2000	T8	R7s	57000	3200	300	Any		142.9				See ANSI C78.260
FFJ	3	120	600	T4	R7s	16500	3200	75	Any		66.7				See ANSI C78.260
FFM	3	120	420	T4	R7s	11000	3200	75	Any		79.4				See ANSI C78.260
FFN	5	120	1000	PAR64	GX16d		3200	400	Any		152.4				
FFP	5	120	1000	PAR64	GX16d			400	Any						
FFR	5	120	1000	PAR64	GX16d		3200	400	Any		152.4				
FFS	5	120	1000	PAR64	GX16d		3200	400	Any		152.4				
FFT	3	120	1000	T3.25	R7s	27000	3200	300	Horiz		167.9				See ANSI C78.260
FFW	3	120	2000	T4	R7s	57000	3200	125	Horiz		169.3				See ANSI C78.260
FFX	2	230	500	T5	G5.3	12500	3250	50	Any	44.5	76.2				
FFZ	2	40	300	T4	Special	10000	3400	40	Any	30.4	50				
FGF	2	24	150	T3.25	G5.3	4450	3400	50	BD	27	54				
FGK	5	120	650	PAR36	Special G	35000	5000	35	Horiz		65.1				
FGM	5	120	1000	PAR64	GX16d		5200	200	Any		152.4				
FGN	5	120	1000	PAR64	GX16d		5200	200	Any		152.4				
FGP	5	120	1000	PAR64	GX16d		5200	200	Any		152.4				
FGS	5	120	250	PAR36	GX16d		3400	4	Horiz		61.9				
FGT	3	120	1500	T4	R7s	40000	3200	400	Horiz		167.9				See ANSI C78.260
FGV	3	120	1000	T3	R7s	25700	3200	400	Horiz		167.9				See ANSI C78.260
FGW	2	24	150	T4	GZ9.5	3900	3250	200	BD	33.4	57.2				
FGX	2	24	250	T4	G6.35	8400		300	BDTH	33	55				See AnSI C78.1403
FGY	3	20	120	T4	R7s	1900	2900	2500	Any	37.5	79.4				See ANSI C78.260
FGZ	2	24	150	T3	G6.35	5200		50	BDTH	32	50				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FHB	2	225	1000		Special	GX6.35	33000	3400	15	BDTH		65				
FHD	2	6	10		T2.5	G4	200	3200	100	Any	19.5	30				
FHF	2	225	500		Special	GX6.35	15000	3400	10	BDTH		55				
FHG	2	225	1250		Special	GX6.35	40000	3400	15	BDTH		80				
FHK	3	225	500		T3	R7s	15000	3400	6	Any		80.3				See ANSI C78.260
FHL	4	6	36		MR13.25	Special			200	BDTH		25.4	27.9			Opaque coating
FHM	3	120	1000		T3	R7s	26000	3200	300	Horiz		119.9				See ANSI C78.260
FHN	3	245	500		T3	R7s	15000	3400	6	Any		80.3				See ANSI C78.260
FHP	3	115	500		T3	R7s	15000	3400	6	Any		80.3				See ANSI C78.260
FHR	2	12	50		T3.5	G5.3	1400	3400	50	BDTH	29.4	50.8				
FHS	4	82	300		MR13.25	GX5.3			70	BDTH		44.5	152			See ANSI C78.1430
FHV	2	32	150		T4	G6.35	5000	3400	50	BDTH	30	50				See AnSI C78.1403
FHW	2	120	100		T4	BA15d	1750	3000	2000	Any	34.9	61.9				
FHX	4	13.8	25		MR16	GX5.3		3200	250	BDTH		44.5	108			See ANSI C78.1420
FHY	2	24	150		T4	G6.35	3500		1000	BDTH	30	50				
FHZ	4	6	6		MR13	G21			75	BDTH		25.4	27.9			Opaque coating
FJA	2	230	450		T6	G17t		3250	50	BDTH	41.1	88.9				Proximity reflector
FJB	2	120	450		T6	G17t		3250	50	BDTH	41.1	88.9				Proximity reflector
FJC	2	100	450		T6	G17t		3250	50	BDTH	41.1	88.9				Proximity reflector
FJD	4	12	19		MR16	GX5.3		2975	500	Horiz			141			
FJE	4	84	85		MR16	GY5.3		3100	500	BDTH		44.5	165			
FJF	4	84	55		MR16	GY5.3		3100	500	BDTH		44.5	108			
FJG	2	225	650		T2.5	GX6.35	21000	3400	15	BDTH		65				
FJH	4	14.5	90		MR16	GX5.3		3200	500	Horiz			173			
FJJ	4	13.8	50		MR16	GX5.3		3150	1000	Horiz			195			
FJK	4	13.8	50		MR16	GX5.3		3150	1000	Horiz			152			

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FJL	4	17.5	114	MR16	GX5.3		3200	500	Horiz			165			
FJM	4	21	80	MR16	GX5.3		3125	500	Horiz			208			
FJN	4	13.8	85	MR16	GX5.3		3150	1000	Horiz			224			
FJP	4	13.8	25	MR16	GX5.3		3200	250	Horiz			105			
FJR	4	13.8	50	MR16	GX5.3		3150	1000	Horiz			105			
FJS	4	6	12	MR13.25	Special		3540	200	Any		25.5	27			
FJT	4	12	12	MR13.25	Special H		3350	200	Any		25.5	27			
FJV	4	6	6	MR13.25	Special H		3280	200	Any		25.5	27			
FJW	4	6	7	MR13.25	Special H		3530	50	Any		25.5	27			
FJX	4	13.8	30	MR16	GX5.3			500	BDTH		44.5	108			See ANSI C78.1420
FJY	4	12	28	MR11	G3.9			1000	BDTH		42	108			
FJZ	4	13.8	30	MR11	GZ4			500	BDTH		40	165			
FKA	2	117	650	T24	P28s	13500	3000	750	BDTH	55.5	130				
FKB	2	230	650	T24	P28s	13500	3000	750	BDTH	55.5	130				See ANSI C78.1504
FKC	2	120	1000	BT34	P28s	23000	3050	750	BDTH	55.5	130				
FKD	2	230	1000	BT34	P28s	23000	3050	750	BDTH	55.5	130				See ANSI C78.1504
FKE	2	230	1000	BT34	P28s	23000	3050	750	Any	88.9	160				See ANSI C78.1500
FKF	2	230	500	T24	P28s	9500	2950	750	BDTH	55.5	130				See ANSI C78.1504
FKG	2	117	650	T8	G22	17000	3200	100	BDTH	63.5	140				See ANSI C78.1501
FKH	2	230	650	T24	G22	16800	3200	100	BDTH	63.5	140				See ANSI C78.1501
FKJ	2	230	1000	BT34	G22	26000	3200	200	BDTH	63.5	140				See ANSI C78.1501
FKK	2	230	2000	BT40	G38	54000	3200	400	BDTH	127	216				See ANSI C78.1505
FKL	2	117	650	T24	P28s	17000	3200	100	BDTH	55.5	130				
FKM	2	230	650	T24	P28s	16800	3200	100	BDTH	55.5	130				See ANSI C78.1504
FKN	2	230	1000	BT34	P28s	26000	3200	200	BDTH	55.5	130				See ANSI C78.1504
FKP	2	230	2000	BT40	G38	54000	3200	400	BDTH	127	210				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FKR	2	230	650	T6	G9.5	15000	3100	300	Any	60.5	101				See ANSI C78.1503
FKS	2	120	500	T6	G9.5	12500	3050	4000	VBD	60.5	101				
FKT	2	120	250	T6	G5.3	5400	3125	200	Any	36.5	62.9				
FKV	2	120	650	T6	G9.5	17000	3200	300	Any	60.3	101				See ANSI C78.1503
FKW	2	120	300	T6	GY9.5	7800	3200	200	BDBH	46.5	90				
FKX	2	240	500	T6	G5.3	11000	3150	50	Any	39.5	74.9				
FKY	4	6	9	MR11	G3.9			250	BDTH						50
FKZ	4	13.8	25	MR11	GZ4			250							165
FLA	4	12	50	MR16	GX5.3		3200	1000	Horiz						106
FLB	4	82	150	MR16	GX5.3		3300	40	BH						152
FLC	4	82	150	MR16	GX5.3		3200	100	BH						152
FLD	2	13.8	50	T3	G3.18		3240	50	Horiz	29.7					
FLE	4	82	360	MR16	GY5.3		3300	75	BDTH		44.5	210			
FLG	2	13.8	85	T3	2-pin		3175	1000	Horiz						
FLH	4	120	250	MR16	GY5.3		3250	50	BH						
FLJ	2	12	50	T2.5	G4		3450	50	Any						
FLK	2	115	575	T6	G9.5	16000	3200	300	Any	60.5	101				See ANSI C78.1503
FLL	4	120	250	MR16	GY5.3		3250	50	BH						
FLM	4	82	300	MR16	GX5.3		3300	50	BDTH						31.8
FLN	4	13.8	50	MR16	GX5.3			1000	BDTH						133
FLP	2	14.4	70	T3	E12		3300	40	Any		63.5				
FLR	4	14.4	75	MR16	GX5.3		3300	40	Any						Aluminum reflector
FLS	4	12	28	MR11	GZ4			1000							
FLT	4	13.8	25	MR11	GZ4			500							
FLW	2	24	300	T4	GY6.35-15	10200	3500	50	BDTH	30	55				See ANSI C78.1403
FLZ	4	18.7	125	MR16	GX5.3			200	BDTH						31.8

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FMA	4	28	230	MR16	GX5.3			500	BDTH			88.9			
FMB	2	60	100	T4	BA15d	1900	3000	1000	Any	34.9	61.9				
FMC	2	120	500	T6	P28s		3050	500	Any	88.9	155.5				
FMD	2	120	750	T7	P28s		3050	500	Any	88.9	155.5				
FME	2	120	1000	T7	P28s		3200	200	Any	88.9	155.5				
FMK	2	120	250	G17	GZ9.5	5500	3150	200	BDTH	36.5	63.5				
FML	4	13.8	50	MR16	GX5.3		3150	1000	BDTH						
FMR	2	120	600	T5	GZ9.5	12500	3000		45BU	50.8	88.9				
FMT	4	12	35	MR16	GX5.3		2950	2000	Any						Narrow flood
FMV	4	12	35	MR16	GX5.3		3050	2000	Any						Narrow flood
FMW	4	12	35	MR16	GX5.3		3050	2000	Any						
FNA	2	120	300	T5	GZ9.5	5800	3000	2000			88.9				
FNB	2	120	300	T5	GX6.35	8000	3250	75							See ANSI C78.1403
FNC	4	12	50	MR16	GX5.3			3000	Any				10		Yellow light beam
FND	4	12	50	MR16	GX5.3			3000	Any				10		Red light beam
FNE	4	12	50	MR16	GX5.3			3000	Any				10		Green light beam
FNF	4	12	50	MR16	GX5.3			3000	Any				10		Blue light beam
FNM	4	82	85	MR13.25	GX5.3		3300	40	BDTH		44.5		15		
FNN	2	12	50	T4	GY6.35	850	3000	2000	BDTH	30					
FNR	2	120	600	T5	GZ9.5	15500	3200	300			88.9				
FNS	2	120	300	T6	GX6.35	8500	3400	15	Any	27					See ANSI C78.1403
FNT	2	24	275	T4	G6.35-15	10000	3400	75	BDTH	33					See ANSI C78.1403
FNV	4	12	50	MR16	GX5.3		3050	4000	Any						
FNW	4	12	50	MR16	GX5.3		3050	3000	Any						
FPA	4	12	65	MR16	GX5.3		3050	3500	Any						
FPB	4	12	65	MR16	GX5.3		3050	3500	Any						

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FPC	4	12	65	MR16	GX5.3		3050	3500	Any						
FPD	4	12	75	MR16	GX5.3			2000	Any						Medium flood
FPE	4	12	75	MR16	GX5.3			2000	Any						Spot
FPF	4	12	50	MR16	GX5.3			2000	Any						
FPG	2	240	500	T6	GZ9.5		3200	75	BDTH	36.5	76.2				
FPP	2	120	450	T6	G5.3	11000	3100	50	Any	36.5	61				
FPY	2	120	1000	BT30	GX9.5		3200	120	BDTH	55	110				Proximity reflector
FPZ	2	120	750	BT30	GX9.5		3200	120	BDTH	55	110				Proximity reflector
FRA	4	12	35	MR16	GX5.3	3600		3000	Any						
FRB	4	12	35	MR16	GX5.3	9000		3000	Any						
FRE	2	120	650	T7	GY9.5	15500	3100	400	BDTH	46.5	90				
FRF	2	120	500	T7	GY9.5	11500	3050	300	BDTH	46.5	90				
FRG	2	120	500	T7	GY9.5	13000	3200	150	BDTH	46.5	90				
FRJ	2	240	500	T7	GY9.5	12500	3200	150	BDTH	46.5	90				
FRK	2	120	650	T7	GY9.5	16900	3200	200	BDTH	46.5	90				
FRL	2	220	650	T7	GY9.5	16250	3200	150	BDTH	46.5	90				
FRM	2	240	650	T7	GY9.5	16250	3200	150	BDTH	46.5	90				
FRN	2	120	2000	T8	G9.5	56000	3200	500	Any	77.5	125				
FSA	4	110-120	75	MR16	E17/20	6500	3000	2000	Any						
FSB	4	110-120	75	MR16	E17/20	3000	3000	2000	Any						
FSC	4	110-120	100	MR16	E17/20	9000	3000	2000	Any						
FSD	4	110-120	75	MR16	E17/20	1800	3000	2000	Any						

