

GE Consumer & Industrial
Lighting

Entertainment Lamp Catalogue



GE Consumer & Industrial
Lighting

Hardcore Halide.

Raw power. That's what you get with GE CSR/CSD metal halide lamps. They provide excellent color stability, reliability, and maintain a higher light output - no matter how hard the house is rocking.

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imagination at work

SHOWBIZ
for stage, studio, film and event lighting

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to Kino Flo cinema fluorescent lamps			

Introduction

This catalogue lists and gives essential technical data for all presently available General Electric lamps that are frequently used in lighting for theatrical performances, television, motion picture and video productions, and other entertainment venues.

Lamp listings are grouped into tables, each containing a closely related “family” of lamps with similar configuration. In many tables, the lamps are interchangeable (subject to limitations noted). This provides a self-contained guide for selecting alternative lamps. The following paragraphs explain the use of the tables.

LAMP IDENTIFICATION AND ORDERING CODES

Many GE lamps used in stage/studio applications are “coded.”

ANSI CODES are 3-letter codes assigned by the American National Standards Institute. They provide a system for assuring mechanical and electrical interchangeability among similarly coded lamps of various manufacturers. The letters have no rational meaning other than to identify the lamp’s dimensional, electrical and photometric characteristics that are on file with ANSI. Some GE lamps have multiple codes (examples: DYS/DYV/BHC). The first code is the official ANSI code, but the lamp also meets or exceeds the described characteristics for the other code(s), and may be used to replace lamps of either code.

LIF CODES are assigned by the Lighting Federation of London, U.K. They ensure electrical and mechanical interchangeability of similarly coded lamps. LIF codes are divided into groups according to the primary application of the lamps.

MINIATURE LAMP CODES consist of numbers, also assigned by ANSI, to identify low voltage lamps from all manufacturers for interchangeability. GE uses these numerical codes as GE Description. In some instances, the GE Miniature Lamp Code includes the prefix H or Q, indicating a lamp with a halogen or quartz filament tube.

DISCHARGE AND FLUORESCENT LAMPS

GE HIGH INTENSITY DISCHARGE lamps have brand name codes. The following describes the optimized characteristics:

CSR METAL HALIDE are daylight (6000K) color often with CRI greater than 90. Many with hot restrike (HR) and dimmable with stable color temperature. Use with electronic or AC magnetic ballast/ignitor control gear. Some CSR hot restrike lamps use special quartz to control the amount of UV emitted (UVC).

CONSTANTCOLOR® CMH® have CR greater than 80 with color uniformity between lamps and over lamp life.

CSS compact source specials are for disco and fiber optic application.

CSD are compact source lamps with very high color temperature and long life.

CID compact iodide daylight have color temperatures of daylight (5500K) while **CSI** compact source iodide lamps have a warmer color (4000K) that can be blended with tungsten lamps.

MVR is Multi-Vapor® Metal Halide and along with **SPL** lamps are suitable for sports lighting.

Cinema Fluorescent lamps come in warm (3200K) and daylight (5500K) colors with and without **covRguard® (CVG)** shatter protection. There are compact **Biax® (BX)** lamps available.

VOLTAGE

Quartzline® halogen and incandescent lamps can be operated on AC or DC circuits. Fluorescent and metal halide lamps are for AC only, with suitable auxiliary ballasts.

ORDERING LAMPS

Order lamps using the codes in the GE Product Ordering Code column. Add the GE Description, plus lamp voltage (essential for lamps available in more than one voltage) to help assure getting the exact lamp required. This global catalogue shows where lamps are stocked (in North America, Europe, both North America and Europe). If a lamp is not stocked in your area, contact your sales representative.

LAMP INDEXES

Lamps are indexed by technology on page 9, along with halogen lamps by base. Lamps are indexed by 3-letter ANSI or LIF code where available on page 10. Lamps are indexed by wattage on pages 12-13.

LAMP TABLES

Each of the 39 lamp tables contains a “family” of lamps with similar configuration. Tables 1-25 each contain **Quartzline®** lamps having the same base and (in most cases) the same light source location. Therefore, all the lamps within each table are generally interchangeable. Tables 26-39 are various discharge lamp systems which require ballasts that may preclude interchange. When selecting an alternative lamp from within a particular table, note any limitations to be considered as stated in the table. Filament forms may vary among lamps in some tables. Use of a different filament form may effect the light output. Reflector lamps have differences in voltage and lamp bases as well as the usual concern for excess heat when a higher wattage lamp is substituted.

FOOTNOTES

Throughout the lamp tables, the footnote column contains important information and safety notes. The footnotes and safety notices appear on pages 33-34.

LAMP BASE DESIGNATIONS

Each lamp table includes the name of the base used on the lamps therein, including its letter/number ANSI/IEC designation, where applicable. Lamp bases are pictured on page 8.

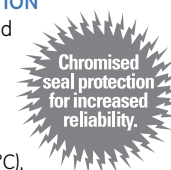
RECOMMENDED OPERATING POSITION

Limitations on lamp operating position are shown either in the table heading or in a column within the table, in which case the following abbreviations are used:

H4	operate only horizontally within 4 degrees
H15	operate horizontally ±15 degrees
H45	operate horizontally ±45 degrees
HBU	horizontal -15 degrees to base up
ANYCH	base any position, but with filament coil axis horizontal
BD	base down
BU30	within 30° of vertical base-up
BD45	within 45° of vertical base-down
BDTH	base down to horizontal
BDTHCH	base down to horizontal with filament coil axis horizontal
Fluorescent	lamps are all “ANY” position

CHROMISED SEAL PROTECTION

Quartzline® Stage/Studio and selected **CSR** lamps have a special chromised seal protection, which allows lamp seal temperatures up to 500°C (vs. traditional 350°C), which increases life and reliability.



OTHER GE PUBLICATIONS

All the lamps in this consolidated Stage/Studio Lamp Catalogue come from the GE catalogues listed below. They contain data for other lamps that may be of interest for stage/studio applications.

NA Specialty Catalogue | PC 29119

NA Lamp Products Catalogue | PC 25265

European Spectrum Catalogue

Heading identification

WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	BULB TYPE/OD	LUMENS	COLOR TEMP (K°)	LIFE (HOURS)	FILAMENT TYPE	COIL LENGTH (MM)	MOL (MM)	BURNING POSITION	FROSTED	FOOTNOTES & CAUTIONS	FIG NO.
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ANSI CODE – common lamp ID with North American manufacturers

BULB TYPE/OD – T = tubular, P = pear; OD is in 1/8" increments

BURNING POSITION – see page 4 for codes used. Burning in other positions can dramatically shorten life.

COIL LENGTH (MM) – the length of coil/arc that is lighted

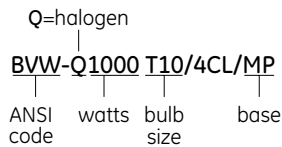
COLOR TEMP (K°) – measure of the warmth/coolness of the light. The higher the temperature, the whiter (cooler) the light appears.

DESIGN VOLTS – lamp data is based on operation at rated voltage

FILAMENT TYPE – are designated by a combination of letters and numbers in ANSI, or letters in Europe; C = coiled, CC = coiled coil

FOOTNOTES & CAUTIONS – see pages 33 & 34

GE DESCRIPTION – GE's identification code sometimes coded as shown



LIF CODE – common lamp ID with European manufacturers

LIFE (HOURS) – the medium life expectancy of a lamp under laboratory conditions

LUMENS – initial amount of light output

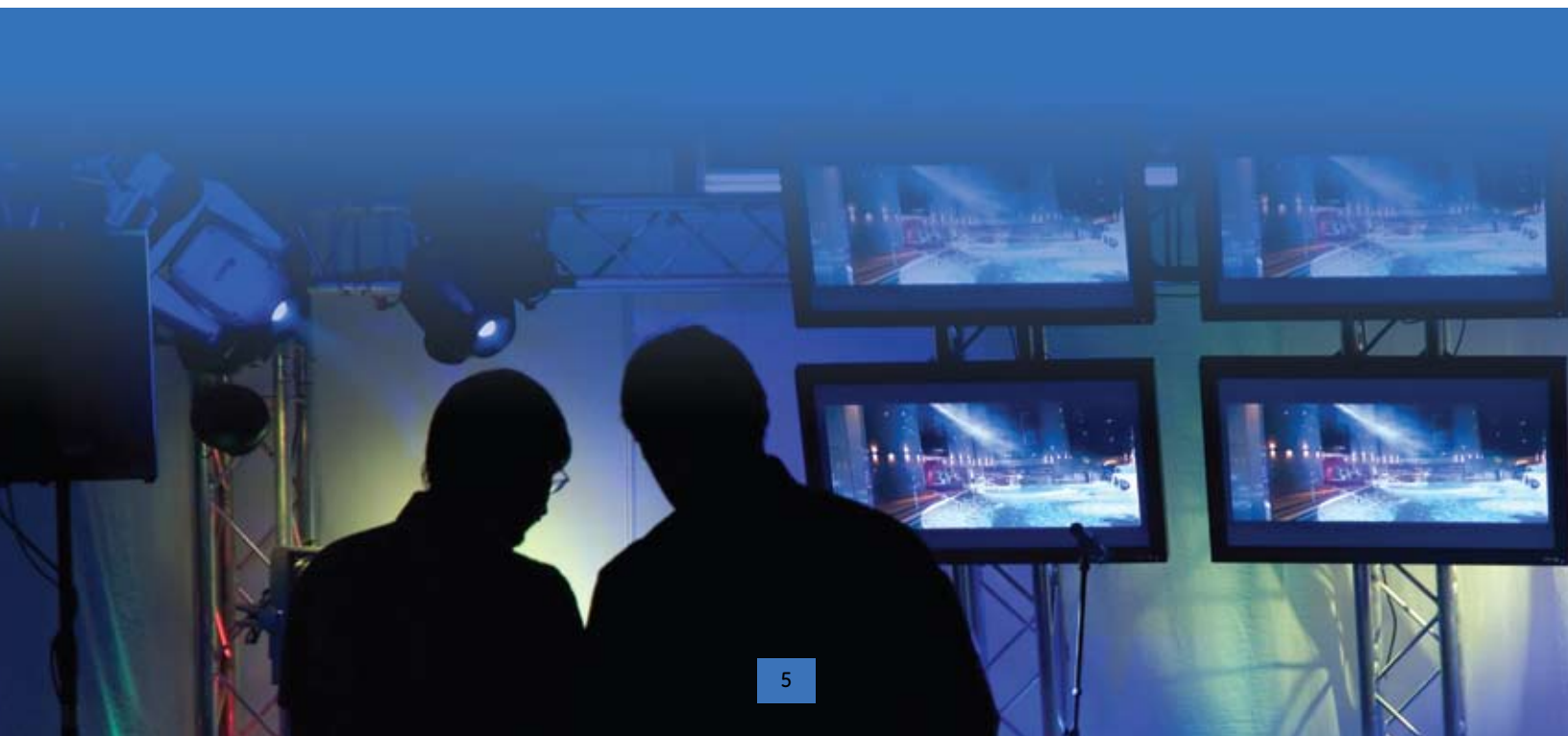
MOL (MM) – total lamp length in millimeters

ORDER CODE – It is important to use this 5-digit code to insure you get the correct product. FUTURE CODE, if any, will supersede order code when stock is depleted. There is no difference in product.

The timing of the change may vary between NA and Eu.

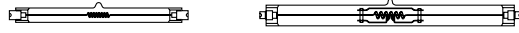
PACK QTY. – number of products in a case

WATTS – energy used (volts x amperes)



Lamp locator

LINEAR HALOGEN



tables 1-6

SINGLE-ENDED HALOGEN

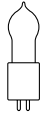


table 7

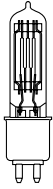


table 8

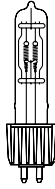
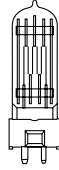


table 9



tables 10 & 11

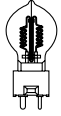


table 12

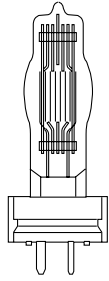


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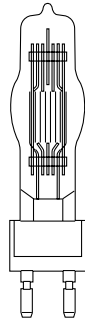


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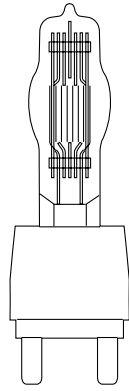


table 15

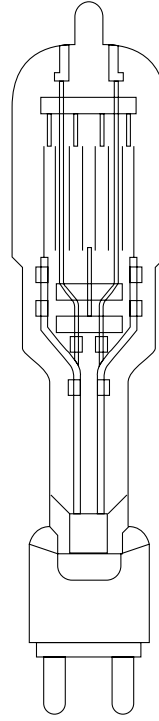


table 15

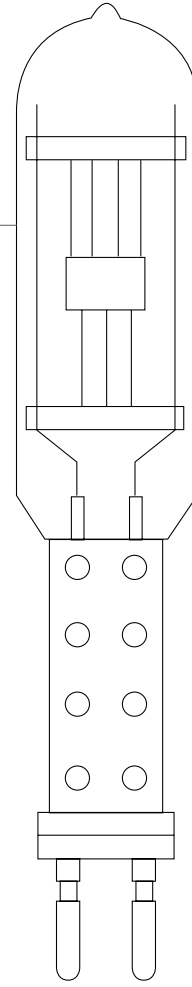


table 16

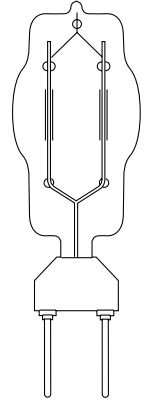


table 17

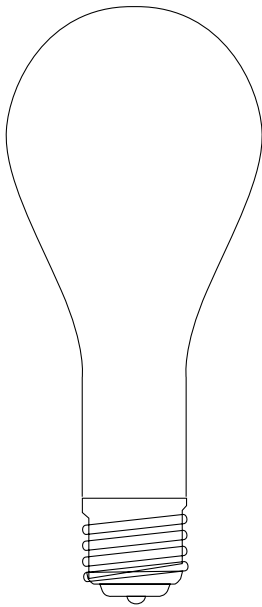


table 18



table 18

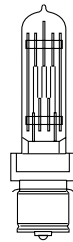


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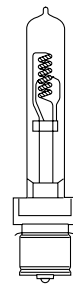


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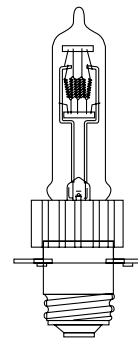


table 21

SEALED BEAM

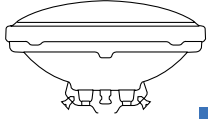


table 22

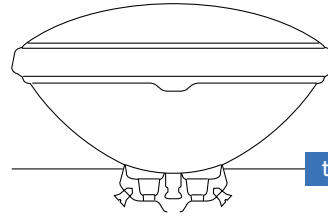
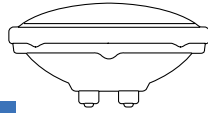


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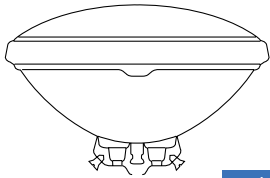
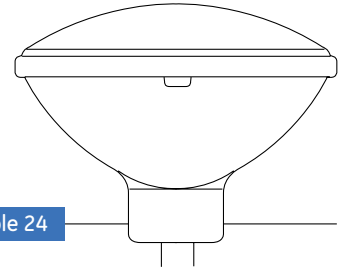


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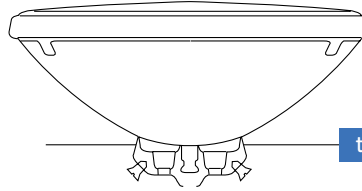
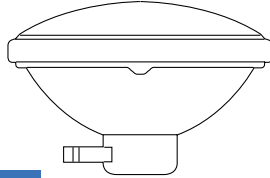
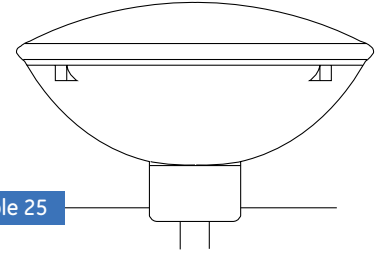
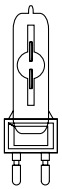


table 25



DISCHARGE



tables 26 & 28

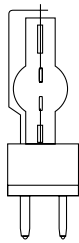
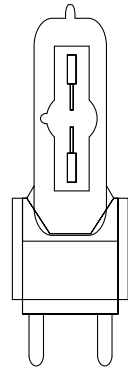
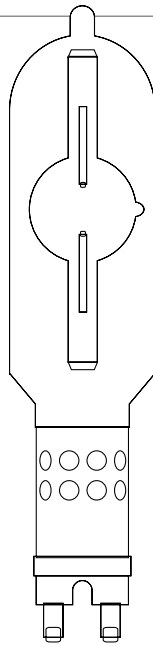


table 27



tables 28 & 29



tables 28 & 29

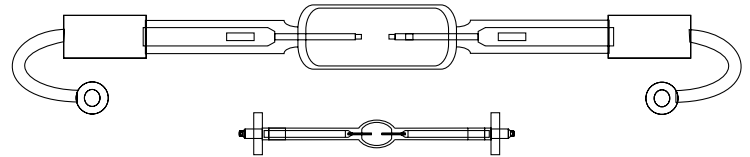
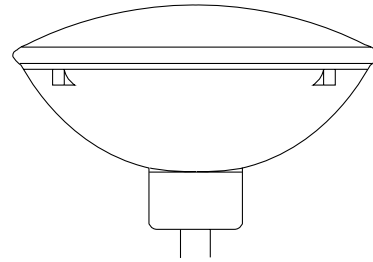


table 30



tables 31 & 32

CINEMA FLUORESCENT



tables 36-38

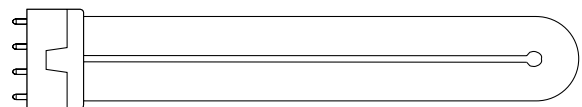
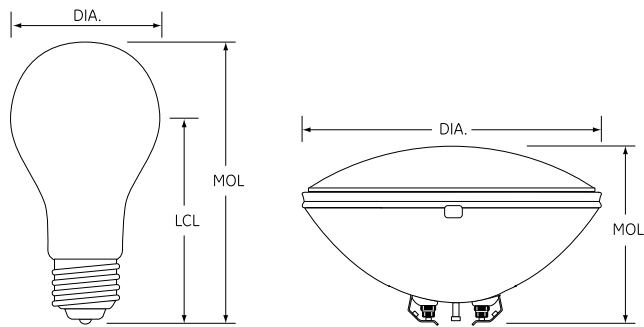


table 39

Bulb identification



DIA: Diameter of bulb in 1/8" increments (T8 = tubular 1" O.D.).
 MOL: Maximum Overall Length including base or pins.
 LCL: Distance between the center of the filament or arc and the light center length reference plane.

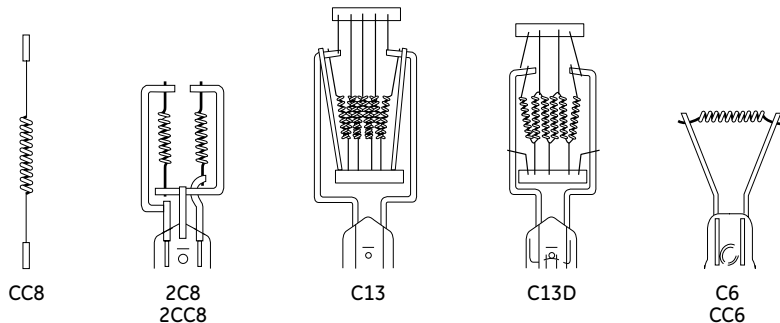
NOTE: Lamp drawings are not drawn to scale. Be sure to check size and dimension information when identifying each lamp.
 To convert millimeters to inches, divide millimeters by 25.4.

Base identification

HALOGEN DISCHARGE LAMP BASES

- min 2-pin G-5.3
- med 2-pin G9.5 GX9.5
- oriented med 2-pin GY9.5
- med 2-pin heat sink G9.5
- GY16d
- med bipost G22
- mogul bipost G38
- mogul screw E39
- med prefocus P28S
- mogul prefocus P40S
- med side prong MSP
- recessed contact R7's
- SFa21-12
- SFc10-4
- SFc10-4
- X515
- ext mogul end pr GX16d
- mogul end pr GX16d
- ferrule
- screw terminal
- cylinder

Filament identification



ANSI	EQUIVALENT	LIF
C8	axial single coil	SC
CC8	axial coiled coil	CC
C13	monoplane grid	MP
C13D	biplane grid	BP
2C13	twin monoplane grid	TF
6-C8	single coil hexagonal	S.C.H.
4-C8	single coil square	S.C.S.

Index by table, technology and lamp base

	table	page
halogen, linear lamp, compact coil (CC-8)		
R7s base, 80mm (3-1/8") MOL	1	14
R7s base, 95mm (3-3/4") MOL	2	14
R7s base, 143mm (5-5/8") MOL	3	14
halogen, linear lamp, standard coil		
R7s base, 119mm (4-11/16") MOL	4	14
R7s base, 167mm (6-9/16") MOL	5	15
R7s base, 189mm (7-7/16") MOL	6	15
halogen, single-ended, by base type		
G5.3 miniature 2-pin base (pins 5.3mm apart)	7	15
G9.5 medium 2-pin base (pins 9.5mm apart)	8	15
G9.5/heat sink metal 2-pin base	9	16
GX9.5 prefocus medium 2-pin base	10	16
GY9.5 oriented 2-pin base (2 od pins)	11	16
GZ9.5 oriented 2-pin base (2 od pins)	12	17
GY16 2-pin prefocus base (pins 16mm apart)	13	17
G22 medium bi-post base (pins 22mm apart)	14	17
G38 mogul bi-post base (pins 38mm apart)	15	18
GX38 mogul bi-post base (pins 38mm apart)	16	18
2 filament, GX38Q high volt base	17	18
E40 mogul screw base	18	18
P28s medium prefocus base, with grid coil	19	19
P28s medium prefocus base with CC-8 coil	20	19
P40 mogul prefocus base	21	19
halogen and incandescent reflector by par size		
par36 (4.5"/114mm) sealed beams	22	20
par46 (5.75"/146mm) sealed beams	23	21
par56 (7"/178mm) sealed beams	24	21
par64 (8"/203mm) sealed beams	25	22
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single-end short arc	27	24
single-end hot restrike	28	24
single-end hot restrike, UV control	29	24
linear double-end hot restrike	30	25
discharge-ConstantColor® CMH ceramic metal halide		
par56 reflector	31	26
par64 reflector	32	26
single ended	33	27
discharge-CSI, CID, MVR/SPL		
single and double-end	34	27
par64 reflector	35	27
cinema fluorescent		
cinema T8 high output	36	28
cinema standard T12	37	28
cinema T12 with covRguard® jackets	38	28
cinema Biax®	39	28



Index by ANSI code

ANSI CODE	TABLE	ANSI CODE	TABLE	ANSI CODE	TABLE	ANSI CODE	TABLE	ANSI CODE	TABLE	ANSI CODE	TABLE
BCM	16	DTY	15	EHD	8	FBG	7	FFS	25	FSK	11
BRH	2	DVS	4	EHF	8	FBO	22	FFT	5	FSL	11
BTL	19	DVY	7	EHG	8	FBX	1	FGT	55	FTL	13
BTM	19	DWE	22	EHM	4	FBY	2	FHM	4	FTM	13
BTN	19	DWZ	1	EHP	1	FCB	2	FKB	19	FVA	10
BTP	19	DXW	2	EJD	4	FCL	4	FKD	19	FVB	10
BTR	19	DXX	1	EJG	4	FCM	4	FKE	19	FWR	10
BVT	21	DYH	7	EKB	11	FCW	22	FKF	19	FWS	10
BVV	21	DYR	12	EKD	10	FCX	22	FKH	14	FWT	10
BVW	21	DYS	12	EKM	6	FDB	5	FKJ	14	GCS	11
BWA	15	DZA	7	EMD	4	PDF	4	FKK	15	GCV	11
BWF	18	EGE	20	EME	4	FDN	4	FKN	19	GCW	11
CXZ	15	EGF	20	EMF	4	FEL	8	FKR	8	GFB	25
CYV	15	EGG	20	EXC	25	FEP	8	FKW	11	GFC	25
CYX	15	EGJ	20	EXD	25	FER	3	FLK	8	GKV	8
DKX	18	EGK	20	EXE	25	FEX	3	FMR	11	GLA	8
DKZ	18	EGM	20	EXG	25	FEY	3	FRG	11	GLC	8
DPY	15	EGN	14	EYH	7	FFM	1	FRH	11	GLD	8
DSE	18	EGR	14	FAD	1	FFN	25	FRJ	11	GLE	8
DSF	18	EGT	14	FAY	22	FFP	25	FRK	11		
DTA	21	EHC	8	FBE	22	FFR	25	FRM	11		

Index by LIF code

LIF CODE	TABLE	LIF CODE	TABLE	LIF CODE	TABLE	LIF CODE	TABLE	LIF CODE	TABLE	LIF CODE	TABLE
BCM	16	CP40	14	CP70	10	CP91	14	P2/11	4	T14	19
A1/228	2	CP41	15	CP77	8	CP92	14	P2/12	6	T15	19
A1/233	12	CP43	13	CP79	13	CP93	14	P2/13	1	T16	21
A1/264	12	CP51	19	CP81	11	CP94	15	P2/27	3	T17	19
A1/266	1	CP52	19	CP82	11	CP95	25	P2/28	4	T18	11
CP23	10	CP53	21	CP83	15	CP105	17	P2/29	4	T19	10
CP24	10	CP58	17	CP86	25	HX48	15	P2/30	4	T25	11
CP29	15	CP59	18	CP87	25	HX800	8	P2/31	4	T26	11
CP30	17	CP60	25	CP88	25	P2/6	1	T11	10	T27	11
CP32	17	CP61	25	CP89	11	P2/7	6	T12	10	T28	19
CP39	14	CP62	25	CP90	10	P2/10	6	T13	19	T29	10



Cross reference

to discharge lamps

PRODUCT CODE	WATTS	GE DESCRIPTION	OSRAM DESCRIPTION	PHILIPS DESCRIPTION
hot restrike single-ended				
22496	18000	CSR18000/SE/HR	HMI18000W/SE	
48468	12000	CSR12000/SE/HR	HMI12000W/SE	MSR12000/HR
40492	6000	CSR6000/SE/HR/UV-C		
48467	6000	CSR6000/SE/HR	HMI6000W/SE	MSR6000/HR
27765	4000	CSR4000/SE/HR/UV-C		
48466	4000	CSR4000/SE/HR	HMI4000W/SE	MSR4000/HR
40482	2500	CSR2500/SE/HR/UV-C		
48465	2500	CSR2500/SE/HR	HMI2500W/SE	MSR2500/HR
27764	1200	CSR1200/SE/HR/UV-C		
48464	1200	CSR1200/SE/HR	HMI1200W/SE	MSR1200/HR
22495	800	CSR800/SE/HR/UC-C		
40460	575	CSR575/SE/HR/UV-C		
48463	575	CSR575/SE/HR	HMI575W/SE	MSR575/HR
45238	400	CSR400/SE/HR/75		
21853	400	CSR400/SE/HR	HMI400W/SE	MSR400/HR
48462	200	CSR200/SE/HR	HMI200W/SE	MSR200/HR
48461	125	CSR125/SE/HR		MSR125/HR
hot restrike double-ended				
48460	18000	CSR18000S/DE		
48459	18000	CSR18000/DE	HMI18000W/XS	
48457	12000	CSR12000/DE	HMI12000W/XS	
48456	6000	CSR6000/DE	HMI6000W	
48455	4000	CSR4000/DE	HMI4000W	
48454	2500	CSR2500/DE	HMI2500W/GS	
96800	1500	CSR1500/S/DE/60	HTI1500W/D7/60	MSR1500SA/DE
48453	1200	CSR1200/DE	HMI1200W/GS	MSI1200
41361	1200	CSR1200/S/DE/72	HTI1200W/D7/75	MSR1200SA/2 DE
22494	1200	CSR1200/S/DE/60	HTI1200W/D7/60	MSR1200SA/DE
41357	700	CSR700/S/DE/75	HTI700W/D4/75	MSR700SA/2 DE
22493	700	CSR700/S/DE/60	HTI700W/D4/60	MSR700SA/DE
45231	575	CSR575/SS/DE/75	HTI575W/D5/75	
70979	575	CSR575/S/DE/70	HMI575W/GS	MSI575
45232	400	CSR400/S/DE/90		
22478	400	CSR400/S/DE/75	HTI400W/D3/75	MSR400SA/DE
48450	200	CSR200/DE		
cold start (CSR)				
15378	575	CSR575/2/SE	HSR575/72	MSR575/2
49492	575	CSR575/2/T/SE		
49491	700	CSR700/2/SE		MSR700/2
49490	1200	CSR1200/2/SE		MSR1200/2
cold start (CSD)				
27817	250	CSD250/2/SE	HSD250/80	MSD250/2
cold start (SA)				
45234	700	CSR700/SA/72		
15380	700	CSR700/SA	HTI705W/SE	MSR700/SA
21849	1200	CSR1200/SA	HTI1200W/SE	MSR1200/SA
21801	1800	CSR2000/SA	HTI1800W/SE	MSR2000/SA

to Kino Flo cinema fluorescent lamps

PRODUCT CODE	LENGTH (INCHES)	GE DESCRIPTION	KINO FLO PART NO.
15712	24	F20T12/CINEMA32/HO	242-K32
15775	24	F20T12/CINEMA32/HO/CVG	242-K32-S
15713	24	F20T12/CINEMA55/HO	242-K55
15776	24	F20T12/CINEMA55/HO/CVG	242-K55-S
15716	48	F40T12/CINEMA32/HO	488-K32
15782	48	F40T12/CINEMA32/HO/CVG	488-K32-S
15717	48	F40T12/CINEMA55/HO	488-K55
15783	48	F40T12/CINEMA55/HO/CVG	488-K55-S
15718	72	F72T12/CINEMA32/HO	722-K32
15785	72	F72T12/CINEMA32/HO/CVG	722-K32-S
15719	72	F72T12/CINEMA55/HO	722-K55
15786	72	F72T12/CINEMA55/HO/CVG	722-K55-S
15720	96	F96T12/CINEMA32/HO	962-K32
15794	96	F96T12/CINEMA32/HO/CVG	962-K32-S
15721	96	F96T12/CINEMA55/HO	962-K55
15798	96	F96T12/CINEMA55/HO/CVG	962-K55-S
41869	21	F55BX/STUDIOBIAX32	
41873	21	F55BX/STUDIOBIAX56	
41903	21	F55BX/CINPLUS/32	55C-K29
41911	21	F55BX/CINPLUS/56	55C-K55
81205	48	F48T8/CINEMA32	
81206	48	F48T8/CINEMA55	
81207	48	F48T8/CINEMA32/CVG	
81208	48	F48T8/CINEMA55/CVG	