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FSE	4	110-120	100		MR16	E17/20	4000	3000	2000	Any						
FSF	4	110-120	100		MR16	E17/20	2500	3000	2000	Any						
FSG	2	120	1200		T7	P28s	28000	3250	100	Any	55	111.1				
FSH	2	120	125		T3	G5.3	2500	3200	200	Any	32	57				
FSK	2	240	300		T6	GY9.5	6800	3200	200	BDBH	46.5	90				
FSL	2	220	300		T6	GY9.5	6800	3200	200	BDBH	46.5	90				
FSS	4	12	20		MR11	B15d	5500		2000	Any						
FST	4	12	20		MR11	B15d	1700		2000	Any						
FSV	4	12	26		MR11	B15d	600		2000	Any						
FSX	2	240	400		T6	GZ9.5		3200	75	BDTH	36.5	76.2				See ANSI C78,1460
FSY	2	240	400		T6	GZ9.5		3200	75	BDTH	36.5	76.2				See ANSI C78,1460
FTA	4	12	12		MR11	GZ4	6400		1000	Any						
FTB	4	12	12		MR11	GZ4	5500		2000	Any						
FTC	4	12	20		MR11	GZ4	17600		2000	Any						
FTD	4	12	20		MR11	GZ4	600		2000	Any						
FTE	4	12	35		MR11	GZ4	9000		2000	Any						
FTF	4	12	35		MR11	GZ4	3000		2000	Any						
FTG	4	12	50		MR16	GX5.3		3500	50	Any						
FTH	4	12	35		MR11	GZ4		2950	2000	Any						
FTK	2	120	500		T6	GY9.5	13500	3200	200	BDTH	36.5	65.3				
FTL	2	240	2000		T9.5	GY16	54000	3200	400	BDBH	70	145				
FTM	2	220	2000		T9.5	GY16	54000	3200	400	BDBH	70	145				
FTN	2	120	2000		T9.5	GY16		3200	400	BDTH	70	145				
FTP	4	12	50		MR11	GZ4	800	2900	2000						2000	
FTR	4	12	50		MR11	GZ4	800	2900	2000						3700	

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FTY	4	12	50	MR16	GX5.3		3100	3000	Any						
FTZ	4	12	35	MR16	GX5.3		3100	3000	Any						
FVA	2	12	1000	T7	GX9.5		3200	200	BDBH	55	110				
FVB	2	240	1000	T7	GX9.5		3200	200	BDBH	55	110				
FVC	2	220	650	T7	GX9.5		3200	100	BDBH	55	110				
FVD	2	220	650	T7	GX9.5		3200	100	BHBH	55	110				
FVE	2	120	1000	T7	GX9.5		3200	200	BHBH	55	110				
FVF	2	120	650	T6	GX9.5		3200	200	BDTH	55	110				
FVL	2	120	200	T4	G5.3	5200	3200	200	BDTH	32	61				
FVM	2	120	105	T4	G5.3	2200	3200	250	BDTH	32	64				
FVN	2	40	150	T4	G6.35	3200		1000	Any	32	50				See ANSI C78.1403
FWF	3	120	350	T3	R7s		3200	400			119.9				See ANSI C78.260
FWG	2	120	2000	T9	E39	58000	3200	500	BUTH	178	222				
FWH	2	120	2000	T9	E39	58000	3200	500	BUTH	241	298.5				
FWJ	2	120	2000	T9	E39	56000	3200	500	BUTH	178	222				
FWM	3	120	650	T3	R7s	25200	3200	400	Any	61.9	119.1				
FWP	2	220	1000	T7	GX9.5	23000	3050	750	BDTH	55	100				
FWR	2	240	1000	T7	GX9.5	23000	3050	750	BDTH	55	100				
FWS	2	220	1200	T7	GX9.5	28000	3050	400	BDTH	67	112				
FWT	2	240	1200	T7	GX9.5	28000	3050	400	BDTH	67	112				
FXA	2	24	50	T4	G6.35	800	3075	1000	Any	27					
FXH	4	12	50	MR16	GU5.3		3200	3000	Any		54		38	1800	
FXJ	4	12	50	MR16	GU5.3		3200	3000	Any		54		21	3700	
FXK	4	12	50	MR16	GU5.3		3200	3000	Any		54		12	9500	
FXL	4	82	410	MR16	GY5.3		3300	38	BDTH		44.5				
GAA	2	120	150	T4	BA15d	2200	3000	1000	Any	34.9	61.9				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
GAB	2	230	1000		BT10	GY9.5	25000	3200	250	BDTH	46.5	95				
GAC	2	120	1000		BT10	GY9.5	27000	3200	250	BDTH	30.5	95				
GAD	2	240	1000		BT10	GY9.5	25000	3200	250	BDTH	46.5	95				
GAE	2	120	2000		BT12	G22	55000	3200	500	BDTH	63.5	145				
GAF	2	230	2000		BT12	G22	52000	3200	5000	BDTH	63.5	145				
GAG	2	240	2000		BT12	G22	52000	3200	500	BDTH	63.5	145				
GAH	2	120	5000		BT20	G22	140000	3200	525	BDTH	127	232				
GAK	2	230	5000		BT20	G22	132500	3200	550	BDTH	127	232				
GAM	2	240	5000		BT20	G22	132500	3200	550	BDTH	127	232				
GAN	2	120	5000		BT20	G38	140000	3200	525	BDTH	127	232				
GAP	2	230	5000		BT20	G38	132500	3200	550	BDTH	127	232				
GAR	2	240	5000		BT20	G38	132500	3200	550	BDTH	127	232				
GAS	2	120	1500		BT12	G22	55000	3200	500	BDTH	63.5	145				
GAX	4	12	35		MR11	GZ4		3050	3000	Any				36	1100	
GBA	4	6	15		MR11	B15d			1000	Any		35		6	5000	36mm aluminum reflector, narrow spot
GBB	4	6	15		MR18	B15d			1000	Any		56				56mm aluminum reflector, narrow spot
GBC	4	6	15		MR18	B15d			1000	Any		56				56mm aluminum reflector, spot
GBD	4	12	20		MR11	B15d			1000	Any		35				36mm aluminum reflector, spot
GBE	4	12	20		MR11	B15d			1000	Any		35				36mm aluminum reflector, medium flood

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
GBF	4	12	20		MR11	B15d			1000	Any		35				36mm aluminum reflector, flood
GBG	4	6	35		MR18	B15d			2000	Any		56				56mm aluminum reflector, narrow spot
GBH	4	6	35		MR18	B15d			1000	Any		56				56mm aluminum reflector, spot
GBJ	4	12	50		MR18	B15d			2000	Any		56				56mm aluminum reflector, spot
GBK	4	12	50		MR18	B15d			2000	Any		56				56mm aluminum reflector, medium flood
GBL	4	12	50		MR18	B15d			2000	Any		56				56mm aluminum reflector, spot
GBT	4	12	50		MR16	BA15d		3050	3000	Any				12-14	9200	
GBV	4	12	50		MR16	BA15d		3050	3000	Any				24-26	2800	
GBW	4	12	50		MR16	BA15d		3050	3000	Any				33-36	1400	
GCA	2	120	250		T3.5	G5.3	5100	3200	200	Any						
GCB	2	30	200		T3.5	G5.3	5300	3200	200	Any	32	57				
GCC	2	12	100		T3	G5.3	3100	3200	200	Any	32	57				
GCD	2	50	590		T6	GY9.5	21500	3400	50	BDTH	41.3	77.5				
GCH	2	220	500		T6	GY9.5	9500	3050	300	BDTH	46.5	90				
GCJ	2	240	500		T6	GY9.5	9500	3050	300	BDTH	46.5	90				
GCK	2	220	650		T7	GY9.5	13500	3050	400	BDTH	46.5	90				
GCL	2	240	650		T7	GY9.5	13500	3050	400	BDTH	46.5	90				
GCS	2	240	650		T7	GY9.5	15000	3000	400	BDTH	46.5	90				
GCT	2	220	650		T7	GY9.5	15000	3000	400	BDTH	46.5	90				

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
GCV	2	220	500	T7	GY9.5	11000	3000	400	BDTH	46.5	90				
GCW	2	240	500	T7	GY9.5	11000	3000	400	BDTH	46.5	90				
GCX	2	120	500	G7	GZ9.5	13200	3200	120	Any	36.5	63				
GCY	2	230	500	G7	GZ9.5	11500	3150	150	BDTH	36.5	63				
GDA	3	220	500	T4	R7s	11000		400	Horiz		133.2				See ANSI C78.260
GDB	4	6	15	MR16	BA15d		3375	50	Any		49.5				
GDC	4	12	25	MR16	BA15d		3500	50	Any		49.5				
GDK	4	12	12	MR11	GZ4		2925	2000	Any		35				
GDL	4	12	12	MR11	GZ4		2925	2000	Any				6	5000	
GDM	4	12	12	MR11	GZ4		2925	2000	Any				20	750	
GDN	4	12	12	MR11	GZ4		2925	2000	Any				30	500	
GDX	4	12	35	MR11	BA15d		3050	3000	Any				12	5250	
GDY	4	12	35	MR11	BA15d		3050	3000	Any				24	1670	
GDZ	4	12	35	MR11	BA15d		3050	3000	Any				35	1100	
GED	4	13.8	85	MR16	Special K			1000	BDTH			165			
GEN	4	12	35	MR16	BA15d		3050	3000	Any				12-14	7100	
GEP	4	12	35	MR16	BA15d		3050	3000	Any				24-26	2050	
GER	4	12	35	MR16	BA15d		3050	3000	Any				33-36	1000	
GES	4	12	20	MR16	BA15d		3050	2000	Any				33-36	450	
GET	4	12	20	MR16	BA15d		3050	2000	Any				24-26	900	
GEV	4	12	20	MR16	BA15d		3050	2000	Any				12-14	3100	
GFA	5	120	1200	PAR64	GX16d/32x			400			150		24Hx13V	150000	Opaque coating
GFB	5	120	1200	PAR64	GX16d/32x			400			150		10H x 8V	450000	Opaque coating
GFC	5	120	1200	PAR64	GX16d/32x			400			150		10H x 8V	540000	Opaque coating
GFD	5	120	1200	PAR64	GX16d/32x			400			150			20000	Opaque coating
GFE	5	120	1200	PAR64	GX16d/32x			400			150			450000	Opaque coating

Table 4 – ANSI assigned photo lamp codes – All Lamps(continued)

ANSI ASSIGNED PHOTO LAMP CODES

Code	Class Volts		Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
GFF	5	120	1000		PAR64	GX16d/32x			400			150		68Hx67V	16000	Opaque coating
GHZ	4	13.8	25		MR11	GZ4			250				165			
GJT	4	13.8	50		MR16	Special K			1000	BDTH			108			
GKT	2	82	410		T3.5	G5.3	13500	3400	38		31.8	57.5				Special G5.3 base
GKU	4	82	410		MR16	GY5.3		3300	38			44.5				
GKV	2	230	600		T6	G9.5	14000	3200	250		60.5	101				
GKW	5	120	800		PAR64	GX16d		3200	350	Any		152		9Hx9V	340000	
GKX	5	120	800		PAR64	GX16d		3200	350	Any		152		27Hx27V	95000	
GKY	5	120	800		PAR64	GX16d		3200	350	Any		152		40Hx40V	40000	
GKZ	5	120	800		PAR64	GX16d		3200	350	Any		152		7Hx7V	500000	
GLA	2	115	575		T7	G9.5	13500	3100	1500		60.5	101				
GLB	2	240	600		T7	G9.5	13000	3100	1500		60.5	101				
GLC	2	115	575		T7	G9.5	15500	3200	300		60.5	101				
GLD	2	115	750		T6	G9.5	19000	3200	300	Any	60.5	101				
GLE	2	115	750		T6	G9.5	17000	3000	1500	Any	60.5	101				

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
BSW	7	1.4		T5	P30s	15		50	Any	28.6	60.3		
BTD	7	1.4		T5	P30d	16		50	Any	28.6	60.3		
BGB	4	3		S8	P30d	30		50	Any	28.8	50.8		
BRD	4	3		T5	BA15s	30		50	Any	31.8	50.8		
BRK	4	3		T5	P30s	28		50	Any	28.6	60.3		
BRS	4	3		T5	P30s	30		50	Any	28.6	50.8		
DJV	4	3		T3	G4.5	30	2800	200	BDTH	20	45		
DJW	4	3		T3	G4.5	30	2800	200	BDTH	20	45		
BAK	4	3		T5	P30s	30		250	Any	28.6	50.8		
BRX	6	6		T5	P30d	70		100	Any	28.6	60.3		
BSB	6	6		T5	P30s	70		100	Any	28.6	60.5		
BSK	6	6		T5	P30s	70		100	Any	28.6	50.8		
BSS	6	6		T5	P30s	70		100	Any	28.6	60.3		
BVL	6	6		T5	P30s	85		400	Any	28.6	60.3		
BMS	120	8		S11	E26/24			1400	Any		57.2		
DJG	6	10		T2.5	BA15s	180		70	Any	19	36.5		
BAL	28	19		B6	BA15d			100	Any	26.4	42.1		
BTT	9	19.4		T5	BA15s	310		150	Any	28.6	54		
BKR	115	30		S11	E12/15	400	2775	50	Any	41.3	57.2		
BKV	115	30		S11	BA15s	400	2775	50	Any	34.9	60.3		
BLC	115	30		S11	BA15d	400	2775	50	Any	34.9	60.3		
BVB	120	30		T7	BA15s	465		25	BD	34.9	66.7		
BVR	120	30		T7	BA15d	465		25	BD	34.9	66.7		
BLK	120	30		S11	E12/15	400	2700	50	Any	41.3	57.2		
BVK	5	32.5		T8	P30s	365		50	BDTH	41.3	66.7		
BXB	8.5	34		T8	P30s	690		100	BDTH	41.3	79.4		

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
BXJ	8.5	34		T8	BA15s	690		100	BDTH	44.5	79.4		
DKN	6	35		T12	GX17q			500	BDTH	39.7	90.5		Opaque coating
EAJ	12	35		T6.5	BA15d	650		50	Any	47.6	101.6		
BWD	8.5	35.7		T8	P30d	700		150	BD	41.3	79.4		
BXM	9	36		T8	P30s			500	BD	37.3	79.4		
BYS	9	36		T8	P30s			500	BD	37.3	79.4		
CXL	8	50		T9.5	P30s			25	BD	47	96	33.5	Opaque coating
CXR	8	50		T8	P30s		3200	25	BD	47	96	33.5	Opaque coating
BXN	10	50		T8	P30s			100	BD	37.3	79.4		
BZW	120	50		T8	BA15s	850	2810	50	BD	34.9	79.4		
CAC	120	50		T8	BA15d	900	2810	50	BD	34.9	79.4		
CAJ	120	50		T8	BA15d	850	2850	50	BD	34.9	79.4		
CAS	120	50		T8	BA15s	775	2875	50	BD	34.9	79.4		
CAW	120	50		T8	BA15d	810	2900	50	BD	34.9	79.4		
CAX	120	50		T8	BA15d	775	2875	50	BD	34.9	79.4		
CHY	230	50		T8	BA15d	650	2560	50	BD	34.9	79.4		
BLR	115-125	50		S11	BA15s	780	2850	50	BDTH	34.9	60.3		
BLX	115-125	50		S11	BA15d	780	2850	50	BDTH	34.9	60.3		
EAD	120	60		T6.5	BA15d	750		100	Any	55.6	101.6		
BXA	10	75		T8	P30s			100	BD	37.3	79.4		
BXE	10	75		T8	BA15s			100	BD	44.5	79.4		
BXG	10	75		T8	BA15s			100	BD	40.5			
BYA	10	75		T8	P30s			100	BD	41.3	79.4		
BNF	120	75		S11	BA15d	1300	2900	25	BDTH	34.9	60.3		
CBJ	120	75		T8	BA15s	1250	2950	50	BD	34.9	79.4		
CBX	120	75		T8	BA15d	1250	2950	50	BD	34.9	79.4		

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
CCK	120	75		T8	P30d	1300	2925	50	BD	31.8	79.4		
DFE	30	80		T12	GX17q		3200	15	Horiz	39.7	81	57	Opaque coating
DGB	30	80		T12	GX17q		3200	15	BD	39.7	90.5	57	Opaque coating
DLD	30	80		T14	GX17q			15	BD	39.7	88.9	44.5	Dichroic coated reflector
BXT	12	100		T8	BA15s	2250	3050	25	BD	34.9	79.4		
BEY	20	100		G16.5	P30s	2700		50	BDTH	34.9	76.2		
BHD	20	100		S11	BA15s	2800		50	BDTH	34.9	60.3		
BDK	120	100		R14	BA15d		3400	4	Horiz		69.9		
BHH	120	100		S11	BA15d	2000	3200	15	BDTH	34.9	60.3		
BMY	120	100		S11	BA15s	1860	2950	50	BDTH	34.9	60.3		
CDD	120	100		T8	BA15s	2000	2975	50	BD	34.9	79.4		
CDJ	120	100		T8	BA15d	2000	2975	50	BD	34.9	79.4		
CDS	120	100		T8	BA15s	1800	2900	50	BD	34.9	79.4		
CEB	120	100		T8	BA15d	1850	2975	50	BD	34.9	79.4		
EAK	120	100		T6.5	BA15d	2000		50	Any	63.5	101.6		
CDK	120	100		T8	BA15d	2000	2975	75	BD	34.9	79.4		
CJX	230	100		T8	BA15d	1650	2850	50	BD	34.9	79.4		
BMD	115-125	100		S11	BA15d	2000	3000	25	BDTH	34.9	60.3		
BMG	115-125	100		S11	BA15d	2000	3000	25	BDTH	34.9	60.3		
CPR	6	108		T10	P28s	2250	3075	50	BD	55.6	146.1		
CEL	120	120		T8	BA15d	1950	3000	200	BD	34.9	79.4		
CEM	120	120		T8	BA15s	1950	3000	200	BD	34.9	79.4		
BDD	20	150		T8	BA15s			50	BD	40.5	92.1		
BEV	20	150		G16.5	P30s	4000	3300	50	BU	52.4	76.2		
DCA	21	150		T12	GX17q		3250	15	BDTH	39.7	90.5	44.5	Opaque coating
DCF	21	150		T12	GX17q		3250	15	BDTH	39.7	90.5	57	Dichroic coated reflector

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
DEF	21	150		T12	GX17q		3250	15	BDTH	39.7	90.5	44.5	Dichroic coated reflector
DKR	21.5	150		T14	GX17q		3250	10	BD	39.7	90.5	39.6	Dichroic coated reflector
DLG	21.5	150		T14	GX17q			10	BDTH	39.7	90.5	44.5	Opaque coating
DLS	21.5	150		T14	GX17q			10	Horiz	39.7	90.5	44.5	Dichroic coated reflector
DDA	24	150		T12	GX17q		3300	18	Horiz	33.4	74.1		Opaque coating
DCW	24	150		T12	GX17q		3050	50	Horiz	33.4	81		
BMA	115	150		S11	Special D DSPECIAL D		3100	10	Horiz	28.2	65.1		
BEH	120	150		T10	G17q	3500	3100	15	BDTH	33.4	79.4		
CAR	120	150		T10	G17q		3100	15	BD	33.4	79.4		Proximity reflector
DCL	120	150		T12	G17q		3150	15	BD	39.7	90.5	57	Dichroic coated reflector
DFA	120	150		T12	G17q		3150	15	BD	39.7	90.5	44.5	Opaque coating
DFG	120	150		T12	G17q		3150	15	BD	39.7	90.5	44.5	Opaque coating
DFN	120	150		T12	G17q		3150	15	Horiz	39.7	81	57	Opaque coating
DJA	120	150		T12	G17q			15	BD	39.7	90.5	57	Opaque coating
DJL	120	150		T14	G17q		3150	15	BH	39.7	88.9	44.5	Opaque coating
BEC	120	150		B12	BA15d	3500	3075	25	BD	34.9	66.7		
CEW	120	150		T8	BA15s	3500	3100	25	BD	34.9	92.1		
CGP	120	150		T8	BA15d	3500	3075	25	BD	34.9	92.1		
CGE	120	150		T8	BA15s	2500	3000	200	BD	34.9	92.1		
CHK	120	150		T8	BA15s	2995	2850	500	BD	34.9	92.1		
CSH	120	150		T10	G17q			500		33.4	101.6		
CTL	120	150		T10	P28s	2600	3000	500	BD	55.6	146.1		
DCY	120	150		T12	GX17q		3000	500	Horiz	44.5	92.1		Proximity reflector
DFF	120	150		T12	G17q		2850	500	BD	39.7	77		Proximity reflector
DWC	120	150		R40	E26/24		2800	2000	Any		165.1		

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
DCH	120	150		T12	G17q			3150	BD	39.7	90.5	57	Opaque coating
DSW	24	200		T14	GX17q		3200	25	BDTH	39.7	87.3	44.5	Dichroic coated reflector
DAN	118	200		R20	E26/24		3400	4	Any		101.6		
BDJ	120	200		B12	BA15d		3200	20	BD	34.9	66.7		
BEJ	120	200		B12	BA15d	4600	3100	25	BD	34.9	66.7		
CCM	120	200		T8	BA15d	4500	3100	25	BD	34.9	92.1		
CGW	120	200		T8	BA15s	4200	3075	25	BD	34.9	92.1		
CHG	120	200		T8	P30d	4600	3075	25	BD	34.9	92.1		
CVS	120	200		T10	P28s	4250	3025	50	BD	55.6	146.1		
DLR	21.5	250		T14	GX17q		3300	10	BD	39.7	100	52.4	Dichroic coated reflector
DKM	21.5	250		T14	GX17q		3300	25	BD	39.7	100	52.4	Dichroic coated reflector
DKP	21.5	250		T14	GX17q			25	BD	39.7	100	67.3	Dichroic coated reflector
BBA	115	250		A21	E26/24	8700	3400	3	Any	85.7	125.4		
BCA	115	250		A21	E26/24	5400	4800	3.5	Any	85.7	125.4		
DHJ	120	250		T12	G17q		3250	10	BD	39.7	117.5	35	Opaque coating
DLH	120	250		T14	G17q		3200	15	Horiz	39.7	88.9	44.5	Dichroic coated reflector
ECA	120	250		A23	E26/24	6500	3200	20	Any		154		
DLC	120	250		T14	P28s	5500	3050	50	BD	55.6	146.1		
DWD	100	300		R40	E26/24		2800	2000	Any		165.1		
BEP	115	300		R30	E26/24		3400	4	Any		133.4		
BAH	115	300		A21	E26/24	9300	3200	20	Any	96	133.4		
CAL	120	300		T10	G17q		3200	25	BD	39.7	101.6		Proximity reflector
CLS	120	300		T8.5	BA15s	7700	3200	25	BD	34.9	104.8		
CLX	120	300		T8.5	BA15d	7600	3200	25	BD	34.9	104.8		
CMV	120	300		T8.5	BA15s	7300	3100	25	BD	34.9	104.8		
CWD	120	300		T10	G17q	7500	3150	25	BD	39.7	101.6		

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
CXK	120	300		T10	P28s	7500	3200	25	BD	55.6	146.1		
CXY	120	300		T10	P28s	7300	3100	25	BD	55.6	146.1		
CYC	120	300		T10	BA15s	7600	3200	25	BD	34.9	81		
DGA	120	300		T10	G17q		3150	25	BDTH	44.5	101.6		
CRT	120	300		T10	G17q		2900	250	BD	39.7	101.6		Proximity reflector
DAF	120	300		T10	Special C		3100	300	BD	33.4	101.6		
CXH	230	300		T10	G17q			25	BD	39.7	101.6		
BFA	115	375		R40	E26/24		3400	4	Any		168.3		
EBR	120	375		R30	E26/24		3400	4	Any		139.7		
DXH	120	375		R40	E26/24		3200	15	Any		165.1		
DAT	120	400		T10	G17q		3200	25	BD	39.7	101.6		
DML	120	400		T14	G17q		3200	75	Horiz	41.3	92.1		Proximity reflector
CYK	120	400		T10	G17q		3100	200	BD	39.7	104		
DMJ	240	480		T14	G17q		3200	50	Horiz	41.3	92.1		Proximity reflector
DLT	30	500		T20	E26/24	1250		50	BD	76.2	139.7		
DLY	30	500		T20	P28s	1250		50	BD	55.6	146.1		
DXB	120	500		R40	E26/24		3400	6	Any		168.3		
DXC	120	500		R40	E26/24		3400	6	Any		168.3		
EBV	120	500		PS25	E26/24	17500	3400	7	Any		176.2		
EBW	120	500		PS25	E26/24	11000	4800	7	Any		176.2		
EAL	120	500		R40	E26/24		3200	15	Any		168.3		
CZA	120	500		T10	G17q		3300	25	BD	39.7	101.6		Proximity reflector
CZS	120	500		T10	E26/24	12500	3200	25	BD	76.2	139.7		
CZX	120	500		T10	P28s	12500	3200	25	BD	55.6	146.1		
DAK	120	500		T10	G17q	13400	3200	25	BD	39.7	101.6		
DAR	120	500		T10	Special D	12500	3200	25	BD	58.8	139.7		

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
DAS	120	500		T10	Special B	13000	3250	25	BU	88.9	149.2		
DEK	120	500		T12	G17q		3250	25	Horiz	44.5	92.7		Proximity reflector
DFR	120	500		T12	Special F			25	BDTH	44.5	98.5		Proximity reflector
DFW	120	500		T12	G17q		3200	25	BDTH	44.5	95.3		Proximity reflector
DGF	120	500		T12	G17q	12500	3200	25	BDTH	44.5	101.6		
DHN	120	500		T12	G17q		3200	25	BDTH	44.5	95.3		Proximity reflector
DAY	120	500		T10	G17q	13000	3200	30	BD	39.7	104		
DMS	120	500		T20	E26/24	13200	3200	50	BD	76.2	139.7		
DMX	120	500		T20	P28s	13200	3200	50	BD	55.6	146.1		
DVG	120	500		T20	G22	14500	3200	50	BD45	63.5	165.1		
ECT	120	500		PS25	E26/24	13650	3200	60	Any	63.5	176.2		
DMK	120	500		T14	G17q		3200	75	Horiz	41.3	92.1		Proximity reflector
DAH	120	500		T12	G17q		3200	200	BDTH	44.5	94		Proximity reflector
DNS	120	500		T12	P28s	11000	3100	200	BU	88.9	155.6		
DNW	120	500		T20	P28s	9500	3050	500	BDTH	55.5	146.1		
DEB	120	500		T12	P28s	9000	2850	800	BU	88.9	155.6		
EAH	220	500		R40	E26/24		3400	6	Any		168.3		
CZG	230	500		T10	G17q			25	BD	39.7	101.6		Proximity reflector
FAE	120	550		R40	E26/24		3400	10	Any		165.1		
BFL	115	750		T20	P28s	13500	3050	200	BD	55.6	146.1		
EDH	120	750		T24	G13	25000	3350	12	BD45	63.5	263.5		
CWA	120	750		T12	G17q		3250	25	BD	39.7	117.5		Proximity reflector
DCX	120	750		T12	E26/24	19500	3250	25	BD	76.2	139.7		
DDB	120	750		T12	P28s	20000	3250	25	BD	56	146.1		
DEC	120	750		T12	Special	20100	3275	25	BU	88.9	149.2		
DEJ	120	750		T12	Special E	20000	3250	25	BD	58.8	139.7		