Index by watts

WATTS	DESCRIPTION	TABLE	WATTS	DESCRIPTION	TABLE	WATTS	DESCRIPTION	TABLE
2	4546	22	120	120PAR 56VNSP	24	500 cont'd.	500PAR64/NSP	25
6	4547	22		120PAR56MFL	24		500PAR64/WFL	25
25	25PAR36VWFL	22		120PAR56WFL	24		BTL-Q500T6/CL/P	19
	25PAR36WFL	22	125	CSR125/SE/HR	28		BTM-Q500T6/4CL/2P	19
	25PAR36	22	140	CSS150/CAP/50	34		EGE-Q500CL/P	20
	25PAR36/NSP	22	150	4570	23		EGN-Q500T8	14
	25PAR46	23		4571	23		EHC-Q500/5CL	8
28	F24T8CINEMA32/CVG	36		4572	23		EHD-Q500CL/TP	8
	F24T8CINEMA55/CVG	36		4626	22		FBG/FBD	7
30	4405	22		150PAR46/1	23		FDG-Q500T3/4CL	4
	4435	23		150PAR46/3MFL	23		FDN-Q500T3/4	4
	4511	22		CMH150/PAR56/830/Gx16d/MFL	31		FKF	19
	4515	22		CMH150/PAR56/830/Gx16d/SP	31		FRG-Q500T8	11
	4516	22		CMH150/PAR56/830/Gx16d/WFL	31		FRH	11
	4535	23		CMH150/PAR56/942/Gx16d/MFL	31		FRJ	11
	DZA	7		CMH150/PAR56/942/Gx16d/SP	31		GCV	11
	H4405	22		CMH150/PAR56/942/Gx16d/WFL	31		GCW	11
	H4515	22		CMH150/PAR64/830/Gx16d/MFL	32		Q500PAR56MFL	24
35	4436	23		CMH150/PAR64/830/Gx16d/SP	32		Q500PAR56NSP	24
	35PAR36/H/FL30	22		CMH150/PAR64/830/Gx16d/WFL	32		Q500PAR56WFL	24
	35PAR36/H/SP5	22		CMH150/PAR64/942/Gx16d/MFL	32		Q500PAR64/MFL	25
	35PAR36/H/SP8	22		CMH150/PAR64/942/Gx16d/SP	32		Q500PAR64/NSP	25
	35PAR36/H/VWFL	22		CMH150/PAR64/942/Gx16d/WFL	32		Q500PAR64/VNSP	25
	F20T12/CINEMA32/HO	37	200	200PAR	24		Q500PAR64/VNSP	25
	F20T12/CINEMA32/HO/CVG	38		200PAR46/3MFL	23		Q500T3/CL	4
	F20T12/CINEMA55/HO	37		200PAR46/3MFL12P	23		Q500T3/CL/6	4
	F20T12/CINEMA55/HO/CVG	38		200PAR46/3NSP	23		T17	19
37.5	H7616	22		200PAR46/3NSP	23		T28	19
40	4531	23		200PAR56/MFL	24	550	HPL550/C 77V	9
50	4502	22		CSR200/DE	30	575	CSR575/2/SE	26
	4505	22		CSR200/SE/HR	28		CSR575/2/T/SE	26
	4593	22	235	Q235T4/3	12		CSR575/DE	30
	50PAR36VWFL	22	240	240PAR 56VNSP	24		CSR575/S/DE/70	30
	50PAR36WFL	22		240PAR56MFL	24		CSR575/SE/HR	28
	50PAR36/H/FL30	22		240PAR56WFL	24		CSR575/SE/HR/UVVC	29
	50PAR36/H/SP5	22	250	4551	23		CSR575/SS/DE/75	30
	50PAR36/H/SP8	22		4552	25		FLK/LL-Q575T6	8
	50PAR36/NSP	22		4553	23		FLK-Q575T6	8
	50PAR36VNSP	22		4587	22		GLA-Q575T6/4CL	8
	50PAR36WFL/4	22		4596	22		GLC-Q575T6/5CL	8
	H7604	22		CSD250/2/SE	26		HPL575	9
	H7635	23		EYH/FKT	7		HPL575/C 115V	9
55	F48T8/CINEMA32	36	300	300PAR56/MFL	24		HPL575/C 120V	9
	F48T8/CINEMA32/CVG	36		300PAR56/NSP	24		HPL575/LL/C 115V	9
	F48T8/CINEMA55	36		300PAR56/WFL	24		HPL575/LL/C 120V	9
	F48T8/CINEMA55/CVG	36		FKW-Q300T8	11		HPL575-X LL	9
	F55BX/CINPLUS/32	39		FSK	11	600	4559	25
	F55BX/CINPLUS/56	39		FSL	11		DYH	7
	F55BX/STUDIOBIAx32	39		Q300T3/CL	4		DYS/DYV/BHC	12
	F55BX/STUDIOBIAx56	39		Q300T4/CL	1		FCB	2
60	F40T12/CINEMA32/HO	37	350	FDG/HIR-Q350T2/4CL	4		FMR-Q600T5	11
	F40T12/CINEMA32/HO/CVG	38		Q350T3/HIR	4		GKV	8
	F40T12/CINEMA55/HO	37	375	DWZ(30V)	1		GKV/LL	8
	F40T12/CINEMA55/HO/CVG	38		HPL375/C 115V	9		GKV-Q575T6/4CL	8
85	F72T12/CINEMA32/HO	37		HPL375/LL/C 115V	9		Q4559	25
	F72T12/CINEMA32/HO/CVG	38	400	99-0201CSI	34		Q4559X	25
	F72T12/CINEMA55/HO	37		CMH400/932/Gx9.5	33	625	Q625T3/4CLP2/10	6
	F72T12/CINEMA55/HO/CVG	38		CMH400/941/Gx9.5	33	650	CP23	10
100	4509	22		CSR400/S/DE/70	30		CP51	19
	4537	23		CSR400/S/DE/90	30		DVY	7
	4543	24		CSR400/SE/HR	28		DWE-Q650PAR36/1	22
	4545	24		CSR400/SE/HR/75	28		DYR	12
	4591	22	420	EKB-Q420/4CL/2PP	11		EKD-Q650/3CL/2PP	10
	4594	22		FFM	1		FAD-Q650T4/4CL	1
	4595	22	450	4541	24		FAY-Q650PAR36/3D	22
	4627	22		4580	23		FBE-Q650PAR36/5D	22
	4509X	22		4581	23		FBO-Q650PAR36/5	22
	4537-2	23		4635	23		FBX-Q650T4/4	1
110	F96T12/CINEMA32/HO	37		Q4554-12PK	23		FCM/HIR-Q650T3/4	4
	F96T12/CINEMA32/HO/CVG	38		Q4597-12PK	23		FCW-Q650PAR36/6	22
	F96T12/CINEMA55/HO	37		Q4681	23		FCX-Q650PAR36/7	22
	F96T12/CINEMA55/HO/CVG	38	500	500PAR64/MFL	25		FKB	19

WATTS	DESCRIPTION	TABLE
650 cont'd.	FKH	14
	FKR	8
	FRK-Q650T8	11
	FRM	11
	GCS	11
	T12	10
	T13	19
675	FFT/HIR-Q675T3/4	5
700	CSR700/2/SE	26
	CSR700/S/DE/60	30
	CSR700/S/DE/72	30
	CSR700/SA	27
	CSR700/SA/72	27
750	BTN-Q750T7/CL/2P	19
	BTP-Q750T7/4CL/2P	19
	EGF-Q750/4CL/P	20
	EGG-Q750CL/P	20
	EGR-Q750T7/4CL	14
	EHF-Q750/4CL	8
	EHG-Q750CL/TP	8
	EJG-Q750T3/4CL	4
	EMD-Q750T3/4	4
	GLD-Q750T6/4CL	8
	GLE-Q750T6/4CL	8
	HPL750	9
	HPL750/C 115V	9
	HPL750/LL/C	9
	HPL750-XLL-C	9
800	CSR800/SE/HR	29
	DXX	1
	EME-Q800T3/P2/11	4
	EMF-Q800T3/P2/11	4
	HX800	8
1000	99-0221CSI	34
	99-0222CID	34
	99-1225CID CS	35
	99-1425CID HR	35
	BRH	2
	BTR-Q1000T7/4CL/2P	19
	BVT-Q1000T7/CL/MP	21
	BVV-Q1000T7/4CL/MP	21
	CP24	10
	CP95/230V	25
	CP95/240V	25
	DSE/Q1000	18
	DXW-Q1000T5/4CL	2
	EGJ-Q1000/4/CL/P	20
	EGK-Q1000/4/P	20
	EGM-Q1000CL/P	20
	EGT-Q1000T7/4CL	14
	EJD-Q1000T3/3CL (185V)	4
	EKM-Q1MT3/4CLP2/7	6
	EXC-Q1MPAR64CP60	25
	EXC-Q1MPAR64CP60	25
	EXD-Q1MPAR64CP61	25
	EXD-Q1MPAR64CP61	25
	EXE-Q1MPAR64CP62	25
	EXG/PAR64/WFL230V	25
	EXG/PAR64/WFL240V	25
	FBY-Q1000T5/4	2
	FCM-Q1000T3/4CL	4
	FEL-Q1000/4CL	8
	FEP-Q1MT6/4CL	8
	FER-Q1000T6/4CL	3
	FFN-Q1000PAR64/1	25
	FFP-Q1000PAR64/2	25
	FFR-Q1000PAR64/5	25
	FFS-Q1000PAR64/6	25
	FFT-Q1000T3/1CL	5
	FHM-Q1000/T3/4	4
	FKD	19
	FKE	19

WATTS	DESCRIPTION	TABLE
1000 cont'd	FKJ	14
	FKN	19
	FVA	10
	FVB	10
	FWR	10
	Q1000PAR64/WFL	25
	Q1000PAR64MFL	25
	Q1000PAR64NSP	25
	Q1000T8/CL	10
	SPL1000/PAR64/840	35
	SPL1000/PAR64/HR	35
	T11	10
	T14	19
	T16	21
1200	99-1435 CID HR	35
	CP90	10
	CP93	14
	CSR1200/2/SE	26
	CSR1200/DE	30
	CSR1200/S/DE/60	30
	CSR1200/S/DE/60/STB	30
	CSR1200/S/DE/72	30
	CSR1200/SA	27
	CSR1200/SA/TAL	27
	CSR1200/SE/HR	28
	CSR1200/SE/HRUVC	29
	FWS	10
	FWT	10
	GFB-Q1200PAR64/2	25
	GFC-Q1200PAR64/1	25
	OC1200	14
1250	CP105-1250/650	17
	CP30-1250/1250	17
	CP58-1250/2500	17
	Q1250T3/P2/12	6
1500	CSR1500/S/DE/60	30
	CSR1500/SA	27
	CXZ-Q1500T10/4CL	15
	DKX/DSF-Q1500PS52/4	18
	DSF/Q1500	18
	DTA-Q1500T8/4CL	21
	FDB-Q1500T4/4CL	5
	FGT-Q1500T4/4	5
	MVR1500/HBU	34
	MVR1500/U/SPORTS	34
	SPL1500/H/652	34

WATTS	DESCRIPTION	TABLE
1650	MVR1650/HOR	34
1800	CSR18000/SE/HR	28
	CSR2000/SA	27
2000	BVW-Q2000T10/4CL/MP	21
	BWA-Q2000/4CL/BP	15
	BWF-Q2000/4CL	18
	CP53	21
	CP59	18
	CP79	13
	CP79	13
	CP92	14
	CYX-Q2000T10/4CL	15
	FEX-Q2MT8/4CL	3
	FEX-Q2MT8/4CL	3
	FEY-Q2000T8/4CL	3
	FKK	15
	FTL	13
	FTM	13
	MQI12000/T9/40	34
2500	CP32-2500/2500	17
	CP91	14
	CP94	15
	CSR2500/DE	30
	CSR2500/SE/HR	28
	CSR2500/SE/HRUVC	29
3000	HX48	15
4000	CSR4000/DE	30
	CSR4000/SE/HR	28
	CSR4000/SE/HRUVC	29
5000	CP29	15
	DPY-Q5000T20/4CL	15
	HX5000	15
	HX5000/240	15
6000	CSR6000/DE	30
	CSR6000/SE/HR	28
	CSR6000/SE/HRUVC	29
10000	CP83	15
	DTY-Q10M/T24/4CL	15
12000	CSR12000/DE	30
	CSR12000/SE/HR	28
	Q12MT26/4CL	16
18000	CSR18000/DE	30
	CSR18000/S/DE	30
20000	BCM-Q20MT32/4CL	16
24000	Q24MT32/4CL	16



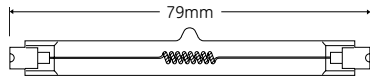


Fig. 1

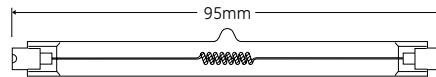


Fig. 2

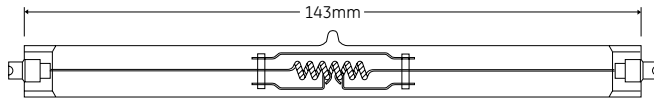


Fig. 3

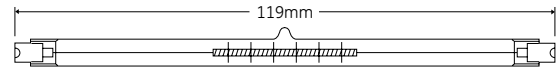


Fig. 4

WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	BULB TYPE/OD	LUMENS	COLOR TEMP (K°)	LIFE (HOURS)	FILAMENT TYPE	COIL LENGTH (MM)	MOL (MM)	BURNING POSITION	FROSTED	FOOTNOTES & CAUTIONS	FIG NO.
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HALOGEN, LINEAR LAMP, COMPACT COIL (CC-8)

table 1 | halogen, linear lamp compact coil (CC-8), R7s base, 80mm (3-1/8") MOL

300	120	Q300T4/CL	EHP		43705		6	T-4	5650	2900	2000	CC-8	18	80	Any		62	1
375	30	DWZ(30V)	DWZ	A1/266	29578		24	T-4	7500	3000	1000	CC-8	10	80	Any		62	1
420	120	FFM	FFM		30276		24	T-4	11000	3200	75	CC-8	13	80	Any		62	1
650	120	FAD-Q650T4/4CL	FAD	P2/6	30325		24	T-4	16500	3200	100	CC-8	17	80	Any		62	1
650	120	FBX-Q650T4/4	FBX	P2/6	30343		24	T-4	16500	3200	100	CC-8		80	Any	•	62,15	1
800	230	DXX	DXX	P2/13	36952		24	T-4	21400	3200	75	CC-8	24	80	Any		62	1
800	240	DXX	DXX	P2/13	36953		24	T-4	21400	3200	75	CC-8	24	80	Any		62	1

table 2 | halogen, linear lamp, compact coil (CC-8), R7s base, 95mm (3-3/4") MOL

600	120	FCB	FCB	A1/228	29598		24	T-4	17000	3250	75	CC-8	17	95	Any		62,4	2
1000	120	DXW-Q1000T5/4CL	DXW		30157		24	T-5	28000	3200	150	CC-8	22	95	Any		62,27	2
1000	120	FBY-Q1000T5/4	FBY		30374		24	T-5	26000	3200	150	CC-8		95	Any	•	62,15	2
1000	120	BRH	BRH		29604		24	T-5	30000	3350	75	CC-8	19	95	Any		62	2

table 3 | halogen, linear lamp, compact coil (CC-8), R7s base, 143mm (5-5/8") MOL

1000	120	FER-Q1000T6/4CL	FER		33760		6	T-6	27500	3200	500	CC-8	19	143	Any		62	3
2000	230	FEX-Q2MT8/4CL	FEX	P2/27	88482		12	T-10	50000	3200	300	CC-8	37	143	H4		62	3
2000	240	FEX-Q2MT8/4CL	FEX	P2/27	88481		12	T-10	50000	3200	300	CC-8	37	143	H4		62	3
2000	120	FEY-Q2000T8/4CL	FEY	P2/27	88629		12	T-10	57000	3200	400	CC-8	25	143	H4		62	3

HALOGEN, LINEAR LAMP, STANDARD COIL

table 4 | halogen, linear lamp, standard coil (C-8), R7s base, 119mm (4-11/16") MOL