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
DEP	120	750		T12	G17q	20000	3250	25	BD	39.7	117.5		
DLN	120	750		T12	G17q		3250	25	Horiz	44.5	95.3		
DPB	120	750		T20	E26/24	20500		25	BD	76.2	139.7		
DPJ	120	750		T20	P28s	19000	3250	25	BD	55.6	146.1		
DVH	120	750		T24	G13	22000	3200	50	BD45	63.5	165.1		
BFE	120	750		T20	P28s	17000	3000	200	BDTH	55.6	146.1		
BFK	120	750		T20	P28s	17000	3000	200	BDTH	55.6	146.1		
DDY	120	750		T12	P28s	17000	2950	200	BD	55.6	146.1		
DNT	120	750		T12	P28s	17000	3100	200	BU	88.9	155.6		
DGH	120	750		T12	P28s	15000	3050	500	BD	55.6	146.1		
DSA	120	750		T20	P28s	17000		500	BD	55.6	146.1		
DRG	118	1000		T20	E26/24	28500		25	BD	76.2	139.7		
DFD	120	1000		T12	P28s	31000	3350	10	BD	55.6	146.1		
DFK	120	1000		T12	Special E	30500	3375	10	BD	58.8	139.7		
DGS	120	1000		T12	Special B	33000	3375	10	BU	88.9	149.2		
DXR	120	1000		PS35	E39	32500	3400	10	Any	177.8	238.1		
EBB	120	1000		T24	G22	33500	3350	12	BD45	63.5	165.1		
CTT	120	1000		T12	G17q		3300	25	BD	39.7	117.5		Proximity reflector
DFT	120	1000		T12	P28s	28000	3300	25	BD	55.6	146.1		
DFY	120	1000		T12	Special E	28000	3250	25	BD	58.8	139.7		
DRB	120	1000		T20	P28s	32000	3350	25	BD	55.6	146.1		
DRS	120	1000		T20	P28s	29000	3300	25	BD	55.6	146.1		
DRW	120	1000		T20	E39	28500	3325	25	BD	120.7	230.2		
DSB	120	1000		T20	P40s	38500	3325	25	BD	87.3	241.3		
EBP	120	1000		T12	E26/24	28000		25	BD	76.2	139.7		
DPT	120	1000		T20	E39	28000	3200	50	BD	120.7	230.2		

Table 5 – ANSI assigned photo lamp codes – Incandescent Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Incandescent Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Comments
DPW	120	1000		T20	P40s	28000	3200	50	BD	87.3	241.3		
DRC	120	1000		T20	P28s	29000	3250	50	BD	55.6	146.1		
ECV	120	1000		PS40	E39	26500	3200	60	Any		247.7		
DNV	120	1000		T12	P28s	24000	3100	200	BU	88.9	149		
DWK	230	1000		T20	P28s	25000	3100	50	BD	55.6	146.1		
CYS	120	1200		T12	G17q		3300	10	BD	39.7	117.5		Proximity reflector
DHT	120	1200		T12	P28s	37000	3350	10	BD	55.6	146.1		
DTJ	120	1500		T20	P40s	42500	3225	25	BD	87.3	241.3		
DTS	120	1500		T20	G38	42500	3225	25	BD	101.6	241.3		
ECK	120	2000		G48	G38	65000	3350	25	BD45	127	238.1		
EDL	120	2000		T48	G20			25	BD45	127	266.7		
DVF	120	2000		G48	G38	61000	3200	100	BD45	127	238.1		
EER	120	2000		T30	G38	58500	3200	750	BDTH	127	260.4		
EDN	120	5000		T64	G20	16150	3350	75	BD45	165.1	339.7		
ECN	120	5000		G64	G38	14500	3200	150	BD45	165.1	301.6		
ECP	120	10000		G96	G38	33500	3350	75	BD45	254	442.9		
EBA	120	10000		G96	G38	29500	3200	300	BD45	254	442.9		

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
ERS	4	5		T2.25	Wedge	55	2900	300	BDTH	10		
ERM	6	7		T2.25	Wedge	170	3350	50	BDTH	10		
ERN	6	10		T2.25	Wedge	210	3250	50	BDTH	10		
FHD	6	10		T2.5	G3.9	200	3200	100	Any	19.5	30	
ESA	6	10		T3	G3.9			100	Any	19.5	30	
ETZ	6	12		T2.25	Wedge	300	3350	50	BDTH	10		
ERA	6	12		T2.25	Wedge	225	3200	100	BDTH	10		
ERK	6	12		T2.25	Wedge	250	3100	200	BDTH	10		
ERL	12	12		T2.25	Wedge	300	3350	50	BDTH	10		
ERB	12	12		T2.25	Wedge	250	3100	200	BDTH	10		
ESB	6	20		T3	G3.9	420	3200	100		19.5	33	
DPF	13.8	25		T3	GY3.2	500	3100	250	Horiz	27.3		
ERC	14	25		T3.25	Wedge	500	3100	200	BDTH	12.7	30.5	
ERP	25	25		T3.25	BA15s	500	3100	100	BD	24	50	
ESG	28	25		T3.25	Wedge	500	3100	200	BDTH	12.7	30.5	
EXL		30	6.6	T3.5	GZ9.5				BDTH	25.4	44.5	
DZA	10.8	30		T3.5	G5.3	800	3100	400	BDTH	27	50.8	
ERD	14	35		T3.25	Wedge	800	3150	200	BDTH	12.7	33.7	
EXM		45	6.6	T3.5	GZ9.5				BDTH	25.4	44.5	
ERE	21	45		T3.25	Wedge	1500	3400	15	BDTH	12.7	30.5	
BCD	12	50		T3.5	G6.35	1350		50	BDTH	30	44	
BRL	12	50		T3.5	G6.35	1400	3400	50	BDTH	30	44	See ANSI C78.1403
FHR	12	50		T3.5	G5.3	1400	3400	50	BDTH	29.4	50.8	
FLJ	12	50		T2.5	G3.9		3450	50	Any			
FNN	12	50			GY6.35	850	3000	2000	BDTH	30		
DPL	12	50		T3	Special	875	3125	2500	Any	31.5		
FLD	13.8	50		T3	G3.18		3240	50	Horiz	29.7		
DPG	13.8	50		T3	G3.18	1250	3250	1000	Horiz	27.7		

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
ERF	14	50		T3.25	Wedge	1200	3200	200	BDTH	12.7	33.7	
FXA	24	50		T4	G6.35	800	3075	1000	Any	27		
ELA	19	65		T3	G5.3	1900	3350	25	BDTH	27	50.8	
FLP	14.4	70		T3	E12		3300	40	Any		63.5	
DEE	12	75		T3	G6.35	2100		50	BDTH	28.4	44	
EMH	17.5	75		T3.25	G5.3	1750	3150	300	Any	26.9	44.5	
DDJ	10	80		T3	GY9.5	1400	3150	1000	Any	27	59.5	
DYT	19	80		T3.25	G5.3	2600	3350	25	BDTH	26.9	48.4	
DPE	21	80		T3	G3.18	1900	3240	1000	Horiz	28		
EYD	12	85		T3.5	G5.3		3350	40	Any			
DPH	13.8	85		T3	G3.18	2100	3250	1000	Horiz	28		
FLG	13.8	85		T3	2-pin		3175	1000	Horiz			
DPD	14.5	90		T3	G3.18	2500	3500	500	Horiz	28		
FAV	11.5	100		T3.25	E10	2700	3400	6	Any	27.6	63.5	
DZB	12	100		T3	G5.3	2800	3300	50	BDTH	27	50.8	
EYL	12	100		T3.25	GZ9.5	2900	3300	50	BDTH	36.5	61.9	See ANSI C78.1432
FCR	12	100		T3.5	GY6.35	2900	3250	50	BDTH	30	44.5	See ANSI C78.1403
FDT	12	100		T3.25	GZ9.5	2900	3300	50	Any	27	57.2	
FDX	12	100		T3.25	GY6.35	2900	3300	50	Any	30	44.1	See ANSI C78.1403
GCC	12	100		T3	G5.3	3100	3200	200	Any	32	57	
DZZ	12	100		T3.5	GZ9.5	2700	3050	1000	BDTH	26.9	57.2	
ENT	12	100		T3	GY6.35	2500		1000	Any	30	44	
EVA	12	100		T3.5	GY6.35	2500	3200	1000	BDTH	30	44	See ANSI C78.1403
FMB	60	100		T4	BA15d	1900	3000	1000	Any	34.9	61.9	
ESN	120	100		T4	E11	1900	3000	1000	Any	34.9	69.9	See ANSI C78.260
ESR	120	100		T4	BA15d	1900	3000	1000	Any	34.9	61.9	See ANSI C78.260
ETD	120	100		T4	BA15d	1750	3000	1000	Any	34.9	61.9	See ANSI C78.260
ETE	120	100		T4	E11	1750	2900	1000	Any	34.9	70.1	See ANSI C78.260

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life, hours	Burn Position	LCL mm	MOL mm	Comments
FHW	120	100		T4	BA15d	1750	3000	2000	Any	34.9	61.9	
FVM	120	105		T4	G5.3	2200	3200	250	BDTH	32	64	
EVV		110	6.6	T4	GZ9.5	17000		500	BDTH	39.1	63.5	
DJF	20	120		T3	G6.35	2700		500	BDTH	32	50	
EZD	19	125		T4	G5.3	2650	3050	2000	BDTH	26	73	
FSH	120	125		T3	G5.3	2500	3200	200	Any	32	57	
DDP	22	132		T4	GZ9.5	3600	3250	125	BDTH	33.4	57.2	
DYF	19.3	140		T3	G5.3	4000	3200	100	BDTH	27	50.8	
EKT	10.5	150		T4	Special	4000	3400	30	Any	31.8	57.2	
BRJ	15	150		T3	G6.35	5000	3400	50	BDTH	30	44	See ANSI C78.1403
EKL	21	150		T3	GZ9.5	4650	3350	40	BDTH	27	54	
EWR		150	6.6	T4	GZ9.5	3600	3100	500	BDTH	39.1	63.5	
FCS	24	150		T4	G6.35	4500	3400	50	BDTH	30	50.8	See ANSI C78.1403
FDS	24	150		T4	GZ9.5	4450	3400	50	BD	33.4	57.2	
FDW	24	150		T4	G6.35	4450	3400	50	BDTH	30	50.8	See ANSI C78.1403
FGF	24	150		T3.25	G5.3	4450	3400	50	BD	27	54	
FGZ	24	150		T3	G6.35	5200		50	BDTH	32	50	
DZE	24	150		T4	GZ9.5	4300	3250	100	BDTH	33.4	57.2	
FDV	24	150		T4	G6.35	4300	3300	100	BDTH	30	50.8	See ANSI C78.1403
FGW	24	150		T4	GZ9.5	3900	3250	200	BD	33.4	57.2	
FHY	24	150		T4	G6.35	3500		1000	BDTH	30	50	
FBT	30	150		T3.25	E10	4200	3400	6	Any	27.6	60.3	
FHV	32	150		T4	G6.35	5000	3400	50	BDTH	30	50	See ANSI C78.1403
FVN	40	150		T4	G6.35	3200		1000	Any	32	50	See ANSI C78.1403
ESY	100	150		T4	G6.35	3300	3075	200	BD		50	See ANSI C78.1403
ESL	120	150		T4	E11	2400	3000	1000	Any	34.9	69.9	See ANSI C78.260
ESP	120	150		T4	BA15d	2400	3000	1000	Any	34.9	61.9	See ANSI C78.260
GAA	120	150		T4	BA15d	2200	3000	1000	Any	34.9	61.9	

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
ETC	120	150		T4	BA15d	2800	2900	2000	Any	38	68	See ANSI C78.260
ETF	120	150		T4	BA15d	2700	2900	2000	Any	38	68	See ANSI C78.260
ETG	120	150		T4	E11	2800	2900	2000	Any	38	76.2	See ANSI C78.260
ETH	120	150		T4	E11	2700	2900	2000	Any	38	76.2	See ANSI C78.260
EML	24	175		T4	G5.3	5000	3200	125	BDTH	27	57.2	See ANSI C78.1435
GCB	30	200		T3.5	G5.3	5300	3200	200	Any	32	57	
EZL		200	6.6	T4	GY9.5	5000	3100	500	BDTH	38.1	63.5	
FEV	120	200		T4	BA15d	5500	3200	50	Any	34.9	61.9	
FVL	120	200		T4	G5.3	5200	3200	200	BDTH	32	61	
EHJ	24	250		T4	G6.35	8000	3400	50	BDTH	33	55	See ANSI C78.1403
ESK	24	250		T4	G6.35	8500		50	BDTH	33	50	
EWX	24	250		T3	G6.35	8200	3400	50	BDTH	29	44	
EVC	24	250		T5	G6.35	8400	3200	200	Any	33	57	
FGX	24	250		T4	G6.35	8400		300	BDTH	33	55	See ANSI C78.1403
DDZ	24	250		T4	G6.35			1500	BDTH		55	
EPL	30	250		T3	G5.3	7500	3400	6	Any	24.5	50	
FBV	30	250		T3.25	E10	7000	3400	6	Any	27.6	60.3	
DYG	30	250		G6	GZ9.5	7000	3400	15	BDTH	36.5	60.3	See ANSI C78.1432
EYH	120	250		G6	G5.3		3000	200	Any	37.5		
FKT	120	250		T6	G5.3	5400	3125	200	Any	36.5	62.86	
FMK	120	250		G17	GZ9.5	5500	3150	200	BDTH	36.5	63.5	See ANSI C78.1432
GCA	120	250		T3.5	G5.3	5100	3200	200	Any			
DZY	120	250		T4	G6.35	5000	3000	2000	Any	48	75	
EHT	120	250		T4	E11	5000	3000	2000	Any	41.5	80	See ANSI C78.260
ESM	120	250		T4	E11	4800	3000	2000	Any	41.5	80	See ANSI C78.260
ESS	120	250		T4	BA15d	5000	3000	2000	Any	41.3	80	See ANSI C78.260
ETB	120	250		T4	BA15d	4700	2950	2000	Any	41.3	80	See ANSI C78.260
FNT	24	275		T4	G6.35-15	10000	3400	75	BDTH	33		See ANSI C78.1403

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life, hours	Burn Position	LCL mm	MOL mm	Comments
BSF	25	280		T4	G6.35	9500	3400	15	Any	33	55	See ANSI C78.1403
FLW	24	300		T4	GY6.35-15	10200	3500	50	BDTH	30	55	See ANSI C78.1403
FFZ	40	300		T4	Special	10000	3400	40	Any	30.4	50	
FNS	120	300		T6	GX6.35	8500	3400	15	Any	27		See ANSI C78.1403
EEX	120	300		T6	P28s	7200	3200	50	Any	55.6	146.1	
EVS	120	300		T5	G6.35	8400	3270	50	BD	31.8	49	
FNB	120	300		T5	GX6.35	8000	3250	75				See ANSI C78.1403
FKW	120	300		T6	GY9.5	7800	3200	200	BDBH	46.5	90	
DRA	120	300		T5	G6.35	6900	3100	300	BDTH	33		See ANSI C78.1403
BCL	120	300		T6	G17t		2950	1000	BDTH	39.7	82.6	Proximity reflector
FNA	120	300		T5	GZ9.5	5800	3000	2000			88.9	
FSL	220	300		T6	GY9.5	6800	3200	200	BDBH	46.5	90	
FSK	240	300		T6	GY9.5	6800	3200	200	BDBH	46.5	90	
EHV	120	325		T4	E11	7800	3100	500	Any	41.5	80	
EPM	30	350		T4	G6.35	11000	3400	6	Any	32.5	55	
FBW	30	350		T4	E10	9800	3400	6	Any	27.6	60.3	
EYB	82	360		T3.5	G5.3		3300	75	Any			See ANSI C78.1435
FCP	120	375		T4	E11	10500	3400	10	Any	35.6	66.7	
EVD	36	400		T6	G6.35	14500	3200	50	BDTH	36	60	See ANSI C78.1403
FSX	240	400		T6	GZ9.5		3200	75	BDTH	36.5	76.2	See ANSI C78.1460
FSY	240	400		T6	GZ9.5		3200	75	BDTH	36.5	76.2	See ANSI C78.1460
GKT	82	410		T3.5	G5.3	13500	3400	38	BDTH	31.8	57.5	Special G5,3 base
EKB	120	420		G7	GZ9.5	11000	3200	75	Horiz	36.5	63.5	See ANSI C78.1432
BSJ	220	440		T5	G6.35	4700	3200	200	Any	40	71	
FJC	100	450		T6	G17t		3250	50	BDTH	41.1	88.9	Proximity reflector
FJB	120	450		T6	G17t		3250	50	BDTH	41.1	88.9	Proximity reflector
FPP	120	450		T6	G5.3	11000	3100	50	Any	36.5	61	
FJA	230	450		T6	G17t		3250	50	BDTH	41.1	88.9	Proximity reflector

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life, hours	Burn Position	LCL mm	MOL mm	Comments
EPD	240	485		T6	GZ9.5		3200	50	BDTH	36.5	76.2	See ANSI C78.1460
ETV	100	500		T6	G17t		3250	50	BDTH	41.1	88.9	Proximity reflector
BCK	120	500		T6	G17t		3200	50	BDTH	39.7	88.9	Proximity reflector
CBA	120	500		T6	G17q		3200	50	BDTH	44.5	92	See ANSI C78.1408
DYY	120	500		G6	G17t	14000	3250	50	BD	39.7	76.2	
EGH	120	500		T6	G17t	11900	3250	50	BDTH	39.7	88.9	
EHA	120	500		T6	GZ9.5		3250	50	BDTH	36.5	76.2	See ANSI C78.1460
EPR	120	500		T6	G17t		3250	50	BDTH	41.1	88.9	Proximity reflector
FBD	120	500		T4	G5.3	13200	3200	50	Any	44.5	76.2	
FBG	120	500		G6	G5.3	13200	3200	50	Any	44.5	76.2	
BTM	120	500		T6	P28s	13000	3200	100	BDTH	55.5	127	See ANSI C78.1504
DZG	120	500		T6	Special H		3200	100	BU	88.9	144.5	
EGN	120	500		T6	G22	13000	3200	100	BDTH	63.5	140	See ANSI C78.1501
EGZ	120	500		T6	GZ9.5		3200	100	BDTH	36.5	76.2	See ANSI C78.1460
GCX	120	500		G7	GZ9.5	13200	3200	120	Any	36.5	63	
EGC	120	500		T4	P28s	13000	3200	150	Any	88.9	152.4	See ANSI C78.1500
FRG	120	500		T7	GY9.5	13000	3200	150	BDTH	46.5	90	
EGX	120	500		T6	G17t			200	BDTH	44.5	92.1	Proximity reflector
FTK	120	500		T6	GY9.5	13500	3200	200	BDTH	36.5	65.3	
EHC	120	500		T4	G9.5	13000	3200	300	Any	60.3	95.3	See ANSI C78.1503
FRF	120	500		T7	GY9.5	11500	3050	300	BDTH	46.5	90	
BTL	120	500		T6	P28s	11000	3050	500	BDTH	55.6	127	See ANSI C78.1504
FMC	120	500		T6	P28s		3050	500	Any	88.9	155.5	
EXF	120	500		T8	P28s	10500	2950	750	BD	88.9	160	See ANSI C78.1500
EFX	120	500		T5	G22	10000	3000	2000	Any	101.6	165.1	
EGE	120	500		T5	P28s	10000	3000	2000	Any	88.9	152.4	See ANSI C78.1500
EHD	120	500		T5	G9.5	10000	3000	2000	Any	60.3	101.6	See ANSI C78.1503
EVR	120	500		T4	E11	10000	2900	2000	Any	50.8	95.3	See ANSI C78.260

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
EYX	120	500		T4	E11	10000	3000	2000	Any	50.8	95.3	See ANSI C78.260
FKS	120	500		T6	G9.5	12500	3050	4000	VBD	60.5	101	
EYV	130	500		T4	E11	10000	3000	2000	Any	50.8	95.3	See ANSI C78.260
EYW	130	500		T4	E11	10000	3000	2000	Any	50.8	95.3	See ANSI C78.260
EPS	220	500		T6	G17t		3250	50	BDTH	41.1	88.9	Proximity reflector
EMG	220	500		T6	GZ9.5		3100	75	BDTH	36.5	76.2	See ANSI C78.1460
GCH	220	500		T6	GY9.5	9500	3050	300	BDTH	46.5	90	
GCV	220	500		T7	GY9.5	11000	3000	400	BDTH	46.5	90	
BSE	225	500		T5	G6.35	15000	3400	10	Any	44	70	
FHF	225	500		Special	GX6.35	15000	3400	10	BDTH		55	
DJD	225	500		T5	G6.35	12500	3200	50	Any	44	75	
FFX	230	500		T5	G5.3	12500	3250	50	Any	44.5	76.2	
GCY	230	500		G7	GZ9.5	11500	3150	150	BDTH	36.5	63	
FKF	230	500		T24	P28s	9500	2950	750	BDTH	55.5	130	See ANSI C78.1504
FKX	240	500		T6	G5.3	11000	3150	50	Any	39.5	74.9	
FPG	240	500		T6	GZ9.5		3200	75	BDTH	36.5	76.2	
FRJ	240	500		T7	GY9.5	12500	3200	150	BDTH	46.5	90	
GCJ	240	500		T6	GY9.5	9500	3050	300	BDTH	46.5	90	
GCW	240	500		T7	GY9.5	11000	3000	400	BDTH	46.5	90	
FLK	115	575		T6	G9.5	16000	3200	300	Any	60.5	101	See ANSI C78.1503
GLC	115	575		T7	G9.5	15500	3200	300		60.5	101	
GLA	115	575		T7	G9.5	13500	3100	1500		60.5	101	
GCD	50	590		T6	GY9.5	21500	3400	50	BDTH	41.3	77.5	
BRT	80	600		T8	GZ9.5	13200	3100	200	BD	36.6	66	
BHC	120	600		T6	GZ9.5	17500	3200	75	Any	36.5	63.5	
DYH	120	600		G7	G5.3	17000	3200	75	Any	36.5	63.5	
DYP	120	600		G7	Special H	17000	3200	75	BDTH		59.7	
DYS	120	600		G7	GZ9.5	17000	3200	75	Horiz	36.5	63.5	See ANSI C78.1432

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
FNR	120	600		T5	GZ9.5	15500	3200	300			88.9	
FMR	120	600		T5	GZ9.5	12500	3000		45BU	50.8	88.9	
GKV	230	600		T6	G9.5	14000	3200	250	Any	60.5	101	
GLB	240	600		T7	G9.5	13000	3100	1500		60.5	101	
DZT	100	625		T6	GZ9.5			75	BDTH	44.5	88.9	Proximity reflector
BVE	120	625		T6	GZ9.5		3200	75	BDTH	44.5	88.9	
FKG	117	650		T8	G22	17000	3200	100	BDTH	63.5	140	See ANSI C78.1501
FKL	117	650		T24	P28s	17000	3200	100	BDTH	55.5	130	
FKA	117	650		T24	P28s	13500	3000	750	BDTH	55.5	130	
DVY	120	650		G6	G5.3	20000	3400	25	BDTH	36.5	63.5	
EKD	120	650		G6	GZ9.5	20000	3400	25	Horiz	36.5	66	See ANSI C78.1432
FRK	120	650		T7	GY9.5	16900	3200	200	BDTH	46.5	90	
FVF	120	650		T6	GX9.5		3200	200	BDTH	55	110	
FKV	120	650		T6	G9.5	17000	3200	300	Any	60.3	101	See ANSI C78.1503
FRE	120	650		T7	GY9.5	15500	3100	400	BDTH	46.5	90	
DYR	220	650		G7	GZ9.5	16500	3200	50	Any	36.5	50.8	See ANSI C78.1432
DZV	220	650		T7	GZ9.5		3250	50	BDTH	44.5	88.9	Proximity reflector
FVC	220	650		T7	GX9.5		3200	100	BDBH	55	110	
FVD	220	650		T7	GX9.5		3200	100	BHBH	55	110	
FRL	220	650		T7	GY9.5	16250	3200	150	BDTH	46.5	90	
GCK	220	650		T7	GY9.5	13500	3050	400	BDTH	46.5	90	
GCT	220	650		T7	GY9.5	15000	3000	400	BDTH	46.5	90	
BVM	225	650		T7	GX6.35	20000		15	Any		57.5	See ANSI C78.1403
FJG	225	650		T2.5	GX6.35	21000	3400	15	BDTH		65	
DYJ	230	650		G7	G5.3	20000	3400	20	BDTH	42.8	63.5	
FKH	230	650		T24	G22	16800	3200	100	BDTH	63.5	140	See ANSI C78.1501
FKM	230	650		T24	P28s	16800	3200	100	BDTH	55.5	130	See ANSI C78.1504
FKR	230	650		T6	G9.5	15000	3100	300	Any	60.5	101	See ANSI C78.1503

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
FKB	230	650		T24	P28s	13500	3000	750	BDTH	55.5	130	See ANSI C78.1504
FRM	240	650		T7	GY9.5	16250	3200	150	BDTH	46.5	90	
GCL	240	650		T7	GY9.5	13500	3050	400	BDTH	46.5	90	
GCS	240	650		T7	GY9.5	15000	3000	400	BDTH	46.5	90	
EYN	245	650		T2.5	GX6.35	17500	3300	50	BDTH		65	
GLD	115	750		T6	G9.5	19000	3200	300	Any	60.5	101	
GLE	115	750		T6	G9.5	17000	3000	1500	Any	60.5	101	
BRP	120	750		T7	G17t		3250	50	BD	39.7	95.3	Proximity reflector
FPZ	120	750		BT30	GX9.5		3200	120	BDTH	55	110	Proximity reflector
BJK	120	750		BT10	P28s	18000		150	BDTH	55	127	
BKD	120	750		T7	G22	18000	3200	150	BDTH	63.5	140	
BTP	120	750		T7	P28s	20000	3200	200	BDTH	55.5	127	See ANSI C78.1504
BWM	120	750		T7	G9.5	20900	3200	200	BDTH	60.3	114.3	See ANSI C78.1503
EGR	120	750		T7	G22	20000	3200	200	BDTH	63.5	140	See ANSI C78.1501
BSC	120	750		T5	G22	20000	3200	250	Any	101.6	165.1	
EGF	120	750		T5	P28s	20000	3200	250	Any	88.9	152.4	See ANSI C78.1500
EHF	120	750		T5	G9.5	20400	3200	300	Any	60.3	101.6	See ANSI C78.1503
BTN	120	750		T7	P28s	17000	3050	500	BDTH	55.5	127	See ANSI C78.1504
EYT	120	750		T4	E11	18500	3050	500	Any	50.8	95.3	
FMD	120	750		T7	P28s		3050	500	Any	88.9	155.5	
EXB	120	750		BT11	P28s	17000	3000	750	BD	88.9	160	See ANSI C78.1500
BSD	120	750		T5	G22	15000	3000	2000	Any	101.6	165.1	
EGG	120	750		T5	P28s	15000	3000	2000	Any	88.9	152.4	See ANSI C78.1500
EHG	120	750		T5	G9.5	15000	3000	2000	Any	60.3	104.8	See ANSI C78.1503
EWZ	110	850		T2.5	GX6.35	23000	3300	75	Vert		65	
BVA	120	900		T7	GY9.5		3250	75	BDTH	44.5	88.9	Proximity reflector
DZJ	225	900		T7	GZ9.5	22000		75	BD	44.5	83.1	Proximity reflector
DZK	225	900		T7	GY9.5	24000		75	BDTH	44.5	89	