300	120	Q300T3/CL	EHM		43703		6	T-3	5950	2950	2000	C-8	59	119	H4		62	4
350	120	FDH/HIR-Q350T2/4CL			20881		6	T-2	13250	3200	400	C-8	60	119	H4		62	4
350	120	Q350T3/HIR			13894		6	T-3	10000	3000	2000	C-8	56	119	H4		62	4
500	130	Q500T3/CL	DVS		23733		12	T-3	10550	3000	2000	C-8	62	119	H4		62	4
500	120	Q500T3/CL	FCL		23731		12	T-3	11100	3000	2000	C-8	57	119	H4		62	4
500	120	Q500T3/CL/6			23744		12	T-3	10950	2950	1500	C-8	60	119	H4		62	4
500	120	FDH-Q500T3/4CL	FDH	P2/30	23735		12	T-3	13250	3200	400	C-8	60	119	H4		62	4
500	120	FDN-Q500T3/4	FDN	P2/31	23734		12	T-3	12800	3200	400	C-8		119	H4	•	62,15	4
650	120	FCM/HIR-Q650T3/4	FCM	-	13895		6	T-3	25200	3275	400	C-8	60	119	H4		62,52	4
750	120	EJG-Q750T3/4CL	EJG	-	23756		12	T-3	20600	3200	400	C-8	62	119	H4		62	4
750	120	EMD-Q750T3/4	EMD	-	23755		12	T-3	19500	3200	400	C-8		119	H4	•	62,15	4
800	240	EME-Q800T3/P2/11	EME	P2/11	23760		12	T-3	22000	3200	150	C-8	64	119	H4		62	4
800	240	EMF-Q800T3/P2/11	EMF	P2/11	23761		12	T-3	21400	3200	150	C-8		119	H4	•	62	4
1000	120	FCM-Q1000T3/4CL	FCM	P2/28	23797		12	T-3	28000	3200	400	C-8	60	119	H4		62	4
1000	120	FHM-Q1000/T3/4	FHM	P2/29	23792		12	T-3	27300	3200	400	C-8		119	H4	•	62,15,31	4
1000	185	EJD-Q1000T3/3CL (185V)	EJD	-	23788		12	T-3	33600	3350	100	C-8	68	119	H4		62,52	4

LAMP STOCKING COLOR CODE: EUROPE ONLY, EUROPE & NORTH AMERICA, NORTH AMERICA ONLY

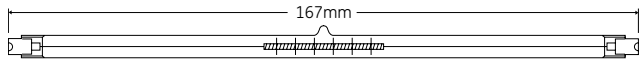


Fig. 5

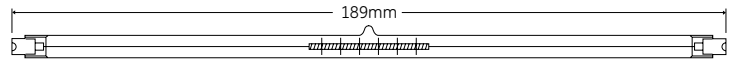


Fig. 6

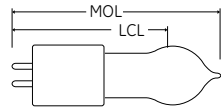


Fig. 7

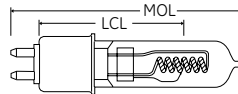


Fig. 8

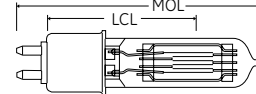


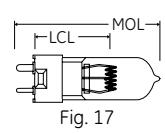
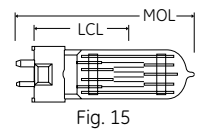
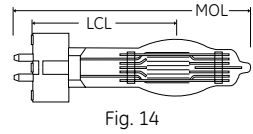
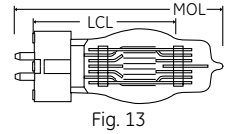
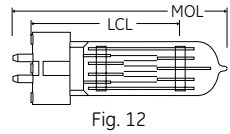
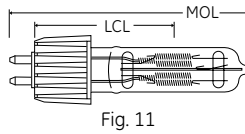
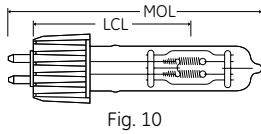
Fig. 9

WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	BULB TYPE/OD	LUMENS	COLOR TEMP (K°)	LIFE (HOURS)	FILAMENT TYPE	COIL LENGTH (MM)	MOL (MM)	BURNING POSITION	FROSTED	FOOTNOTES & CAUTIONS	FIG NO.
table 5 halogen, linear lamp, standard coil (C-8), R7s base, 167mm (6-9/16") MOL																		
675	120	FFT/HIR-Q675T3/4	-	-	20884		6	T-3	26400	3250	400	C-8	67	167	H4		62,52	5
1000	120	FFT-Q1000T3/1CL	FFT	-	33280		12	T-3	26400	3200	400	C-8	67	167	H4		62	5
1500	120	FDB-Q1500T4/4CL	FDB	-	23841		12	T-4	41250	3200	400	C-8	62	167	H4		62	5
1500	120	FGT-Q1500T4/4	FGT	-	41229		12	T-4	40200	3200	400	C-8		167	H4	•	62,15	5
table 6 halogen, linear lamp, standard coil (C-8), R7s base, 189mm (7-7/16") MOL																		
625	230	Q625T3/4CLP2/10		P2/10	19697		12	T-3	16900	3200	300	C-8	107	189	H4		62	6
625	240	Q625T3/4CLP2/10		P2/10	19698		12	T-3	16900	3200	300	C-8	107	189	H4		62	6
1000	230	EKM-Q1MT3/4CLP2/7	EKM	P2/7	20249		12	T-3	28000	3200	300	C-8	115	189	H4		62	6
1000	240	EKM-Q1MT3/4CLP2/7	EKM	P2/7	20253		12	T-3	28000	3200	300	C-8	115	189	H4		62	6
1250	230	Q1250T3/P2/12		P2/12	19695		12	T-3	35000	3200	300	C-8	112	189	H4		62	6
1250	240	Q1250T3/P2/12		P2/12	19696		12	T-3	35000	3200	300	C-8	112	189	H4		62	6

HALOGEN, SINGLE-ENDED, BY BASE TYPE

table 7 halogen, single-ended, G5.3 miniature 2-pin base (pins 5.3mm apart)																		
30	10.8	DZA	DZA		37346		24	T-3.5	530	3100	400	C-6	27	51	BDTHCH		62	
250	120	EYH/FKT	EYH		13617		24	G-6	6000	3000	200	CC-6	36	64	BDTHCH		62	7
500	120	FBG/FBD	FBG		33663		24	G-6	13200	3200	50	CC-6	44	76	ANYCH		62	7
600	120	DYH	DYH		30364		24	G-7	17000	3200	75	CC-6	36	64	ANYCH		62	7
650	120	DVY	DVY		30304		24	G-6	20000	3300	25	CC-6	36	64	BDTHCH		62	7

table 8 halogen, single-ended, G9.5 medium 2-pin base (pins 9.5mm apart)																		
500	120	EHD-Q500CL/TP	EHD		88624		24	T-6	10000	2900	2000	CC-8	60	105	Any		62	8
500	120	EHC-Q500/5CL	EHC		39789*	88628	24	T-6	12700	3150	500	CC-8	60	105	Any		62	8
575	115	FLK-Q575T6	FLK		88548		24	T-6	16500	3200	300	CC-8	60	105	Any		62	8
575	115	FLK/LL-Q575T6			39730*	88452	24	T-6	12800	3100	1500	CC-8	60	105	Any		62	8
575	115	GLA-Q575T6/4CL	GLA		93428*	88424	24	T-6	13000	3050	1500	C-13D	60	105	Any		62	9
575	115	GLC-Q575T6/5CL	GLC		88423		24	T-6	14500	3200	300	C-13D	60	105	Any		62	9
600	230	GKV-Q575T6/4CL	GKV		88448		24	T-6	14000	3200	250	C-13D	60	105	Any		62	9
600	240	GKV	GKV		88447		24	T-6	14000	3200	250	C-13D	60	105	Any		62	9
600	230	GKV/LL	GKV		88446		24	T-6	11000	3000	1500	C-13D	60	105	Any		62	9
600	240	GKV/LL	GKV		88445		24	T-6	11000	3000	1500	C-13D	60	105	Any		62	9
650	230	FKR	FKR		39734	88450	24	T-6	15000	3100	300	C-13D	60	105	Any		62	9
650	240	FKR	FKR		88450		24	T-6	15000	3100	300	C-13D	60	105	Any		62	9
750	120	EHG-Q750CL/TP	EHG		39770	88626	24	T-6	15000	3000	2000	CC-8	60	105	Any		62	8
750	120	EHF-Q750/4CL	EHF		88627		24	T-6	20000	3200	300	CC-8	60	105	Any		62	8
750	115	GLD-Q750T6/4CL	GLD		88427		24	T-6	19000	3200	300	C-13D	60	105	Any		62	9
750	115	GLE-Q750T6/4CL	GLE		92773	88426	24	T-6	17400	3050	1500	C-13D	60	105	Any		62	9
800	230	HX800		HX800	39753	88432	24	T-6	20000	3200	250	C-13D	60	105	Any		62	9
800	240	HX800		HX800	88432		24	T-6	20000	3200	250	C-13D	60	105	Any		62	9
1000	120	FEL-Q1000/4CL	FEL	CP77	88625		24	T-6	27500	3200	300	CC-8	60	105	Any		62,22	8
1000	240	FEP-Q1MT6/4CL	FEP	CP77	88449		24	T-6	25000	3200	300	CC-8	60	105	Any		62	8



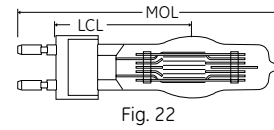
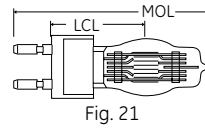
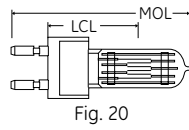
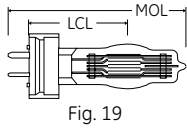
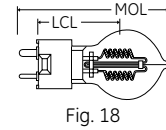
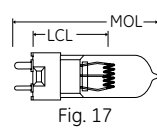
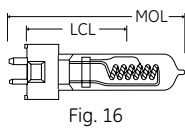
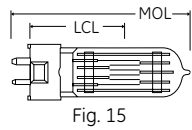
WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	BULB TYPE/OD	LUMENS	COLOR TEMP (K ^o)	LIFE (HOURS)	FILAMENT TYPE	COIL LENGTH (MM)	MOL (MM)	BURNING POSITION	FROSTED	FOOTNOTES & CAUTIONS	FIG NO.
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table 9 halogen, single-ended, high performance, G9.5/heat sink metal 2-pin base																		
375	115	HPL375/C 115V			17608*	88540	12	T-6	10540	3250	300	4-C8	60	106	Any		62	10
375	115	HPL375/LL/C 115V			88539		12	T-6	8000	3050	1000	4-C8	60	106	Any		62	10
550	77	HPL550/C 77V			88534		12	T-6	16170	3250	300	4-C8	60	106	Any		62	10
575	115	HPL575/C 115V			92431**	88438	12	T-6	16500	3200	300	4-C8	60	106	Any		62	10
575	120	HPL575/C 120V			92433*	88436	12	T-6	16520	3200	300	4-C8	60	106	Any		62	10
575	115	HPL575/LL/C 115V			88435		12	T-6	12360	3050	2000	4-C8	60	106	Any		62	10
575	120	HPL575/LL/C 120V			92435*	88434	12	T-6	12360	3050	2000	4-C8	60	106	Any		62	10
575	230	HPL575			37128*	88478	12	T-6	14900	3200	300	6-C8	60	106	Any		62	11
575	240	HPL575			88477		12	T-6	14900	3200	300	6-C8	60	106	Any		62	11
575	230	HPL575-X LL			37817	88476	12	T-6	11780	3050	1500	6-C8	60	106	Any		62	11
575	240	HPL575-X LL			37818	88475	12	T-6	11780	3050	1500	6-C8	60	106	Any		62	11
750	115	HPL750/C 115V			88437		12	T-6	22000	3200	300	4-C8	60	106	Any		62,7	10
750	115	HPL750/LL/C			88428		12	T-6	16400	3050	2000	4-C8	60	106	Any		62,7	10
750	230	HPL750			88474		12	T-6	19750	3200	300	6-C8	60	106	Any		62,7	11
750	240	HPL750			88473		12	T-6	19750	3200	300	6-C8	60	106	Any		62,7	11
750	230	HPL750-XLL-C			92768	88430	12	T-6	15600	3050	1500	6-C8	60	106	Any		62,7	11
750	240	HPL750-XLL-C			88429		12	T-6	15600	3050	1500	6-C8	60	106	Any		62,7	11

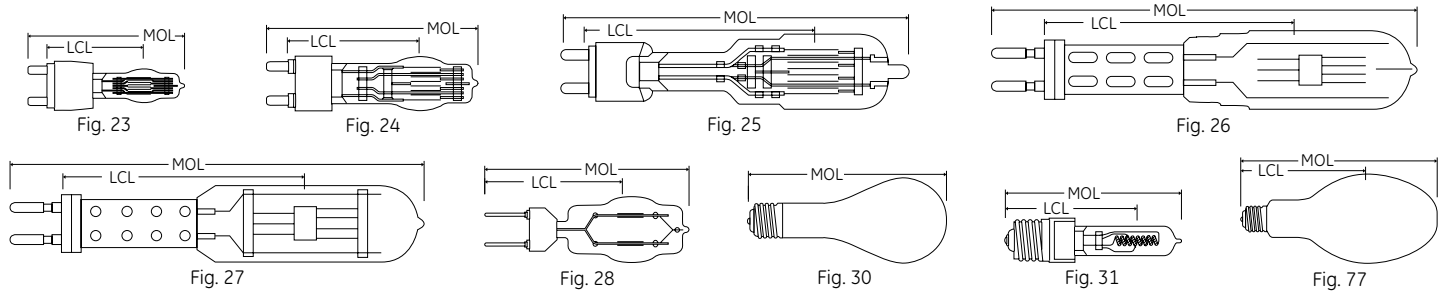
table 10 halogen, single-ended, GX9.5 prefocus medium 2-pin base																		
650	120	EKD-Q650/3CL/2PP	EKD		34328		24	G-6	20000	3300	25	CC-6	37	64	BDTHCH		62	
650	230	T12		T12	39661	88431	12	T-8	13500	3000	750	C-13	55	110	BDTH		62	12
650	240	T12		T12	88431		12	T-8	13500	3000	750	C-13	55	110	BDTH		62	12
650	230	CP23		CP23	39654	72680	12	T-8	16900	3200	100	C-13	55	110	BDTH		62	12
650	240	CP23		CP23	88455		12	T-8	16900	3200	100	C-13	55	110	BDTH		62	12
1000	240	CP24		CP24	88459		12	G-11	26000	3200	200v	C-13	55	110	BDTH		62	13
1000	120	Q1000T8/CL		T11	88515		24	G-11	23500	3050	750	C-13	55	110	BDTH		62	13
1000	240	T11		T11	88456		12	G-11	23000	3050	750	C-13	55	110	BDTH		62	13
1000	240	FWR	FWR	T19	88457		12	T-11	21000	3050	750	C-13D	55	110	BDTH		62	12
1000	230	FVA	FVA	CP70	88472		12	T-11	25000	3200	200	C-13D	55	110	BDTH		62	12
1000	240	FVB	FVB	CP70	88471		12	T-11	25000	3200	200	C-13D	55	110	BDTH		62	12
1200	230	FWS	FWS	T29	39723	88454	12	G-11	29000	3050	400	C-13D	67	125	BDTH		62	14
1200	240	FWT	FWT	T29	88454		12	G-11	29000	3050	400	C-13D	67	125	BDTH		62	14
1200	240	CP90		CP90	88453		12	G-11	33000	3200	200	C-13D	67	125	BDTH		62	14

table 11 halogen, single-ended, GY9.5 oriented 2-pin base (2 OD pins)																		
300	120	FKW-Q300T8	FKW	CP81	88443		24	T-8	6900	3200	50	C-13	46	90	BDTH		62	15
300	230	FSL	FSL	CP81	88433		24	T-8	6900	3200	150	C-13	46	90	BDTH		62	15
300	240	FSK	FSK	CP81	88444		24	T-8	6900	3200	150	C-13	46	90	BDTH		62	15
420	120	EKB-Q420/4CL/2PP	EKB		33934		24	G-7	11000	3200	75	CC-6	37	64	ANVCH		62	17
500	120	FRG-Q500T8	FRG	CP82	88467		24	T-8	13000	3200	150	C-13	46	90	BDTH		62	15
500	230	FRH	FRH	CP82	88466		24	T-8	12500	3200	150	C-13	46	90	BDTH		62	15
500	240	FRJ	FRJ	CP82	88464		24	T-8	12500	3200	150	C-13	46	90	BDTH		62	15
500	230	GCV	GCV	T18	39717	88465	24	T-8	11000	3050	400	C-13	46	90	BDTH		62	15