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
FVA	12	1000		T7	GX9.5		3200	200	BDBH	55	110	
BFD	120	1000		T12	P28s	31000	3350	10	BD	55.6	146.1	
BRR	120	1000		T7	G17t		3250	50	BD	39.7	95.3	Proximity reflector
BTA	120	1000		T7	GX9.5	25200	3250	50	BDTH	44.5	95.3	
BTC	120	1000		T7	Special B	25200	3250	50	BU	88.9	149.2	
FPY	120	1000		BT30	GX9.5		3200	120	BDTH	55	110	Proximity reflector
BKE	120	1000		T7	G22	25000	3200	175	BDTH	63.5	140	
BKK	120	1000		BT10	P28s	25000		175	BDTH	55.5	127	
BTR	120	1000		T7	P28s	27500	3200	200	BDTH	55.5	127	See ANSI C78.1504
BVV	120	1000		T7	P40s	27500	3200	200	Any	100	177.8	
CYV	120	1000		T7	G38	27500	3200	200	Any	127	196.9	See ANSI C78.1505
EGT	120	1000		T7	G22	27500	3200	200	BDTH	63.5	140	See ANSI C78.1501
FME	120	1000		T7	P28s		3200	200	Any	88.9	155.5	
FVE	120	1000		T7	GX9.5		3200	200	BHBH	55	110	
GAC	120	1000		BT10	GY9.5	27000	3200	250	BDTH	30.5	95	
BWN	120	1000		T7	G9.5	28500	3200	250	BDTH	60.3	114.3	See ANSI C78.1503
FCV	120	1000		T6	G9.5	25500	3200	300	Any	60.3	101.6	See ANSI C78.1503
FEL	120	1000		T6	G9.5	27000	3200	300	Any	60.3	101.6	See ANSI C78.1503
DZD	120	1000		T6	G22	25500	3200	400	Any	101.6	165.1	
EGJ	120	1000		T6	P28s	25500	3200	400	Any	88.9	152.4	See ANSI C78.1500
EGK	120	1000		T6	P28s	24500	3200	400	Any	88.9	146	See ANSI C78.1500
BVT	120	1000		T7	P40s	23000	3050	500	Any	100	177.8	
DSE	120	1000		T20	E39	23500	3050	500	BU	241.3	304.8	
DKZ	120	1000		PS52	E39	28000	3200	750	Any	241.3	330	
EXA	120	1000		BT11	P28s	24500	3050	750	Any	88.9	160	See ANSI C78.1500
FKC	120	1000		BT34	P28s	23000	3050	750	BDTH	55.5	130	
EGM	120	1000		T6	P28s	21500	3000	2000	Any	88.9	152.4	See ANSI C78.1500
EWE	220	1000		T6	P28s	26500	3200	250	Any	88.9	145	See ANSI C78.1500

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
FWP	220	1000		T7	GX9.5	23000	3050	750	BDTH	55	100	
BRW	225	1000		T7	Special A	30000	3400	10	Any	54	90	
EGY	225	1000		T7	GX6.35	31000	3400	15	Any		61	See ANSI C78.1403
FHB	225	1000		Special	GX6.35	33000	3400	15	BDTH		65	
DJE	225	1000		Special	GX6.35	26000	3200	75	BDTH		75	
FKJ	230	1000		BT34	G22	26000	3200	200	BDTH	63.5	140	See ANSI C78.1501
FKN	230	1000		BT34	P28s	26000	3200	200	BDTH	55.5	130	See ANSI C78.1504
GAB	230	1000		BT10	GY9.5	25000	3200	250	BDTH	46.5	95	
FKD	230	1000		BT34	P28s	23000	3050	750	BDTH	55.5	130	See ANSI C78.1504
FKE	230	1000		BT34	P28s	23000	3050	750	Any	88.9	160	See ANSI C78.1500
FEP	240	1000		T6	G9.5	2300	3200	150	Any	60.3	101.6	See ANSI C78.1503
FVB	240	1000		T7	GX9.5		3200	200	BDBH	55	110	
GAD	240	1000		BT10	GY9.5	25000	3200	250	BDTH	46.5	95	
FWR	240	1000		T7	GX9.5	23000	3050	750	BDTH	55	100	
DJC	245	1000		Special	GX6.35	33000	3400	15	BDTH		65	
EYM	245	1000		T2.5	GX6.35	28500	3300	75	BDTH		75	
BRN	120	1200		T7	G17t		3350	20	BD	39.7	95.3	Proximity reflector
BTG	120	1200		T7	G17t	38200	3350	20	BD	39.7	95.3	
FSG	120	1200		T7	P28s	28000	3250	100	Any	55	111.13	
FWS	220	1200		T7	GX9.5	28000	3050	400	BDTH	67	112	
FWT	240	1200		T7	GX9.5	28000	3050	400	BDTH	67	112	
FHG	225	1250		Special	GX6.35	40000	3400	15	BDTH		80	
DTA	120	1500		T8	P40s	39000	3200	100	Any	87.3	203.2	
DSF	120	1500		T20	E39	41000	3200	200	BDTH	241.3	304.8	
CWZ	120	1500		T8	P40s	38500	3200	325	Any	100	190.5	
CXZ	120	1500		T8	G38	38500	3200	325	BD	127	203.2	See ANSI C78.1505
GAS	120	1500		BT12	G22	55000	3200	500	BDTH	63.5	145	
DKX	120	1500		PS52	B9	41000	3200	1000	Any	241.3	330	

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light	Color	Life,	Burn	LCL	MOL	Comments
						lumens	Temp. K	hours	Position	mm	mm	
BVW	120	2000		T11	P40s	57500	3200	200	Any	100	203.2	
CYX	120	2000		T9.5	G38	59000	3200	250	BDTH	127	215.9	See ANSI C78.1505 Proximity reflector
CZM	120	2000		GT13	G38	55000	3200	250	BDTH	127		
BDM	120	2000		BT12	G22	55000	3200	400	BDTH	90	175	
FTN	120	2000		T9.5	GY16		3200	400	BDTH	70	145	
GAE	120	2000		BT12	G22	55000	3200	500	BDTH	63.5	145	
BWA	120	2000		T8	G38	54000	3200	500	BD	127	203.2	See ANSI C78.1505
BWF	120	2000		T8	E39	59000	3200	500	BD	133.4	190.5	
BWG	120	2000		T8	E39	57200	3200	500	BD	133.4	190.5	
BWL	120	2000		T8	E39	57200		500	BD	241.3	298.5	
FRN	120	2000		T8	G9.5	56500	3200	500	Any	77.5	125	
FWG	120	2000		T9	E39	58000	3200	500	BUTH	178	222	
FWH	120	2000		T9	E39	58000	3200	500	BUTH	241	298.5	
FWJ	120	2000		T9	E39	56000	3200	500	BUTH	178	222	
DCT	120	2000		T9.5	G38	47000		1000	Any	127	216	
FTM	220	2000		T9.5	GY16	54000	3200	400	BDBH	70	145	
GAF	230	2000		BT12	G22	52000	3200	250	BDTH	63.5	145	
FKK	230	2000		BT40	G38	54000	3200	400	BDTH	127	216	See ANSI C78.1505
FKP	230	2000		BT40	G38	54000	3200	400	BDTH	127	210	
FTL	240	2000		T9.5	GY16	54000	3200	400	BDBH	70	145	
GAG	240	2000		BT12	G22	52000	3200	500	BDTH	63.5	145	
BDL	120	2500		BT12	G22	70000	3200	400	BDTH	90	175	
DPY	120	5000		T17	G38	14000	3200	50	BD	165.1	279.4	
CHT	120	5000		GT19	G38	35000	3200	350	BDTH	165.1	279.4	
GAH	120	5000		BT20	G22	140000	3200	525	BDTH	127	232	
GAN	120	5000		BT20	G38	140000	3200	550	BDTH	127	237	
GAK	230	5000		BT20	G22	132500	3200	550	BDTH	127	232	
GAP	230	5000		BT20	G38	132500	3200	550	BDTH	127	237	

Table 6 – ANSI assigned photo lamp codes –Single Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Single Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life, hours	Burn Position	LCL mm	MOL mm	Comments
GAM	240	5000		BT20	G22	132500	3200	550	BDTH	127	232	
GAR	240	5000		BT20	G38	132500	3200	550	BDTH	127	237	
DTY	120	10000		T24	G38	28500	3200	300	BD	254	391	
BCM	220	20000		T32	G30	580000	3200	350	BD	354	560	

Table 7 – ANSI assigned photo lamp codes –Double Ended Tungsten Halogen Lamps

ANSI ASSIGNED PHOTO LAMP CODES - Double Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	MOL mm	LCL mm	Comments
FGY	20	120		T4	R7s	1900	2900	2500	Any	79.4	37.5	See ANSI C78.260
FCK	20	170		T3	R7s	4250	3150	100	Horiz	60.3		See ANSI C78.260
DDN	20	200		T3	R7s	5000	3150	100	Horiz	60.1		See ANSI C78.260
DXM	30	250		T3.25	R7s	8400	3400	12	Any	59.6		See ANSI C78.260
EZS	37.5	300		T3.5	Special I		5500	25	BDTH			
EHM	120	300		T3	R7s	6000	2950	2000	Horiz	119.9		See ANSI C78.260
EHZ	120	300		T3	R7s	5900	2900	2000	Horiz	119.9		See ANSI C78.260
EHP	120	300		T4	R7s	5000	3000	2500	Any	80.6		See ANSI C78.260
FWF	120	350		T3	R7s		3200	400		119.9		See ANSI C78.260
DWZ	30	375		T4	R7s	7000	2900	1000	Any	80.6		See ANSI C78.260
FDA	120	400		T4	R7s	10400	3200	250	Any	80.6		See ANSI C78.260
EHR	120	400		T4	R7s	7500	3000	2000	Any	80.6		See ANSI C78.260
EWP	90	420		T4	R7s	16000	3250	100	Any	81		See ANSI C78.260
FAL	120	420		T4	R7s	11000	3200	75	Any	66.7		See ANSI C78.260
FFM	120	420		T4	R7s	11000	3200	75	Any	79.4		See ANSI C78.260
FHP	115	500		T3	R7s	15000	3400	6	Any	80.3		See ANSI C78.260
FDF	120	500		T3	R7s	13250	3200	400	Horiz	119.9		See ANSI C78.260
FDN	120	500		T3	R7s	12500	3200	400	Horiz	119.9		See ANSI C78.260
DVS	120	500		T3	R7s			2000	Horiz	117.5		
FCL	120	500		T3	R7s	10000	3000	2600	Horiz	119.9		See ANSI C78.260
FCZ	120	500		T3	R7s	9300	3000	2600	Horiz	119.9		See ANSI C78.260
GDA	220	500		T4	R7s	11000		400	Horiz	133.2		See ANSI C78.260
FHK	225	500		T3	R7s	15000	3400	6	Any	80.3		See ANSI C78.260
BSH	225	500		T3	R7s	9500	2950	2000	Any	119.8		
FHN	245	500		T3	R7s	15000	3400	6	Any	80.3		See ANSI C78.260
FCB	120	600		T4	R7s	16500	3200	75	Any	95.3		See ANSI C78.260
FFJ	120	600		T4	R7s	16500	3200	75	Any	66.7		See ANSI C78.260
ELP	225	600		T4	R7s	17000	3200	60	Any	80.3		See ANSI C78.260

Table 7 – ANSI assigned photo lamp codes –Double Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Double Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	MOL mm	LCL mm	Comments
FEB	225	600		T4	R7s	17000	3200	75	Horiz	95.3		See ANSI C78.260
FEA	240	600		T4	R7s	15600	3200	75	Horiz	95.3		See ANSI C78.260
FCA	120	625		T4	R7s	19000	3400	25	Any	80.6		See ANSI C78.260
EWB	115	650		T4	R7s	19000	3400	6	Any	80.3		See ANSI C78.260
DWY	120	650		T4	R7s	20000	3400	25	Any	80.6		See ANSI C78.260
FAD	120	650		T4	R7s	16500	3200	100	Any	80.6		See ANSI C78.260
FBX	120	650		T4	R7s	16500	3200	100	Any	80.6		See ANSI C78.260
FWM	120	650		T3	R7s	25200	3200	400	Any	119.1	61.9	
EWC	225	650		T4	R7s	19000	3400	6	Any	80.3		See ANSI C78.260
EWS	225	650		T4	R7s	17000	3200	75				
EWA	245	650		T4	R7s	20000	3400	6	Any	80.3		See ANSI C78.260
EJG	120	750		T3	R7s	19800	3200	400	Horiz	119.9		See ANSI C78.260
EMD	120	750		T3	R7s	19500	3200	400	Horiz	119.9		See ANSI C78.260
DYB	118	800		T3	R7s	25000	3400	15	Any	127.3		
EVG	170	800		T4	R7s		3150	75	Any	79.4		See ANSI C78.260
DXV	230	800		T4	R7s	22000	3400	15	Any	80.6		See ANSI C78.260
DXX	240	800		T4	R7s	20500	3200	75	Any	80.6		See ANSI C78.260
EME	240	800		T3	R7s	22000	3200	250	Horiz	119.9		See ANSI C78.260
EMF	240	800		T3	R7s	21400	3200	250	Horiz	119.9		See ANSI C78.260
EST	120	1000		T5	R7s	33000	3400	15	Any	95.4		See ANSI C78.260
DXN	120	1000		T5	R7s	33000	3400	30	Any	95.3		See ANSI C78.260
FBZ	120	1000		T5	R7s	31000	3400	30	Any	95.3		See ANSI C78.260
ETT	120	1000		T5	R7s	33000	3400	70	Any	95.3		See ANSI C78.260
BRH	120	1000		T5	R7s	30000	3375	75	Any	95.3		See ANSI C78.260
DXW	120	1000		T5	R7s	28000	3200	150	Any	95.3		See ANSI C78.260
DYN	120	1000		T6	R7s	24500	3400	150	Any	111.2		See ANSI C78.260
FBY	120	1000		T5	R7s	25000	3200	150	Any	95.3		See ANSI C78.260
DYA	120	1000		T5	R7s	28000	3200	200	Any	111.1		See ANSI C78.260

Table 7 – ANSI assigned photo lamp codes –Double Ended Tungsten Halogen Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Double Ended Tungsten Halogen Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	MOL mm	LCL mm	Comments
FCM	120	1000		T3	R7s	27000	3200	300	Horiz	119.9		See ANSI C78.260
FFT	120	1000		T3.25	R7s	27000	3200	300	Horiz	167.9		See ANSI C78.260
FHM	120	1000		T3	R7s	26000	3200	300	Horiz	119.9		See ANSI C78.260
FGV	120	1000		T3	R7s	25700	3200	400	Horiz	167.9		See ANSI C78.260
FER	120	1000		T6	R7s	27500	3200	500	Any	144.1		See ANSI C78.260
DWT	120	1000		T6	R7s	21500		2000	Any	144.1		See ANSI C78.260
EJD	120	1000		T3	R7s							
EKM	220	1000		T3	R7s	28000	3200	300	Any	189.1		
ELW	225	1000		T5	R7s	32000	3400	15	Any	95.4		See ANSI C78.260
FDG	225	1000		T3	R7s	33000	3400	15	Any	127.1		
EKJ	225	1000		T3	R7s	26000	3200	150	Horiz	127.3		
ESZ	225	1000		T3	R7s	26000	3200	200	Horiz	191		See ANSI C78.260
DZX	225	1000		T3	R7s	20000		1000	Horiz	191.1		See ANSI C78.260
DYC	245	1000		T3	R7s	33000	3400	15	Any	127.3		
ELJ	120	1050		T5	R7s	30000	3200	75	Any	119.9		See ANSI C78.260
ELN	225	1250		T3	R7s	38750	3200	200	Any	127.1		
DVV	120	1500		T8	R7s	42700	3200	400	Any	142.9		See ANSI C78.260
FDB	120	1500		T4	R7s	40000	3200	400	Horiz	167.9		See ANSI C78.260
FGT	120	1500		T4	R7s	40000	3200	400	Horiz	167.9		See ANSI C78.260
DVX	165	1500		T3.25	R7s	36000	3100	600	Horiz	186		See ANSI C78.260
FFW	120	2000		T4	R7s	57000	3200	125	Horiz	169.3		See ANSI C78.260
FEY	120	2000		T8	R7s	57000	3200	300	Any	142.9		See ANSI C78.260
FEX	240	2000		T8	RX7s	42500	3200	300	Any	142.9		See ANSI C78.260

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FHZ	6	6		MR13.25	G21			75	BDTH		25.4	27.9			Opaque coating
FJV	6	6		MR13.25	Special H		3280	200	Any		25.5	27			
ETM	6	7		MR18	G3.9		3350	50	Any		60				Opaque coating
FJW	6	7		MR13.25	Special H		3530	50	Any		25.5	27			
FKY	6	9		MR11	G3.9			250	BDTH			50			
ETN	6	12		MR18	G3.9		3100	200	Any		60				Opaque coating
FJS	6	12		MR13.25	Special		3540	200	Any		25.5	27			
ETP	12	12		MR18	G3.9		3100	200	Any		60				Opaque coating
EWM	12	12		MR13.25	G21			200	Any		25.4	27.9			Opaque coating
FJT	12	12		MR13.25	Special H		3350	200	Any		25.5	27			
FTA	12	12		MR11	GZ4	6400		1000	Any						
FTB	12	12		MR11	GZ4	5500		2000	Any						
GDK	12	12		MR11	GZ4		2925	2000	Any	35					
GDL	12	12		MR11	GZ4		2925	2000	Any				6	5000	
GDM	12	12		MR11	GZ4		2925	2000	Any				20	750	
GDN	12	12		MR11	GZ4		2925	2000	Any				30	500	
GDB	6	15		MR16	BA15d		3375	50	Any		49.5				
GBA	6	15		MR11	B15d			1000	Any		35		6		36mm aluminum reflector, narrow spot
GBB	6	15		MR18	B15d			1000	Any		56				56mm aluminum reflector, narrow spot
GBC	6	15		MR18	B15d			1000	Any		56				56mm aluminum reflector, spot
ERW	12	18		MR18	G3.9		2900	650	Horiz		60				Opaque coating
FJD	12	19		MR16	GX5.3		2975	500	Horiz			141.3			
GBD	12	20		MR11	B15d			1000	Any		35				36mm aluminum reflector, spot

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
GBE	12	20		MR11	B15d			1000	Any		35				36mm aluminum reflector, medium flood
GBF	12	20		MR11	B15d			1000	Any		35				36mm aluminum reflector, flood
BBF	12	20		MR16	GX5.3		2672	2000	Any		44.5				
FSS	12	20		MR11	B15d	5500		2000	Any						
FST	12	20		MR11	B15d	1700		2000	Any						
FTC	12	20		MR11	GZ4	17600		2000	Any						
FTD	12	20		MR11	GZ4	600		2000	Any						
GES	12	20		MR16	BA15d		3050	2000	Any				33-36	450	
GET	12	20		MR16	BA15d		3050	2000	Any				24-26	900	
GEV	12	20		MR16	BA15d		3050	2000	Any				12-14	3100	
BAB	12	20		MR16	GX5.3		3150	3000	Any		44.5				
ESX	12	20		MR16	GX5.3		3150	3000	BDTH		44.5	108			
EZH	12	20		MR16	GX5.3		3000	3000	BDTH						
EZX	12	20		MR16	GX5.3	8500	3150	3000	Any						
GDC	12	25		MR16	BA15d		3500	50	Any		49.5				
FHX	13.8	25		MR16	GX5.3		3200	250	BDTH		44.5	108			See ANSI C78.1420
FJP	13.8	25		MR16	GX5.3		3200	250	Horiz			104.8			
FKZ	13.8	25		MR11	GZ4			250				165			
GHZ	13.8	25		MR11	GZ4			250				165			
FLT	13.8	25		MR11	GZ4			500							
ERR	14	25		MR18	G3.9		3100	200	Horiz		60	121			Opaque coating
EYG	14	25		MR16	GX5.3			500	BDTH						See ANSI C78.1420
FSV	12	26		MR11	B15d	600		2000	Any						
EWJ	12	28		MR16	GX5.3		3200	750	BDTH		44.5	141.3			
EWT	12	28		MR11	G3.9		3000	1000	Any		44.5	107			Opaque coating

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FJY	12	28		MR11	G3.9			1000	BDTH		42	108			
FLS	12	28		MR11	GZ4			1000							
EZA		30	6.6	MR16	GX5.3		2900		BDTH						
EKZ	10.8	30		MR16	GX5.3		3100	200	BDTH	44.5	38.1				
ETR	12.8	30		MR16	GX5.3		3100	500	Any	44.5	114.3				
FJX	13.8	30		MR16	GX5.3			500	BDTH	44.5	108				See ANSI C78.1420
FJZ	13.8	30		MR11	GZ4			500	BDTH	40	165				
GBH	6	35		MR18	B15d			1000	Any	56					56mm aluminum reflector, spot
GBG	6	35		MR18	B15d			2000	Any	56					56mm aluminum reflector, narrow spot
EPN	12	35		MR16	GX5.3		3300	50	BDTH	44.5	29				
EXP	12	35		MR16	GX5.3	3300		50	Any	44.5					
FMT	12	35		MR16	GX5.3		2950	2000	Any						Narrow flood
FMV	12	35		MR16	GX5.3		3050	2000	Any						Narrow flood
FMW	12	35		MR16	GX5.3		3050	2000	Any						
FTE	12	35		MR11	GZ4	9000		2000	Any						
FTF	12	35		MR11	GZ4	3000		2000	Any						
FTH	12	35		MR11	GZ4		2950	2000	Any						
FRA	12	35		MR16	GX5.3	3600		3000	Any						
FRB	12	35		MR16	GX5.3	9000		3000	Any						
FTZ	12	35		MR16	GX5.3		3100	3000	Any						
GAX	12	35		MR11	GZ4		3050	3000	Any				36	1100	
GDY	12	35		MR11	BA15d		3050	3000	Any				12	5250	
GDZ	12	35		MR11	BA15d		3050	3000	Any				24	1670	
GEN	12	35		MR16	BA15d		3050	3000	Any				35	1100	
													12-14	7100	

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
GEP	12	35		MR16	BA15d		3050	3000	Any				24-26	2050	
GER	12	35		MR16	BA15d		3050	3000	Any				33-36	1000	
ETW	13.8	35		MR16	GX5.3			1000	Horiz	44.5		198.4			
FHL	6	36		MR13.25	Special			200	BDTH	25.4		27.9			Opaque coating
EPT	10.8	42		MR16	GX5.3		2900	8000	BDTH	44.5		38.1			
EYP	12	42		MR16	GX5.3		3000	2000	BUBH						
EYR	12	42		MR16	GX5.3		3000	2000	BUBH						
EYS	12	42		MR16	GX5.3		3000	2000	BUBH						
EZY	12	42		MR16	G5.3	12500	3050	3000	Any						
EZC		45	6.6	MR16	GX5.3		2950	1000	BDTH						
BBB	12	45		MR16	GX5.3			400	BDTH	44.5					
ETY	12	45		MR16	GY5.3		3050	400	Horiz	44.5		29			Opaque coating
ERJ	12.8	45		MR13.25	G3.9		3400	15	Horiz	50.8		89			Opaque coating
EZP		50	6.6	MR16	GX5.3		2950	2000	BDTH						
DPC	8	50		MR16	GZ6.35			50	Horiz	42		32			
EFM	8	50		MR16	GZ6.35			50	BDTH	42		32			Opaque coating
FTG	12	50		MR16	GX5.3		3500	50	Any						
FLA	12	50		MR16	GX5.3		3200	1000	Horiz			106.1			
FPF	12	50		MR16	GX5.3			2000	Any						
FTP	12	50		MR11	GZ4	800	2900	2000						2000	
FTR	12	50		MR11	GZ4	800	2900	2000						3700	
GBJ	12	50		MR18	B15d			2000	Any	56					56mm aluminum reflector, spot
GBK	12	50		MR18	B15d			2000	Any	56					56mm aluminum reflector, medium flood
GBL	12	50		MR18	B15d			2000	Any	56					56mm aluminum reflector, spot

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
ENL	12	50		MR16	GX5.3		3050	3000	BDTH		44.5	38.1			
EXN	12	50		MR16	GX5.3	1500	3050	3000	Any						
EXT	12	50		MR16	GX5.3	9150	3050	3000	Any						
EXZ	12	50		MR16	GX5.3		3075	3000	Any						
FNC	12	50		MR16	GX5.3			3000	Any				10		Yellow light beam
FND	12	50		MR16	GX5.3			3000	Any				10		Red light beam
FNE	12	50		MR16	GX5.3			3000	Any				10		Green light beam
FNF	12	50		MR16	GX5.3			3000	Any				10		Blue light beam
FNW	12	50		MR16	GX5.3		3050	3000	Any						
FTY	12	50		MR16	GX5.3		3100	3000	Any						
FXH	12	50		MR16	GU5.3		3200	3000	Any		54		38	1800	
FXJ	12	50		MR16	GU5.3		3200	3000	Any		54		21	3700	
FXK	12	50		MR16	GU5.3		3200	3000	Any		54		12	9500	
GBT	12	50		MR16	BA15d		3050	3000	Any				12-14	9200	
GBV	12	50		MR16	BA15d		3050	3000	Any				24-26	2800	
GBW	12	50		MR16	BA15d		3050	3000	Any				33-36	1400	
EXK	12	50		MR16	GX5.3		3050	4000						2450	
FNV	12	50		MR16	GX5.3		3050	4000	Any						
EPZ	13.8	50		MR16	GX5.3		3150	1000	BDTH		44.5	108			See ANSI C78.1420
FJJ	13.8	50		MR16	GX5.3		3150	1000	Horiz				195		
FJK	13.8	50		MR16	GX5.3		3150	1000	Horiz				152.4		
FJR	13.8	50		MR16	GX5.3		3150	1000	Horiz				104.8		
FLN	13.8	50		MR16	GX5.3			1000	BDTH				133		
FML	13.8	50		MR16	GX5.3		3150	1000	BDTH						See ANSI C78.1420
GJT	13.8	50		MR16	Special K			1000	BDTH				108		
DJT	14	50		MR16	GX5.3		3150	1000	BDTH		44.5	152			See ANSI C78.1420
ELR	16	50		MR14	GX7.9			250	Horiz	15.9	40.6	205			
ELS	16	50		MR14	GX7.9		3100	650	Horiz	15.9	40.6	205			