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WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	BULB TYPE/OD	LUMENS	COLOR TEMP (K°)	LIFE (HOURS)	FILAMENT TYPE	COIL LENGTH (MM)	MOL (MM)	BURNING POSITION	FROSTED	FOOTNOTES & CAUTIONS	FIG NO.
table 11 halogen, single-ended, GY9.5 oriented 2-pin base (2 OD pins) (continued)																		
500	240	GCW	GCW	T18	88465		24	T-8	11000	3050	400	C-13	46	90	BDTH		62	15
500	230	GCV	GCV	T25	39455	88470	24	T-8	11000	3000	360	C-13D	46	90	BDTH		62	15
500	240	GCW	GCW	T25	88470		24	T-8	11000	3000	360	C-13D	46	90	BDTH		62	15
600	120	FMR-Q600T5	FMR		30475	88504	24	T-5	12600	3050	2000	CC-8	51	85	BDTHCH		62	16
650	240	GCS	GCS	T27	88469		24	T-8	14500	3050	400	C-13D	46	90	BDTH		62	15
650	240	GCS	GCS	T26	88463		24	T-8	15500	3100	400	C-13	46	90	BDTH		62	15
650	120	FRK-Q650T8	FRK	CP89	39637**	88462	24	T-8	16900	3200	200	C-13	46	90	BDTH		62	15
650	240	FRM	FRM	CP89	88461		24	T-8	16250	3200	150	C-13	46	90	BDTH		62	15
table 12 halogen, single-ended, GZ9.5 oriented 2-pin base (2 OD pins)																		
235	33	Q235T4/3			11548		12	T-4	6000	3125	150	CC-6	39	64	BDTHCH	•	62	17
600	120	DYS/DYV/BHC	DYS	A1/264	32955		24	G-7	17000	3200	75	CC-6	37	64	BDTHCH		62	17
650	220	DYR	DYR	A1/233	26896		24	G-7	16500	3200	50	2CC-8	37	64	Any		62	18
650	240	DYR	DYR	A1/233	26895		24	G-7	16500	3200	50	2CC-8	37	64	Any		62	18
table 13 halogen, single-ended, GY16 2-pin prefocus base (pins 16mm apart)																		
2000	230	FTM	FTM	CP43	96735		12	G-13	54000	3200	400	C-13	70	145	BDTH		62	19
2000	240	FTL	FTL	CP43	88533		12	G-13	54000	3200	400	C-13	70	145	BDTH		62	19
2000	120	CP79		CP79	88440		12	G-13	54000	3200	350	C-13D	70	145	BDTH		62	19
2000	230	CP79		CP79	30497	88503	12	G-13	54000	3200	350	C-13D	70	145	BDTH		62	19
2000	240	CP79		CP79	88503		12	G-13	54000	3200	350	C-13D	70	145	BDTH		62	19
table 14 halogen, single-ended, G22 medium bi-post base (pins 22mm apart)																		
500	120	EGN-Q500T8	EGN		30373*	88509	12	T-8	13000	3200	150	C-13	64	140	BDTH		62	20
650	240	FKH	FKH	CP39	88531		12	T-8	16900	3200	100	C-13	64	140	BDTH		62	20
750	120	EGR-Q750T7/4CL	EGR		88621		12	T-7	21000	3200	200	C-13D	64	127	BDTH		62,1	20
1000	120	EGT-Q1000T7/4CL	EGT		88622		12	T-7	28500	3200	250	C-13D	64	127	BDTH		62,1	20
1000	230	FKJ	FKJ	CP40	88458		12	T-8	26000	3200	200	C-13	64	140	BDTH		62	20
1000	240	FKJ	FKJ	CP40	88538		12	T-8	26000	3200	200	C-13	64	140	BDTH		62	20
1200	80	OC1200			91580	88439	12	T-8	37500	3300	300	C-13D	64	140	BDTH		62	20
1200	240	CP93		CP93	88508		12	G-11	33000	3200	200	C-13D	64	140	BDTH		62	21
2000	120	CP92		CP92	30391	88507	12	G-13	55000	3200	400	C-13D	90	175	BDTH		62	22
2000	240	CP92		CP92	88506		12	G-13	52000	3200	400	C-13D	90	175	BDTH		62	22
2500	240	CP91		CP91	88505		12	G-13	67500	3200	400	C-13D	90	175	BDTH		62	22



WATTS DESIGN VOLTS GE DESCRIPTION ANSI CODE LIF CODE ORDER CODE FUTURE CODE PACK QTY. BULB TYPE/OD LUMENS COLOR TEMP (K) LIFE (HOURS) FILAMENT TYPE COIL LENGTH (MM) MOL (MM) BURNING POSITION FROSTED FOOTNOTES & CAUTIONS FIG NO.

table 15 | halogen, single-ended, G38 mogul bi-post base (pins 38mm apart)

1000	120	CYV-Q1000T7/4CL/BP	CYV		88630		6	T-7	28500	3200	200	C-13D	127	203	BDTH		62,1	23
1500	120	CXZ-Q1500T10/4CL	CXZ		88612		6	T-10	44500	3200	400	C-13	127	216	BDTH		62,1	23
2000	120	CYX-Q2000T10/4CL	CYX		36636*	88610	6	T-10	59000	3200	350	C-13	127	216	BDTH		62,1	23
2000	230	FKK	FKK	CP41	31844	88489	12	G-10	54000	3200	400	C-13	127	216	BDTH		62	23
2000	240	FKK	FKK	CP41	88488		12	G-10	54000	3200	400	C-13	127	216	BDTH		62	23
2000	120	BWA-Q2000/4CL/BP	BWA		88623		6	T-8	54000	3200	500	CC-8	127	210	BDTH		62,1,55	23
2500	240	CP94		CP94	30500	88502	12	G-13	67500	3200	400	C-13D	127	210	BDTH		62	23
3000	240	HX48		HX48	30504	88874	12	G-15	82000	3200	400	C-13	127	210	BD45		62	23
5000	120	DPY-Q5000T20/4CL	DPY	CP29	41736		6	T-20	143000	3200	500	C-13	165	279	BD45		62,1	24
5000	230	CP29		CP29	30505	88875	12	G-20	135000	3200	500	C-13	165	279	BDTH		62	24
5000	240	CP29		CP29	88876		12	G-20	135000	3200	500	C-13	165	279	BDTH		62	24
5000	120	HX5000			22959		6	T-20	147000	3200	250	C-8	165	279	Any		62	24
5000	240	HX5000/240			71379		6	T-20	133000	3200	250	C-8	165	279	Any		62	24
10000	120	DTY-Q10M/T24/4CL	DTY	-	24886		4	T-24	290000	3200	300	C-13	254	400	BD45		62,1	25
10000	220	CP83		CP83	12036		1	T-27	280000	3200	250	C-13	254	405	BDTH		62	25
10000	240	CP83		CP83	12037		1	T-27	280000	3200	250	C-13	254	405	BDTH		62	25

table 16 | halogen, single-ended, GX38 mogul bi-post base (pins 38mm apart)

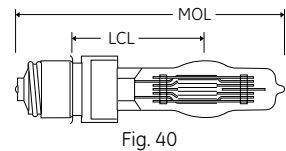
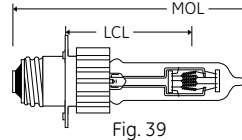
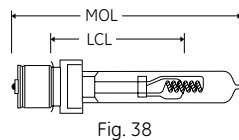
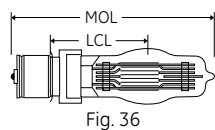
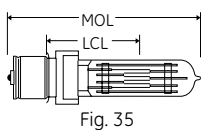
12000	120	Q12MT26/4CL			48770		1	T-26	420000	3400	150	C-13	85	410	BD45		62	26
12000	230	Q12MT26/4CL			48771		1	T-26	420000	3400	130	C-13	85	410	BD45		62	26
12000	240	Q12MT26/4CL			48779		1	T-26	420000	3400	130	C-13	85	410	BD45		62	26
20000	208	BCM-Q20MT32/4CL	BCM		48772		1	T-32	580000	3200	400	C-13	103	560	BD45		62	27
20000	220	BCM-Q20MT32/4CL	BCM		48773		1	T-32	580000	3200	400	C-13	103	560	BD45		62	27
20000	240	BCM-Q20MT32/4CL	BCM		48774		1	T-32	580000	3200	400	C-13	103	560	BD45		62	27
24000	220	Q24MT32/4CL			48776		1	T-32	800000	3400	150	C-13	103	560	BD45		62	27
24000	240	Q24MT32/4CL			48777		1	T-32	800000	3400	150	C-13	103	560	BD45		62	27

table 17 | halogen, single-ended, 2-filament, GX38Q high volt base

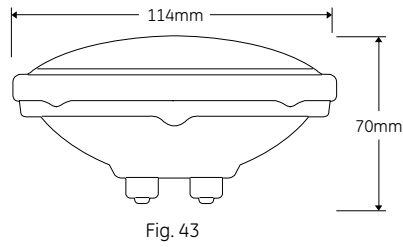
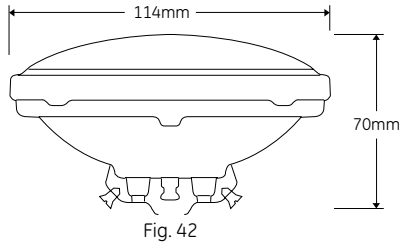
1250	240	CP105-1250/650		CP105	34024	88880	1	G-18	27M/13M	3050	250	2C-13	143	220	BD45		62	28
1250	240	CP30-1250/1250		CP30	88877		1	G-18	27M/56M	3200	300	2C-13	143	220	BD45		62	28
1250	240	CP58-1250/2500		CP58	88878		1	G-22	27M/91M	3200	300	2C-13	143	220	BD45		62	28
2500	230	CP32-2500/2500		CP32	30518	88879	1	G-22	59M/127M	3200	300	2C-13	143	220	BD45		62	28
2500	240	CP32-2500/2500		CP32	30519	88879	1	G-22	59M/127M	3200	300	2C-13	143	220	BD45		62	28

table 18 | halogen, single-ended, E40 mogul screw base

1000	120	DKZ/DSE-Q1000PS52/4	DKZ	-	39582		12	PS-52	28000	3200	750	CC-8	241	330	Any	•	1,62,51	30
1000	120	DSE/Q1000	DSE		19926		10	ED-37	28000	3200	750	CC-8	241	330	Any	•	1,62	77
1500	120	DKX/DSF-Q1500PS52/4	DKX	-	40357		12	PS-52	41000	3200	1000	C-8	241	330	Any	•	1,62,51	30
1500	120	DSF/Q1500	DSF		19927		10	ED-37	41000	3200	1000	CC-8	241	330	Any	•	1,62	77
2000	120	BWF-Q2000/4CL	BWF	-	37086*	88611	6	T-8	54000	3200	500	CC-8	133	191	Any		62	31
2000	240	CP59		CP59	29426	88512	12	T-10	50000	3200	300	CC-8	133	191	Any		62	31



WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	BULB TYPE/OD	LUMENS	COLOR TEMP (K°)	LIFE (HOURS)	FLAMENT TYPE	COIL LENGTH (MM)	MOL (MM)	BURNING POSITION	FROSTED	FOOTNOTES & CAUTIONS	FIG NO.
table 19 halogen/incandescent, single-ended, P28s medium prefocus base, with grid coil																		
500	120	BTL-Q500T6/CL/P	BTL	T17	11966*	88547	12	T-6	11000	3000	500	C-13	55	133	BDTH		62	35
500	120	BTM-Q500T6/4CL/2P	BTM	-	16465	88546	12	T-6	13000	3200	150	C-13	55	130	BDTH		62	35
500	230	FKF	FKF	T17	30535	88498	12	T-6	9500	2950	750	C-13	55	130	BDTH		62	35
500	240	T17		T17	88498		12	T-6	9500	2950	750	C-13	55	130	BDTH		62	35
500	230	T28		T28	39731	88451	12	T-6	11000	3000	300	C-13	55	130	BDTH		62	35
500	240	T28		T28	88451		12	T-6	11000	3000	300	C-13	55	130	BDTH		62	35
650	230	FKB	FKB	T13	30541	88497	12	T-8	13500	3000	750	C-13	55	130	BDTH		62	35
650	240	T13		T13	88497		12	T-8	13500	3000	750	C-13	55	130	BDTH		62	35
650	240	CP51		CP51	20324	88530	12	T-8	16900	3200	200	C-13	55	130	BDTH		62	35
750	120	BTN-Q750T7/CL/2P	BTN	-	88605		12	T-7	17600	3050	500	C-13D	55	121	BD30		62,1	35
750	120	BTP-Q750T7/4CL/2P	BTP	-	11954*	88606	12	T-7	21000	3200	200	C-13D	55	121	BD30		62,1	35
1000	120	BTR-Q1000T7/4CL/2P	BTR	-	11955*	88607	12	T-7	28500	3200	250	C-13D	55	121	BD30		62,1	35
1000	230	FKD	FKD	T14	20385	88529	12	G-11	23000	3050	750	C-13D	55	130	BDTH		62	36
1000	240	T14		T14	88529		12	G-11	23000	3050	750	C-13D	55	130	BDTH		62	36
1000	240	FKN	FKN	CP52	88496		12	G-11	26000	3200	200	C-13D	55	121	BDTH		62	36
1000	240	FKE	FKE	T15	88499		12	G-11	23000	3050	750	C-13	89	160	BDTH		62	36
table 20 halogen, single-ended, P28s medium prefocus base with CC8 coil																		
500	120	EGE-Q500CL/P	EGE	-	39135*	88617	12	T-4	10450	2950	2000	CC-8	89	152	Any		62	38
750	120	EGG-Q750CL/P	EGG	-	88619		12	T-6	15750	3000	2000	CC-8	89	152	Any		62	38
750	120	EGF-Q750/4CL/P	EGF	-	88618		12	T-6	20400	3200	300	CC-8	89	152	Any		62	38
1000	120	EGJ-Q1000/4/CL/P	EGJ	-	38853*	88615	12	T-6	27500	3200	300	CC-8	89	152	Any		62	38
1000	120	EGK-Q1000/4/P	EGK	-	38852*	88614	12	T-6	26500	3200	300	CC-8	89	152	Any		62	38
1000	120	EGM-Q1000CL/P	EGM	-	88620		12	T-6	21500	3000	2000	CC-8	89	152	Any		62	38
table 21 halogen, single-ended, P40 mogul prefocus base																		
1000	120	BVT-Q1000T7/CL/MP	BVT	-	12554*	88608	6	T-7	24500	3050	500	C-13D	100	184	BDTH		62,1	39
1000	120	BVV-Q1000T7/4CL/MP	BVV	-	88631		6	T-7	28500	3200	200	C-13D	100	184	BDTH		62,1	39
1000	240	T16		T16	30521	88501	12	G-11	23000	3050	750	C-13	87	180	BDTH		62	40
1500	120	DTA-Q1500T8/4CL	DTA	-	30522*	88500	6	T-8	41000	3200	300	C-13D	87	200	BDTH		62	39
2000	120	BVW-Q2000T10/4CL/MP	BVW	CP53	88609		6	T-10	59000	3200	350	C-13	100	215	BDTH		62	39
2000	230	CP53		CP53	20311	88532	12	G-13	54000	3200	400	C-13	87	200	BDTH		62	40
2000	240	CP53		CP53	88532		12	G-13	54000	3200	400	C-13	87	200	BDTH		62	40



WATTS DESIGN VOLTS GE DESCRIPTION ANSI CODE LIF CODE ORDER CODE FUTURE CODE PACK QTY. TYPE-BASE MOL (MM) APPROX. CBCP BEAM SPREAD 10% (deg. H x V) BEAM SPREAD 50% (deg. H x V) BEAM TYPE COLOR TEMP (K°) RATED LIFE (HRS) BURNING POSITION FOOTNOTES & CAUTIONS FIG NO.