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
ENZ	30	50		MR16	GX5.3		3400	25	BDTH		44.5	29			
DZP	30	50		MR18	GX7.9			150	Horiz	15.9	50.8	72.1			
EZE	82	50		MR13.25	GX5.3		3250	150	BDTH						
DDF	17	55		MR16	GX5.3			300	BDTH		44.5	55.6			
FJF	84	55		MR16	GY5.3		3100	500	BDTH		44.5	108			
FPA	12	65		MR16	GX5.3		3050	3500	Any						
FPB	12	65		MR16	GX5.3		3050	3500	Any						
FPC	12	65		MR16	GX5.3		3050	3500	Any						
EYC	12	71		MR16	G5.3	12000	3050	3500	Any						
EYF	12	71		MR16	GX5.3	11000	3050	3500	Any						
EYJ	12	71		MR16	GX5.3		3050	3500	Any						
EFN	12	75		MR16	GZ6.35			50	BDTH		42	32			
FPD	12	75		MR16	GX5.3			2000	Any						Medium flood
FPE	12	75		MR16	GX5.3			2000	Any						Spot
BBG	12	75		MR16	GX5.3		2714	3500	Any		44.5				
FLR	14.4	75		MR16	GX5.3		3300	40	Any						Aluminized reflector
BAA	28	75		MR16	GX5.3		3000	2000	Any		44.5	3327			
FSA	110	75		MR16	E17/20	6500	3000	2000	Any						
FSB	110	75		MR16	E17/20	3000	3000	2000	Any						
FSD	110	75		MR16	E17/20	1800	3000	2000	Any						
EWY	12	80		MR16	GX5.3		3150	1000	Horiz			223.8			
EJY	19	80		MR16	GX5.3		3400	25	BDTH		44.5	38.1			
EKG	19	80		MR16	GX5.3		3400	25	BDTH		44.5	44.5			
DDK	19	80		MR16	GX5.3		3300	40	BDTH		44.5	152			
DDM	19	80		MR16	GX5.3		3350	50	BDTH		44.5	152			See ANSI C78.1433
ENW	19	80		MR16	GX5.3		3200	200	BDTH		44.5	44.5			
ENV	21	80		MR14	GX7.9			20	Horiz	15.9	51.4	78.4			
EPG	21	80		MR14	GX7.9		3300	100	Horiz	15.9	51.4	81.8			

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
FJM	21	80		MR16	GX5.3		3125	500	Horiz			208.3			
DDS	21	80		MR16	GX5.3		3125	1000	BDTH		44.5	165			See ANSI C78.1420
ELB	30	80		MR16	GX5.3		3400	18	BDTH		44.5	29			See ANSI C78.1433
EPK	30	80		MR16	GX5.3		3400	18	BDTH		44.5	44.5			
ELE	30	80		MR14	GX7.9		3400	20	Horiz	15.9	50.8	78.4			
EKP	30	80		MR16	GX5.3		3350	25	BDTH		44.5	44.5			
EPF	30	80		MR14	GX7.9		3200	100	Horiz	15.9	50.8	78			
FJN	13.8	85		MR16	GX5.3		3150	1000	Horiz			223.8			
GED	13.8	85		MR16	Special K			1000	BDTH			165			
DED	14	85		MR16	GX5.3		3150	1000	BDTH		44.5	165			See ANSI C78.1420
ESJ	82	85		MR16	GY5.3			40	BDTH		44.5	29			
FNM	82	85		MR13.25	GX5.3		3300	40	BDTH		44.5		15		
ESH	82	85		MR16	GY5.3			250	BDTH		44.5	152			
EZW	82	85		MR16	GY5.3		2900	1000	BDTH						
FJE	84	85		MR16	GY5.3		3100	500	BDTH		44.5	165			
EPV	14.5	90		MR16	GX5.3		3150	500	BDTH		44.5	155.2			See ANSI C78.1420
EPX	14.5	90		MR16	GX5.3		3150	500	BDTH		44.5	165			See ANSI C78.1420
FJH	14.5	90		MR16	GX5.3		3200	500	Horiz			172.7			
EFP	12	100		MR16	GZ6.35			50	BDTH		42	32			
EXV	12	100		MR16	G5.3	3300	3350	50	Any						
EMC	12	100		MR16	GX5.3		3100	200	BDTH		44.5	142			
EVY	12	100		MR16	G6.35			1000	Horiz		44.5	32			
FSC	110	100		MR16	E17/20	9000	3000	2000	Any						
FSE	110	100		MR16	E17/20	4000	3000	2000	Any						
FSF	110	100		MR16	E17/20	2500	3000	2000	Any						
FJL	17.5	114		MR16	GX5.3		3200	500	Horiz			165.1			
EKN	17.7	120		MR16	GX5.3		3200	120	BDTH		44.5	38.1			
FLZ	18.7	125		MR16	GX5.3			200	BDTH			31.8			

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EFR	15	150		MR16	GZ6.35			50	BDTH		42	32			
DDL	20	150		MR16	GX5.3		3150	500	BDTH		44.5	196.8			See ANSI C78.1420
DNF	21	150		MR16	GX7.9		3400	25	Horiz	15.9	50.8	69.1			See ANSI C78.1434
EJA	21	150		MR16	GX5.3		3350	40	BDTH		44.5	27.9			
EJM	21	150		MR16	GX5.3		3350	40	BDTH		44.5	38.1			
EJN	21	150		MR16	GX5.3		3400	40	BDTH		44.5	50.8			
EJV	21	150		MR16	GX5.3		3350	40	BDTH		44.5	44.5			
ELD	21	150		MR16	GX5.3		3350	40	BDTH		44.5	165.1			
ELZ	21	150		MR18	GX7.9		3450	60	Horiz	15.9	47.5	69			
EKE	21	150		MR16	GX5.3		3250	200	BDTH		44.5	44.5			
ELV	21.5	150		MR18	GX7.9		3300	100	Horiz	15.9	50.8	69			
ENB	21.5	150		MR16	GX5.3		3300	100	Any		44.5	44.5			
FLB	82	150		MR16	GX5.3		3300	40	BH			152.4			
FLC	82	150		MR16	GX5.3		3200	100	BH			152.4			
ESE	100	150		MR16	GY5.3			12	BDTH		44.5	44.5			
DNE	120	150		MR16	G7.9		3350	12	Horiz	15.9	50.8	69.1			
ESD	120	150		MR16	GY5.3			12	BDTH		44.5	44.5			
DZN	120	150		MR14	G7.9		3350	18	Horiz	15.9	50.8	78.4			
EZK	120	150		MR16	GY5.3		3100	200	Any						
ERX	18	160		MR14	GX7.9		3200	250	Horiz	15.9	47.4	185			
ESC	24	200		MR16	GX5.3		3400	25	BDTH		44.5	35			
EJL	24	200		MR16	GX5.3		3400	50	BDTH		44.5	31.8			See ANSI C78.1433
EKX	24	200		MR16	GX5.3		3400	50	BDTH		44.5	139.7			
EWf	24	200		MR16	GX5.3			50	BDTH		44.5	298.5			
EXS	30	200		MR16	G5.3	9400	3300	50	Any						
ETX	82	200		MR16	GY5.3			50	BDTH		44.5	152.4			
EYA	82	200		MR16	GY5.3		3300	50	BDTH						
EZF	68	225		MR13.25	GX5.3			500	BDTH						

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EZJ	68	225		MR13.25	GX5.3			500	BDTH						
FMA	28	230		MR16	GX5.3			500	BDTH			88.9			
ERY	24	250		MR14	GX7.9		3400	35	Horiz	15.9	47.4	65.8			
ELC	24	250		MR16	GX5.3		3400	50	BDTH		44.5	31.8			See ANSI C78.1433
EMM	24	250		MR14	GX7.9		3400	50	Horiz	15.9	47.4	66			See ANSI C78.1434
EVW	82	250		MR16	GY5.3			50	BDTH		44.5	298.5			
EXY	82	250		MR13.25	GX5.3			200	BDTH		44.5	152.4			See ANSI C78.1430
EVZ	100	250		MR16	GY5.3		3250	175	Horiz		44.5	36.5			
BHB	120	250		MR14	G7.9		3400	25	Horiz	15.9	47.4	65.8			
EXX	120	250		MR16	GY5.3		3300	25	Any		44.5			6750	
FLH	120	250		MR16	GY5.3		3250	50	BH						
FLL	120	250		MR16	GY5.3		3250	50	BH						
ENH	120	250		MR16	GY5.3		3250	175	BDTH		44.5	152.4			See ANSI C78.1431
ETJ	120	250		MR16	GY5.3			175	BDTH		44.5	36.5			
EZG	35	300		MR16	Special I		6000	75	Horiz			37			
EZM	37.5	300		MR24	Special I		5500	25	Horiz			52			
EXW	82	300		MR13.25	GX5.3			15	BDTH		44.5	152.4			See ANSI C78.1430
EWV	82	300		MR13.25	GX5.3		3300	35	Horiz		44.5	152.4			
EXR	82	300		MR13.25	GX5.3			35	BDTH		44.5	152.4			See ANSI C78.1430
FLM	82	300		MR16	GX5.3		3300	50	BDTH			31.8			
EWK	82	300		MR16	Special		3200	70	Any			152			
EWV	82	300		MR13.25	GX5.3		3300	70	Horiz		44.5	152.4			
FHS	82	300		MR13.25	GX5.3			70	BDTH		44.5	152.4			See ANSI C78.1430
ENG	120	300		MR16	GY5.3		3450	15	BDTH		44.5	152.4			See ANSI C78.1431
ELH	120	300		MR16	GY5.3		3350	35	BDTH		44.5	152.4			See ANSI C78.1431
EWG	120	300		MR16	GY5.3			35	BDTH		44.5	32			
EYK	120	300		MR16	G5.3		3300	60	BDTH						
ERV	36	340		MR16	GY5.3		3300	75	BDTH		44.5	298.5			

Table 8 – ANSI assigned photo lamp codes –Integral Reflector Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - Integral Reflector Lamps

Code	Volts	Watts	Amps	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	LCL mm	MOL mm	WD mm	Beam Spread degrees	Beam CP	Comments
EZT	45	350		MR24	Special I		5500	50	Horiz			52			
ENX	82	360		MR16	GY5.3		3300	75	BDTH		44.5	298.5			
FLE	82	360		MR16	GY5.3		3300	75	BDTH		44.5	209.6			
EPW	100	360		MR16	GY5.3		3300	75	BDTH		44.5	298.5			
FXL	82	410		MR16	GY5.3		3300	38	BDTH		44.5				
GKU	82	410		MR16	GY5.3		3300	38	BDTH		44.5				



Table 9 – ANSI assigned photo lamp codes –PAR Lamps

ANSI ASSIGNED PHOTO LAMP CODES - PAR Lamps

Code	Volts	Amps	Watts	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	MOL mm	Beam Spread degrees	Beam CP	Comments
DWH	6.3		100	PAR36	Special G		3400	3	Any	69.9			
FGS	120		250	PAR36	GX16d		3400	4	Horiz	61.9			
EZB	120		250	PAR36	Special J		2952	100					
DXK	120		650	PAR36	Special J		3400	30	Horiz	69.9			
FBJ	120		650	PAR36	Special J		3400	30	Horiz	61.9			
FBO	120		650	PAR36	Special G		3400	30	Horiz	65.1			
FAY	120		650	PAR36	Special J		5000	35	Horiz	61.9			
FBE	120		650	PAR36	Special G		5000	35	Horiz	65.1			
FGK	120		650	PAR36	Special G	35000	5000	35	Horiz	65.1			
FCX	120		650	PAR36	Special J		3200	100	Horiz	61.9			
FCW	120		650	PAR36	Special J		3200	100	Horiz	61.9			
DWE	120		650	PAR36	Special G		3200	100	Horiz	69.9			
GKW	120		800	PAR64	GX16d		3200	350	Any	152	9Hx9V	340000	
GKX	120		800	PAR64	GX16d		3200	350	Any	152	27Hx27V	95000	
GKY	120		800	PAR64	GX16d		3200	350	Any	152	40Hx40V	40000	
GKZ	120		800	PAR64	GX16d		3200	350	Any	152	7Hx7V	500000	
FGP	120		1000	PAR64	GX16d		5200	200	Any	152.4			
FGN	120		1000	PAR64	GX16d		5200	200	Any	152.4			
FGM	120		1000	PAR64	GX16d		5200	200	Any	152.4			
FFP	120		1000	PAR64	GX16d			400	Any				
GFF	120		1000	PAR64	GX16d/32x			400		150	68H x 67V	16000	Opaque coating
FFR	120		1000	PAR64	GX16d		3200	400	Any	152.4			
FFS	120		1000	PAR64	GX16d		3200	400	Any	152.4			
FFN	120		1000	PAR64	GX16d		3200	400	Any	152.4			
EXG	220		1000	PAR64	GX16d	30000	3200	300	Any	150			
EXE	220		1000	PAR64	GX16d		3200	300	Any	150			
EXD	220		1000	PAR64	GX16d		3200	300	Any	150			
EXC	220		1000	PAR64	GX16d		3200	300	Any	150			

Table 9 – ANSI assigned photo lamp codes –PAR Lamps (continued)

ANSI ASSIGNED PHOTO LAMP CODES - PAR Lamps

Code	Volts	Amps	Watts	Bulb	Base	Light lumens	Color Temp. K	Life hours	Burn Position	MOL mm	Beam Spread degrees	Beam CP	Comments
GFA	120		1200	PAR64	GX16d/32x			400		150	24H x 13V	150000	Opaque coating
GFB	120		1200	PAR64	GX16d/32x			400		150	10H x 8V	450000	Opaque coating
GFC	120		1200	PAR64	GX16d/32x			400		150	10H x 8V	540000	Opaque coating
GFD	120		1200	PAR64	GX16d/32x			400		150	65H x 65V	20000	Opaque coating
GFE	120		1200	PAR64	GX16d/32x			400		150	58H x 25V	450000	Opaque coating