HALOGEN AND INCANDESCENT REFLECTOR BY PAR SIZE

table 22 | par 36 (4.5" / 114mm) sealed beams

WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	TYPE-BASE	MOL (MM)	APPROX. CBCP	BEAM SPREAD 10% (deg. H x V)	BEAM SPREAD 50% (deg. H x V)	BEAM TYPE	COLOR TEMP (K°)	RATED LIFE (HRS)	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
2	4.7	4546			24780		12	Scr. Term.	70	6300	3 x 3		VNSP		100	Any		42
6	4.75	4547			24788		12	Scr. Term.	70	20000	3 x 3		VNSP		100	Any		42
25	6	25PAR36			14553		12	Scr. Term.	70	19700		5 x 5	VNSP	3000	1000	Any	12	42
25	12	25PAR36/NSP			14554		12	Scr. Term.	70	2600		9 x 9	NSP		2000	Any	12	42
25	12	25PAR36WFL			14555		12	Scr. Term.	70	360	49 x 41	37 x 26	WFL		2000	Any	12	42
25	12	25PAR36VWFL			14556		12	Scr. Term.	70	160		55 x 55	VWFL		2000	Any	12	42
30	6.2	4511			24663		12	Scr. Term.	70	2300					300	Any		42
30	6.2	4516			24678		12	Scr. Term.	70	45000	9 x 4		NSP		300	Any		42
30	6.4	H4515			15133		12	Scr. Term.	70	67000	5.5 x 4		VNSP		100	Any	12,307	42
30	6.4	4515			24673		12	Scr. Term.	70	55000	5 x 5		VNSP		100	Any	12	42
30	12.8	H4405			15129		12	Scr. Term.	70	66000	7 x 4		VNSP		100	Any	12,307	42
30	12.8	4405			24425		12	Scr. Term.	70	50000	6 x 5		VNSP		100	Any	12	42
35	12	35PAR36/H/SP5			19873		12	Scr. Term.	70	25000		5 x 5	VNSP	3050	4000	Any	307	42
35	12	35PAR36/H/SP8			19876		12	Scr. Term.	70	8000		8 x 8	NSP	3050	4000	Any	307	42
35	12	35PAR36/H/FL30			19877		12	Scr. Term.	70	900		30 x 30	WFL	3050	4000	Any	307	42
35	12	35PAR36/H/VWFL			42072		12	Scr. Term.	70			55 x 55	VWFL	3050	4000	Any	307	42
37.5	12.8	H7616			42838		12	Scr. Term.	70	70000	7 x 4		VNSP		300	Any	307	42
50	12	50PAR36WFL/4			11468		12	Scr. Term.	70	720	48 x 41	37 x 27	WFL		4000	Any	12	42
50	12	50PAR36VNSP			12892		12	Scr. Term.	70	19000		6 x 6	VNSP		2000	Any	12	42
50	12	50PAR36/NSP			16540		12	Scr. Term.	70	11000		10 x 10	NSP		2000	Any	12	42
50	12	50PAR36WFL			16541		12	Scr. Term.	70	900	48 x 41	36 x 28	WFL		2000	Any	12	42
50	12	50PAR36VWFL			16542		12	Scr. Term.	70	600		55 x 55	VWFL		2000	Any	12	42
50	12	50PAR36/H/SP5			19878		12	Scr. Term.	70	39000		5 x 5	VNSP	3050	4000	Any	307	42
50	12	50PAR36/H/SP8			19879		12	Scr. Term.	70	10000		8 x 8	NSP	3050	4000	Any	307	42
50	12	50PAR36/H/FL30			19880		12	Scr. Term.	70	1300		30 x 30	WFL	3050	4000	Any	307	42
50	12.8	H7604			43576		12	Scr. Term.	70	100000	7 x 5		NSP		100	Any	307	42
50	28	4502			24627		12	Scr. Term.	70	10000	40 x 7		WFL		400	Any		42
50	28	4505			24640		12	Scr. Term.	70	45000	11 x 5		NSP		400	Any		42
50	28	4593			24887		12	Scr. Term.	70	1500	80 x 30		VWFL		400	Any		42
100	13	4509			24650		12	Scr. Term.	70	110000	12 x 6		NSP		25	Any		42
100	13	4509X			41503		12	Scr. Term.	70	110000	12 x 6		NSP		25	Any	12	42
100	28	4591			24882		12	Scr. Term.	70	90000	12 x 6		NSP		25	Any		42
100	28	4594			24891		12	Scr. Term.	70	70000	13 x 7		NSP		300	Any		42
100	28	4595			24892		12	Scr. Term.	70	60000	14 x 6		NSP		300	Any		42
100	28	4627			24966		12	Scr. Term.	70	3000	80 x 30		VWFL		300	Any		42
150	28	4626			24964		12	Scr. Term.	70	25000	40 x 9		WFL		300	Any		42
250	28	4587			24867		12	Scr. Term.	70	40000	40 x 13		WFL		25	Any		42
250	28	4596			24898		12	Scr. Term.	70	150000	11 x 12		NSP		25	Any		42
650	120	FAY-Q650PAR36/3D	FAY		41668		12	Ferrule	70	36000		25 X 15	SP	5000	30	H15	63	43
650	120	FCW-Q650PAR36/6	FCW		41672		12	Ferrule	70	9000		60 X 55	FL	3200	100	H15	63	43
650	120	FCX-Q650PAR36/7	FCX		41673		12	Ferrule	70	24000		40 X 30	MFL	3200	100	H15	63	43
650	120	DWE-Q650PAR36/1	DWE		41667		12	Scr. Term.	70	24000		40 X 30	MFL	3200	100	H15	63	42

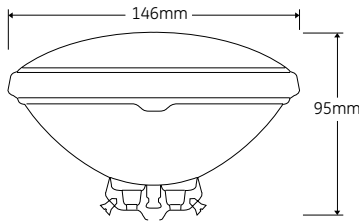


Fig. 44

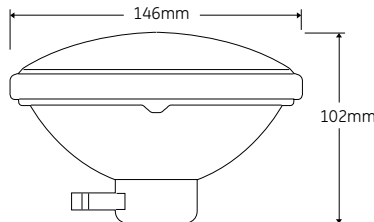


Fig. 45

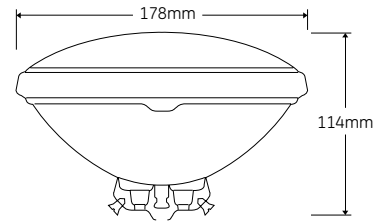


Fig. 46

WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	TYPE-BASE	MDL (MM)	APPROX. CBCP	BEAM SPREAD 10% (deg. H x V)	BEAM SPREAD 50% (deg. H x V)	BEAM TYPE	COLOR TEMP (K ^o)	RATED LIFE (HRS)	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
table 22 par 36 (4.5" /114mm) sealed beams (continued)																		
650	120	FBE-Q650PAR36/5D	FBE		41669		12	Scr. Term.	70	36000		25 X 15	SP	5000	30	H15	63	42
650	120	FBO-Q650PAR36/5	FBO		41671		12	Scr. Term.	70	67000		25 X 15	SP	3400	30	H15	63	42
table 23 par 46 (5.75"/146mm) sealed beams																		
25	6	25PAR46			14562		12	Scr. Term	95	55000		5.5 x 4.5	VNSP		1000	Any	12	44
30	6.4	4535			24735		12	Scr. Term	95	95000		5.5 x 4.0	VNSP		100	Any	12	44
30	12.8	4435			24577		12	Scr. Term	95	75000		5.5 x 5	VNSP		100	Any	12	44
35	12.8	4436			24582		12	Scr. Term	95	60000		10 x 4	NSP		300	Any		44
40	12.5	4531			24726		12	Scr. Term	95	30000		20 x 5			400	Any		44
50	12.8	H7635			43591		12	Scr. Term	95	160000		6.5 x 4	VNSP		100	Any	307	44
100	13	4537			24742		12	Scr. Term	95	200000		11 x 6	SP		25	Any		44
100	13	4537-2			40822		12	Scr. Term	95	200000		11 x 6	SP		25	Any		44
150	28	4570			24828		12	Scr. Term	95	32000		50 x 9	FL		300	Any		44
150	28	4571			24830		12	Scr. Term	95	7000		80 x 25	WFL		300	Any		44
150	28	4572			24833		12	Scr. Term	95	4500		55 x 55	VWFL		300	Any		44
150	32	150PAR46/1			19512		12	Scr. Term	95	100000		9 x 9	SP	1950	800	Any	64	44
150	125	150PAR46/3MFL			41968		12	Med Side Prong	102	8000	26 x 13	39 x 25	MFL	1500	2000	Any	64	45
200	120	200PAR46/3NSP			20115		12	Med Side Prong	102	31000	12 x 8	23 x 19	MSP	2270	2000	Any	64	45
200	120	200PAR46/3MFL12P			20138		12	Med Side Prong	102	11500	27 x 13	40 x 24	MFL	2270	2000	Any	64	45
200	130	200PAR46/3NSP			20117		12	Med Side Prong	102	31000	12 x 8	23 x 19	NSP	2270	2000	Any	64	45
200	130	200PAR46/3MFL			20140		12	Med Side Prong	102	11500	27 x 13	40 x 24	MFL	2270	2000	Any	64	45
250	28	4551			24795		12	Scr. Term	95	75000		50 x 10	FL		25	Any		44
250	28	4553			24799		12	Scr. Term	95	300000		11 x 12	SP		25	Any		44
450	16.6	4635			33284		12	Scr. Term	95	325000		14 x 15	SP		25	Any		44
450	28	4580			24859		12	Scr. Term	95	400000		13 x 14	SP		10	Any		44
450	28	4581			24862		12	Scr. Term	95	400000		13 x 14	SP		10	Any		44
450	28	Q4681			36271		12	Scr. Term	95	310000		15 x 9	SP		50	Any		44
450	28	Q4597-12PK			37372		12	Scr. Term	95	16000		60 x 35	VWFL		1000	Any		44
450	28	Q4554-12PK			37706		12	Scr. Term	95	65000		50 x 11	WFL		100	Any		44
table 24 par 56 (7"/178mm) sealed beams																		
100	12	4545			24768		12	Scr. Term	114	225000		9 x 5	NSP		100	Any		46
100	12.5	4543			24764		12	Scr. Term	114	250000		9 x 5	NSP		50	Any		46
120	12	120PAR56VNSP			19023		12	Scr. Term	114	60000	8 x 6	15 x 10	NSP		2000	Any	64	46
120	12	120PAR56MFL			19024		12	Scr. Term	114	19000	18 x 9	29 x 15	MFL		2000	Any	64	46
120	12	120PAR56WFL			19025		12	Scr. Term	114	5625	35 x 18	50 x 25	WFL		2000	Any	64	46
200	30	200PAR			20122		12	Scr. Term	114	230000		9 x 9	SP		350	Any		46
200	120	200PAR56/MFL			49889		12	Mog End Pr GX16d	127	15000	22 x 13	34 x 22	MFL	2750	2000	Any	64	47

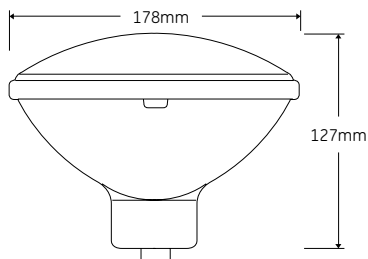


Fig. 47

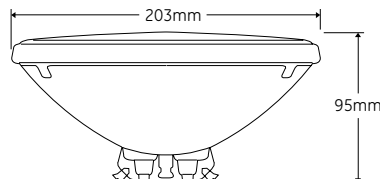


Fig. 48

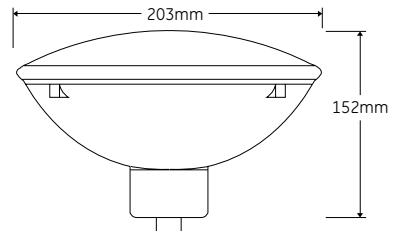


Fig. 49

WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	TYPE-BASE	MOD (MM)	APPROX. CBCP	BEAM SPREAD 10% (deg. H x V)	BEAM SPREAD 50% (deg. H x V)	BEAM TYPE	COLOR TEMP (K°)	RATED LIFE (HRS)	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
table 24 par 56 (7"/178mm) sealed beams (continued)																		
240	12	240PAR56VNSP			20575		12	Scr. Term	114	140000	9 x 6	7 x 10	VNSP		2000	Any		46
240	12	240PAR56MFL			20576		12	Scr. Term	114	46000	19 x 18	28 x 15	MFL		2000	Any		46
240	12	240PAR56WFL			20577		12	Scr. Term	114	13000	35 x 18	50 x 27	WFL		2000	Any		46
300	12	300PAR56/WFL			23427		12	Scr. Term	114				WFL		1000	Any		46
300	120	300PAR56/NSP			20803		12	Mog End Pr GX16d	127	68000	10 x 8	20 x 14	NSP	2750	2000	Any	64	47
300	120	300PAR56/MFL			20836		12	Mog End Pr GX16d	127	24000	23 x 11	34 x 19	MFL	2750	2000	Any	64	47
300	120	300PAR56/WFL			20849		12	Mog End Pr GX16d	127	11000	37 x 18	57 x 27	WFL	2750	2000	Any	64	47
300	130	300PAR56/WFL			20851		12	Mog End Pr GX16d	127	11000	37 x 18	57 x 27	WFL	2750	2000	Any	64	47
300	230	300PAR56/MFL			20852		12	ExMogEnd Pr GX16d	127	30000			MFL		2000	Any	64	47
300	230	300PAR56/NSP			20853		12	ExMogEnd Pr GX16d	127	40000			NSP		2000	Any	64	47
300	230	300PAR56/WFL			20854		12	ExMogEnd Pr GX16d	127	10000			WFL		2000	Any	64	47
300	240	300PAR56/NSP			18676		12	ExMogEnd Pr GX16d	127	40000			NSP		2000	Any	64	47
300	240	300PAR56/MFL			18677		12	ExMogEnd Pr GX16d	127	30000			MFL		2000	Any	64	47
300	240	300PAR56/WFL			18678		12	ExMogEnd Pr GX16d	127	10000			WFL		2000	Any	64	47
450	28	4541			24756		12	Scr. Term	114	470000		15 x 11	SP		25	Any		46
500	120	Q500PAR56NSP			43494		6	Mog End Pr GX16d	127	96000	13 x 8	32 x 15	NSP	2950	4000	Any	63	47
500	120	Q500PAR56MFL			43495		6	Mog End Pr GX16d	127	43000	26 x 10	42 x 20	MFL	2950	4000	Any	63	47
500	120	Q500PAR56WFL			43496		6	Mog End Pr GX16d	127	19000	44 x 20	66 x 34	WFL	2950	4000	Any	63	47
table 25 par 64 (8"/203mm) sealed beams																		
250	28	4552			40576		12	Scr. Term	95	500000		7 X 8	SP		25			48
500	120	500PAR64/NSP			39406		12	ExMogEnd Pr GX16d	152	110000	12 X 7	19 x 14	NSP	2800	2000		64	49
500	120	500PAR64/MFL			39409		12	ExMogEnd Pr GX16d	152	37000	23 X 11	35 x 19	MFL	2800	2000		64	49
500	120	500PAR64/WFL			39412		12	ExMogEnd Pr GX16d	152	13000	42 X 20	55 x 32	WFL	2800	2000		64	49
500	230	500PAR64/MFL			39411		12	ExMogEnd Pr GX16d	152		21 X 10	32 x 19	MFL	2700	2000		64	49
500	230	500PAR64/WFL			39414		12	ExMogEnd Pr GX16d	152		42 X 20	55 x 32	WFL	2700	2000		64	49
500	230	Q500PAR64/VNSP	CP86	25492*	73581		6	ExMogEnd Pr GX16d	152	240000	10 X 7	16 x 13	VNSP	3200	300		63	49
500	230	Q500PAR64/NSP	CP87	25504*	99945		6	ExMogEnd Pr GX16d	152	140000	11 X 9	19 x 16	NSP	3200	300		63	49

LAMP STOCKING COLOR CODE: EUROPE ONLY, EUROPE & NORTH AMERICA, NORTH AMERICA ONLY

See Discharge Sealed Beams Table 31 and 32
*Order Code in NA Only

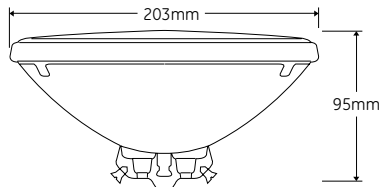


Fig. 48

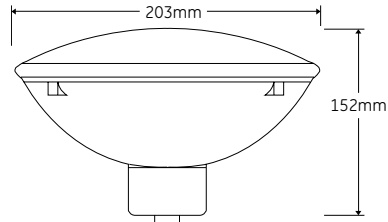
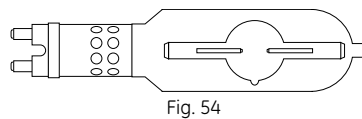
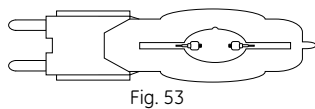
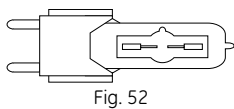
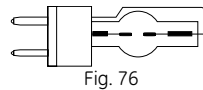
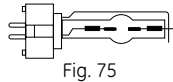
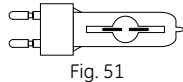
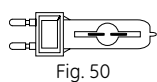


Fig. 49

WATTS	DESIGN VOLTS	GE DESCRIPTION	ANSI CODE	LIF CODE	ORDER CODE	FUTURE CODE	PACK QTY.	TYPE-BASE	MDL (MM)	APPROX. CBCP	BEAM SPREAD 10% (deg. H x V)	BEAM SPREAD 50% (deg. H x V)	BEAM TYPE	COLOR TEMP (K)	RATED LIFE (HRS)	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
table 25 par 64 (8"/203mm) sealed beams (continued)																		
500	230	Q500PAR64/MFL		CP88	25513*	99947	6	ExMogEnd Pr GX16d	152	65000	21 X 10	32 x 19	MFL	3200	300		63	49
500	240	Q500PAR64/VNSP		CP86	25493*	99944	6	ExMogEnd Pr GX16d	152	240000	10 X 7	16 x 13	VNSP	3200	300		63	49
500	240	Q500PAR64/NSP		CP87	25507*	99946	6	ExMogEnd Pr GX16d	152	140000	11 X 9	19 x 16	NSP	3200	300		63	49
500	240	Q500PAR64/MFL		CP88	25520*	99948	6	ExMogEnd Pr GX16d	152	65000	21 X 10	32 x 19	MFL	3200	300		63	49
600	28	4559			40578		12	Scr. Term	95	600000		11 X 12	SP		25		64	48
600	28	Q4559			40579		12	Scr. Term	95	600000		12 X 8	SP		100		63	48
600	28	Q4559X			42559		12	Scr. Term	95	765000		11 X 7	SP		100		63	48
1000	120	FFN-Q1000PAR64/1	FFN		13233		6	ExMogEnd Pr GX16d	152	400000	12 X 6	24 x 10	VNSP	3200	800		63	49
1000	120	FFP-Q1000PAR64/2	FFP		13229		6	ExMogEnd Pr GX16d	152	330000	14 X 7	26 x 14	NSP	3200	800		63	49
1000	120	FFR-Q1000PAR64/5	FFR		13228		6	ExMogEnd Pr GX16d	152	125000	28 X 12	44 x 21	MFL	3200	800		63	49
1000	120	FFS-Q1000PAR64/6	FFS		13227		6	ExMogEnd Pr GX16d	152	40000	48 X 24	71 x 45	WFL	3200	800		63	49
1000	120	Q1000PAR64NSP			43497		6	ExMogEnd Pr GX16d	152	200000	15 X 8	31 x 14	NSP	3000	4000		63	49
1000	120	Q1000PAR64MFL			43498		6	ExMogEnd Pr GX16d	152	80000	28 X 12	45 x 22	MFL	3000	4000		63	49
1000	120	Q1000PAR64/WFL			43499		6	ExMogEnd Pr GX16d	152	33000	48 X 24	72 x 45	WFL	3000	4000		63	49
1000	230	EXC-Q1MPAR64CP60	EXC	CP60	93409	88425	6	ExMogEnd Pr GX16d	152	352000	12 X 9	20 x 17	VNSP	3200	300		63	49
1000	230	EXD-Q1MPAR64CP61	EXD	CP61	10928	88535	6	ExMogEnd Pr GX16d	152	297000	14 X 10	22 x 20	NSP	3200	300		63	49
1000	230	CP95/230V		CP95	88511		6	ExMogEnd Pr GX16d	152	15000	70 X 70	125 x 95	VWFL	3200	300		63	49
1000	230	EXE-Q1MPAR64CP62	EXE	CP62	10930	88549	6	ExMogEnd Pr GX16d	152	138000	24 X 11	38 x 20	MFL	3200	300		63	49
1000	230	EXG/PAR64/WFL230V	EXG		88480		6	ExMogEnd Pr GX16d	152	38000	57 X 21	73 x 36	WFL	3200	300		63	49
1000	240	EXC-Q1MPAR64CP60	EXC	CP60	10925	88551	6	ExMogEnd Pr GX16d	152	352000	12 X 9	20 x 17	VNSP	3200	300		63	49
1000	240	EXD-Q1MPAR64CP61	EXD	CP61	10929	88550	6	ExMogEnd Pr GX16d	152	297000	14 X 10	22 x 20	NSP	3200	300		63	49
1000	240	EXE-Q1MPAR64CP62	EXE	CP62	10931*	88536	6	ExMogEnd Pr GX16d	152	138000	24 X 11	38 x 20	MFL	3200	300		63	49
1000	240	EXG/PAR64/WFL240V	EXG		88479		6	ExMogEnd Pr GX16d	152	38000	57 X 21	73 x 36	WFL	3200	300		63	49
1000	240	CP95/240V		CP95	88510		6	ExMogEnd Pr GX16d	152	15000	70 X 70	125 x 95	VWFL	3200	300		63	49
1200	120	GFB-Q1200PAR64/2	GFB		34810*	88486	6	ExMogEnd Pr GX16d	152	450000	8 X 10	16 x 18	NSP	3200	400		63	49
1200	120	GFC-Q1200PAR64/1	GFC		88487		6	ExMogEnd Pr GX16d	152	540000	8 X 10	14 x 16	VNSP	3200	400		63	49

LAMP STOCKING COLOR CODE: EUROPE ONLY, EUROPE & NORTH AMERICA, NORTH AMERICA ONLY

See Discharge Sealed Beams Table 31 and 32
*Order Code in NA Only



WATTS	DESIGN VOLTS	GF DESCRIPTION	ORDER CODE	PACK QTY.	BULB TYPE	TYPE BASE	LUMENS	COLOR TEMP (K°)	COLOR CRI INDEX	ARC LENGTH (MM)	RATED LIFE (HRS)	CIE COLOR-x	CIE COLOR-y	LCL (MM)	MOL (MM)	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
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DISCHARGE-CSR (DAYLIGHT) METAL HALIDE

table 26 discharge CSR/CSD (daylight) metal halide, single-end cold start

250	94	CSD250/2/SE	27817	10	T7	GY9.5	18000	9000	60+	5.5	2000	0.287	0.296	55	108	Any	14,63	50
575	97	CSR575/2/T/SE	49492	10	T9	GX9.5	42000	7600	65+	7	1000	0.301	0.302	65	125	Any	14,63	50
575	97	CSR575/2/SE	15378	10	T9	GX9.5	46000	7200	65+	7	1000	0.302	0.320	65	125	Any	14,63	50
700	70	CSR700/2/SE	49491	10	T9	G22	55000	6580	70+	7.5	1000	0.312	0.325	75	155	Any	14,63	51
1200	100	CSR1200/2/SE	49490	6	T12	G22	110000	7200	75+	10	800	0.305	0.315	85	175	Any	14,63	51

table 27 discharge CSR (daylight) metal halide, single-end short arc

700	70	CSR700/SA	15380	10	G7	GY9.5	58000	6100	70+	4.3	500	0.330	0.342	39	85	Any	14,63	75
700	70	CSR700/SA/72	45234	10	G7	GY9.5	58000	7200	70+	4.3	500	0.330	0.342	39	85	Any	14,63	75
1200	100	CSR1200/SA	21849	6	G8	GY22	96000	5800	75+	7.5	750	0.326	0.330	59	135	Any	14,63	76
1200	100	CSR1200/SA/TAL	74873	6	G9	PGJX50	96000	5800	75+	5	750	0.326	0.330	65	128	Any	14,63	
1500	100	CSR1500/SA	96799	6	G9	GY22	130000	6200	78+	7	750	0.315	0.320	59	136	Any	14,63	76
1800	100	CSR2000/SA	21801	6	G9	GY22	155000	6000	75+	7.5	750	0.323	0.329	59	135	Any	14,63	76

table 28 discharge CSR (daylight) metal halide, single-end hot restrike

125	80	CSR125/SE/HR	48461	10	T5	GZX9.5	9400	5600	90+	4	200	0.323	0.328	39	75	Any	14,63	50
200	70	CSR200/SE/HR	48462	10	T6	GZY9.5	15000	5600	90+	5	200	0.323	0.328	39	80	Any	14,63	50
400	70	CSR400/SE/HR/75	45238	10	T7	GZZ9.5	28000	7500	70+	5	750	0.323	0.320	60	110	Any	14,63	50
400	70	CSR400/SE/HR	21853	10	T7	GZZ9.5	32000	6000	85+	6.5	750	0.323	0.320	60	110	Any	14,63	50
575	95	CSR575/SE/HR	48463	10	T9.5	G22	48000	6000	90+	7	750	0.323	0.328	70	145	Any	14,63	51
1200	100	CSR1200/SE/HR	48464	6	T13	G38	110000	6000	90+	10	750	0.323	0.328	107	200	Any	14,63	52
2500	115	CSR2500/SE/HR	48465	6	T19.5	G38	220000	6000	90+	14	500	0.323	0.328	127	240	Any	14,63	53
4000	200	CSR4000/SE/HR	48466	6	T24	G38	380000	6000	90+	24	500	0.323	0.328	142	260	Any	14,63	53
6000	130	CSR6000/SE/HR	48467	6	T26.5	G38	540000	6000	90+	26	300	0.323	0.328	210	360	Any	14,63	54
12000	160	CSR12000/SE/HR	48468	4	T32	G38	1100000	6000	90+	28	250	0.323	0.328	255	450	Any	14,63	54
18000	225	CSR18000/SE/HR	22496	1	T32	G51	1650000	6000	90+	35	250	0.323	0.328	260	460	Any	14,63	

table 29 discharge CSR (daylight) metal halide, single-end hot restrike, UV control

575	95	CSR575/SE/HR/UV	40460	10	T9.5	G22	49000	5600	80+	7	750	0.330	0.325	70	145	Any	14,63	51
800	95	CSR800/SE/HR/UV	22495	10	T9.5	G22	64000	5600	90+	7	1000	0.325	0.327	70	145	Any	14,63	51
1200	100	CSR1200/SE/HRUV	27764	6	T13	G38	110000	5600	90+	10	750	0.333	0.333	107	200	Any	14,63	52
2500	115	CSR2500/SE/HRUV	40482	6	T19.5	G38	220000	5600	90+	14	500	0.330	0.325	127	240	Any	14,63	53
4000	200	CSR4000/SE/HRUV	27765	6	T24	G38	380000	5600	90+	24	500	0.330	0.325	142	260	Any	14,63	53
6000	130	CSR6000/SE/HRUV	40492	6	T26.5	G38	540000	5600	90+	26	300	0.333	0.333	210	360	Any	14,63	54

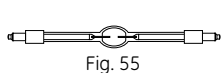


Fig. 55

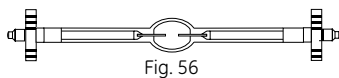


Fig. 56

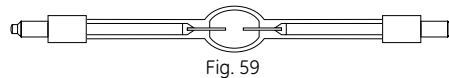


Fig. 59

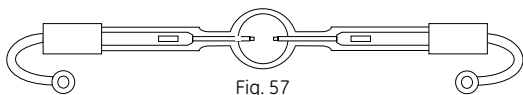


Fig. 57

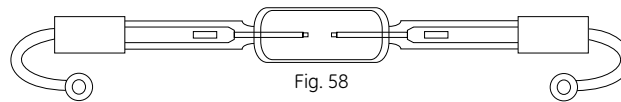
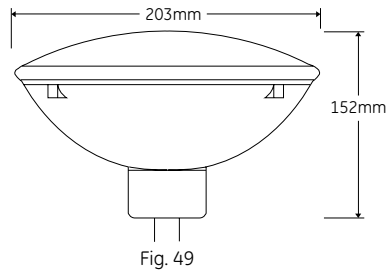
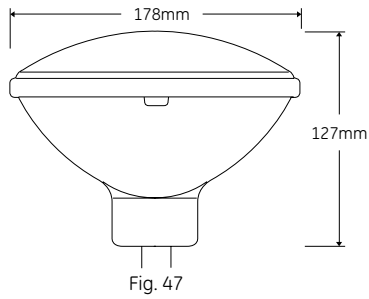


Fig. 58

WATTS	DESIGN VOLTS	GF DESCRIPTION	ORDER CODE	PACK QTY.	BULB TYPE	TYPE BASE	LUMENS	COLOR TEMP (K°)	COLOR CRI INDEX	ARC LENGTH (MM)	RATED LIFE (HRS)	CIE COLOR _x	CIE COLOR _y	LCL (MM)	MOL (MM)	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
200	80	CSR200/DE	48450	10	T4.5	X515	16000	6000	90+	8	300	0.323	0.325		75	H15	14,63	55
400	49	CSR400/S/DE/70	22478	10	T6.5	SFc 10-4 SI/M4	26000	7000	65+	3	750	0.305	0.323		138	Any	14,63	56
400	49	CSR400/S/DE/90	45232	10	T6.5	SFc 10-4 SI/M4	26000	9000	65+	3	750	0.305	0.323		138	Any	14,63	56
575	95	CSR575/DE	48451	10	T6.5	SFc 10-4 SI/M4	49000	6000	90+	7	750	0.323	0.325		138	Any	14,63	56
575	95	CSR575/S/DE/70	70979	10	T6.5	SFc 10-4 SI/M4	40000	7000	75+	7	750	0.307	0.309		138	Any	14,63	56
575	100	CSR575/SS/DE/75	45231	10	T6.5	SFc 10-4 SI/M4	44000	7500	70+	5	500	0.297	0.312		92	H15	14,63	56
700	70	CSR700/S/DE/60	22493	10	T6.5	SFc 10-4 SI/M4	59000	6000	75+	4	750	0.322	0.332		138	Any	14,63	56
700	70	CSR700/S/DE/72	41357	10	T6.5	SFc 10-4 SI/M4	59000	7200	75+	4	750	0.322	0.332		138	Any	14,63	56
1200	100	CSR1200/S/DE/60	22494	10	T6.5	SFc 10-4 SI/M4	110000	6000	90+	7	750	0.323	0.325		138	Any	14,63	56
1200	100	CSR1200/S/DE/72	41361	10	T6.5	SFc 10-4 SI/M4	110000	7200	75+	7	750	0.323	0.328		138	Any	14,63	56
1200	100	CSR1200/S/DE/60/STB	96802	10	T6.5	SFc 10-4 SI/M4	105000	6000	88	7	750	0.323	0.325		135	Any	14,63	56
1200	100	CSR1200/DE	48453	6	T8.5	SFc 10-5-6 SI/M6	110000	6000	85+	10	750	0.323	0.325		220	H15	14,63	56
1500	115	CSR1500/S/DE/60/STB	96800	10	T6.5	SFc 10-4 SI/M4	132000	6000	85+	7	750	0.326	0.334		138	H15	14,63	56
2500	115	CSR2500/DE	48454	6	T9.5	Sta21-12	240000	6000	90+	14	500	0.323	0.325		355	H15	14,63	59
4000	200	CSR4000/DE	48455	6	T12	Sta21-12	410000	6000	90+	34	500	0.323	0.325		405	H15	14,63	59
6000	125	CSR6000/DE	48456	6	T16	25X51 Cyl 165mm	570000	6000	90+	22	300	0.323	0.325		450	H15	14,63	57
12000	160	CSR12000/DE	48457	4	T22.5	30x70 Cyl 165mm	1100000	6000	90+	32	300	0.323	0.325		470	H15	14,63	57
18000	225	CSR18000/DE	48459	4	T28	30x70 Cyl 165mm	1650000	6000	90+	45	300	0.323	0.325		500	H15	14,63	58
18000	225	CSR18000/S/DE	48460	4	T28	30x70 Cyl 165mm	1650000	6000	90+	45	300	0.323	0.325		470	H15	14,63	58



WATTS DESIGN VOLTS GF DESCRIPTION ORDER CODE FUTURE ORDER CODE PACK QTY. TYPE BASE MOL (MM) DESIGN CBCp BEAM SPREAD 10% (H x V) BEAM SPREAD 50% (H x V) BEAM TYPE COLOR TEMP (K) COLOR CRI INDEX RATED LIFE (HRS) ANSI BALLAST BURNING POSITION FOOTNOTES & CAUTIONS FIG NO.

DISCHARGE-CONSTANTCOLOR® CMH CERAMIC METAL HALIDE IN REFLECTOR

table 31 | discharge ConstantColor® CMH® ceramic metal halide, par 56 reflector

WATTS	DESIGN VOLTS	GF DESCRIPTION	ORDER CODE	FUTURE ORDER CODE	PACK QTY.	TYPE BASE	MOL (MM)	DESIGN CBCp	BEAM SPREAD 10% (H x V)	BEAM SPREAD 50% (H x V)	BEAM TYPE	COLOR TEMP (K)	COLOR CRI INDEX	RATED LIFE (HRS)	ANSI BALLAST	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
150	95	CMH150/PAR56/830/Gx16d/SP	22693		6	Gx16d	127	80000	68X63	14X19	SP	3000	80+	5000	M81,102,142	Any	14,63	47
150	95	CMH150/PAR56/830/Gx16d/MFL	22694		6	Gx16d	127	60000	74X65	19X22	MFL	3000	80+	5000	M81,102,142	Any	14,63	47
150	95	CMH150/PAR56/830/Gx16d/WFL	22696		6	Gx16d	127	50000	81X67	29X23	WFL	3000	80+	5000	M81,102,142	Any	14,63	47
150	100	CMH150/PAR56/942/Gx16d/SP	22697		6	Gx16d	127	80000	68X63	14X19	SP	4200	90+	5000	M81,102,142	Any	14,63	47
150	100	CMH150/PAR56/942/Gx16d/MFL	22700		6	Gx16d	127	60000	74X65	19X22	MFL	4200	90+	5000	M81,102,142	Any	14,63	47
150	100	CMH150/PAR56/942/Gx16d/WFL	22702		6	Gx16d	127	50000	81X67	29X23	WFL	4200	90+	5000	M81,102,142	Any	14,63	47

table 32 | discharge ConstantColor® CMH® ceramic metal halide, par 64 reflector

WATTS	DESIGN VOLTS	GF DESCRIPTION	ORDER CODE	FUTURE ORDER CODE	PACK QTY.	TYPE BASE	MOL (MM)	DESIGN CBCp	BEAM SPREAD 10% (H x V)	BEAM SPREAD 50% (H x V)	BEAM TYPE	COLOR TEMP (K)	COLOR CRI INDEX	RATED LIFE (HRS)	ANSI BALLAST	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
150	95	CMH150/PAR64/830/Gx16d/SP	16958	88545	6	Gx16d	152	154000	18x18	9x9	SP	3000	80+	8000	M81,102,142	Any	14,63	49
150	95	CMH150/PAR64/830/Gx16d/MFL	16959*	88537	6	Gx16d	152	47000	34x26	22x14	MFL	3000	80+	8000	M81,102,142	Any	14,63	49
150	95	CMH150/PAR64/830/Gx16d/WFL	16960	88544	6	Gx16d	152	16000	62x36	46x23	WFL	3000	80+	8000	M81,102,142	Any	14,63	49
150	100	CMH150/PAR64/942/Gx16d/SP	16961	88543	6	Gx16d	152	154000	18x18	9x9	SP	4200	90+	8000	M81,102,142	Any	14,63	49
150	100	CMH150/PAR64/942/Gx16d/MFL	16962	88542	6	Gx16d	152	47000	34x26	22x14	MFL	4200	90+	8000	M81,102,142	Any	14,63	49
150	100	CMH150/PAR64/942/Gx16d/WFL	16963	88542	6	Gx16d	152	16000	62x36	46x23	WFL	4200	90+	8000	M81,102,142	Any	14,63	49

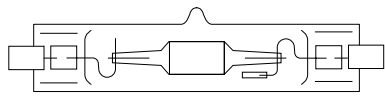


Fig. 64

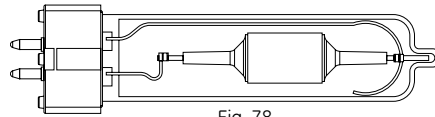


Fig. 78

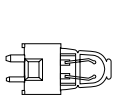


Fig. 65

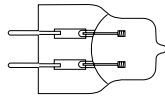


Fig. 67

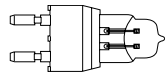


Fig. 68

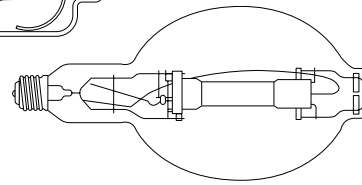


Fig. 70

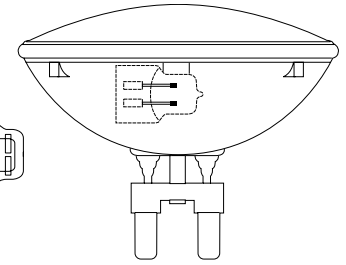


Fig. 72

WATTS	DESIGN VOLTS/ ANSI BALLAST	GE DESCRIPTION	ORDER CODE	FUTURE ORDER CODE	PACK QTY.	BULB TYPE	TYPE BASE	LUMENS	COLOR TEMP (K°)	COLOR CRI INDEX	ARC LENGTH (MM)	RATED LIFE (HRS)	LCL (MM)	MOL (MM)	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
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table 33 discharge ConstantColor® CMH® ceramic metal halide, single-end GX9.5 prefocus medium 2-pin base																	
400	135	CMH400/932/GX9.5	73579		4	T9.5	GX9.5	40000	3200	90+	16.5	3000	80	150	Any	14,63	78
400	135	CMH400/941/GX9.5	73580		4	T9.5	GX9.5	40000	4100	90+	16.5	3000	80	150	Any	14,63	78

DISCHARGE-CSI, CID, MVR/SPL

table 34 discharge CSI, CID, MVR/SPL single- and double-end																	
140	85	CSS150/CAP/50	34813*	88485	10	T-7	GY9.5	10000	5000	80	6	1000	30	48	BDTH	14,63	65
400	100	99-0201CSI	30555	88495	1	T-6	Special	32000	4000	80	9	500	25	55	BDTH	14,63	67
1000	77	99-0221CSI	30558	88494	1	T-10	G22	90000	4000	80	14	500	64	115	BDTH	14,63	68
1000	77	99-0222CID	30561	88493	1	T-10	G22	70000	5500	85	15	500	64	115	BDTH	14,63	68
1500	M48	MVR1500/U/SPORTS	47326		6	BT56	E39	162000	4000	65		3000	241	390	Any	14,63	70
1500	M48	MVR1500/HBU	37405		6	BT56	E39	155000	3900	65		3000	241	390	HBU	14,63	70
1650	M112	MVR1650/HOR	25532		6	BT56	E39p	177000	3200	65		3000	241	390	H15	14,63	70
1500	Special	SPL1500/H/652	16920		1	T-7	Rx7s	120000	5200	80		6000		257	H4	14,63	64
2000	M134	MQI12000/T9/40	12275		10	T9	Special	200000	4000	65		3000	109	254	H15	14,63	

table 35 discharge CSI, CID, MVR/SPL par 64 reflector																	
1000	77	SPL1000/PAR64/840	88514		1	PAR64	G38	1350000	3800			3500	18	80	H90	14,19,63	72
1000	77	SPL1000/PAR64/HR	29336	88513	1	PAR64	G38	1350000	3800			3500	18	80	H90	14,19,63	72
1000	77	99-1225 CID CS	30360		1	PAR64	G38	850000	5500			1500	20	85	H90	14,19,63	72
1000	77	99-1425 CID HR	30371		1	PAR64	G38	850000	5500			1000	20	85	H90	14,19,63	72
1200	77	99-1435 CID HR	30372		1	PAR64	G38	820000	5500			1000	8	85	H90	14,19,63	72



Fig. 73

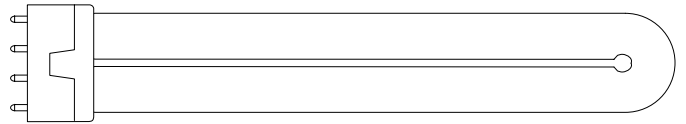


Fig. 74

WATTS	MOL (IN)	GE DESCRIPTION	ORDER CODE	PACK QTY.	TYPE BASE	BULB OD	MOL (MM)	INITIAL LUMENS	MEAN LUMENS	COLOR TEMP (K°)	COLOR CRI INDEX	CIE COLOR-x	CIE COLOR-y	RATED LIFE (HRS)	BURNING POSITION	FOOTNOTES & CAUTIONS	FIG NO.
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CINEMA FLUORESCENT																	
table 36 fluorescent cinema lighting, T8 high output																	
28	24	F24T8CINEMA32/CVG	72658	24	G-13 Med BiPin	T8	610	1250		3200	92	0.420	0.390	2000	Any	8,9	73
28	24	F24T8CINEMA55/CVG	72659	24	G-13 Med BiPin	T8	610	1200		5500	97	0.310	0.314	2000	Any	8,10	73
55	48	F48T8/CINEMA32	81205	24	G-13 Med BiPin	T8	1219	2750	975.2	3200	95	0.415	0.377	2000	Any	8,9	73
55	48	F48T8/CINEMA55	81206	24	G-13 Med BiPin	T8	1219	2750	975.2	5500	97	0.330	0.335	2000	Any	8,10	73
55	48	F48T8/CINEMA32/CVG	81207	24	G-13 Med BiPin	T8	1219	2750	975.2	3200	95	0.415	0.377	2000	Any	8,9	73
55	48	F48T8/CINEMA55/CVG	81208	24	G-13 Med BiPin	T8	1219	2750	975.2	5500	97	0.330	0.335	2000	Any	8,10	73
table 37 fluorescent cinema lighting, standard T12																	
35	24	F20T12/CINEMA32/HO	15712	24	G-13 Med BiPin	T12	610	1130	800	3200	95	0.415	0.377	2000	Any	8,9	73
35	24	F20T12/CINEMA55/HO	15713	24	G-13 Med BiPin	T12	610	1100	770	5500	96	0.330	0.335	2000	Any	8,10	73
60	48	F40T12/CINEMA32/HO	15716	30	G-13 Med BiPin	T12	1219	2900	2030	3200	95	0.415	0.377	2000	Any	8,9	73
60	48	F40T12/CINEMA55/HO	15717	30	G-13 Med BiPin	T12	1219	2820	1974	5500	96	0.330	0.335	2000	Any	8,10	73
85	72	F72T12/CINEMA32/HO	15718	15	G-13 Med BiPin	T12	1829	4150	2905	3200	95	0.415	0.377	2000	Any	8,9	73
85	72	F72T12/CINEMA55/HO	15719	15	G-13 Med BiPin	T12	1829	4050	2835	5500	96	0.330	0.335	2000	Any	8,10	73
110	96	F96T12/CINEMA32/HO	15720	15	G-13 Med BiPin	T12	2438	5800	4060	3200	95	0.415	0.377	2000	Any	8,9	73
110	96	F96T12/CINEMA55/HO	15721	15	G-13 Med BiPin	T12	2438	5650	3955	5500	96	0.330	0.335	2000	Any	8,10	73
table 38 fluorescent cinema lighting, T12 with covRguard® jackets																	
35	24	F20T12/CINEMA32/HO/CVG	15775	24	G-13 Med BiPin	T12	610	1130	800	3200	95	0.415	0.377	2000	Any	8,9	73
35	24	F20T12/CINEMA55/HO/CVG	15776	24	G-13 Med BiPin	T12	610	1100	770	5500	96	0.330	0.335	2000	Any	8,10	73
60	48	F40T12/CINEMA32/HO/CVG	15782	30	G-13 Med BiPin	T12	1219	2900	2030	3200	95	0.415	0.377	2000	Any	8,9	73
60	48	F40T12/CINEMA55/HO/CVG	15783	30	G-13 Med BiPin	T12	1219	2820	1974	5500	96	0.330	0.335	2000	Any	8,10	73
85	72	F72T12/CINEMA32/HO/CVG	15785	15	G-13 Med BiPin	T12	1829	4150	2905	3200	95	0.415	0.377	2000	Any	8,9	73
85	72	F72T12/CINEMA55/HO/CVG	15786	15	G-13 Med BiPin	T12	1829	4050	2835	5500	96	0.330	0.335	2000	Any	8,10	73
110	96	F96T12/CINEMA32/HO/CVG	15794	15	G-13 Med BiPin	T12	2438	5800	4060	3200	95	0.415	0.377	2000	Any	8,9	73
110	96	F96T12/CINEMA55/HO/CVG	15798	15	G-13 Med BiPin	T12	2438	5650	3955	5500	96	0.330	0.335	2000	Any	8,10	73
table 39 fluorescent cinema lighting, biax®																	
55	21.10	F55BX/STUDIOBIAX32	41869	10	2G11-4 PIN	T5	536	4100	3485	3200	86	0.415	0.380	8000	Any	11	74
55	21.10	F55BX/STUDIOBIAX56	41873	10	2G11-4 PIN	T5	536	4100	3485	5600	86	0.330	0.335	8000	Any	13	74
55	21.10	F55BX/CINPLUS/32	41903	10	2G11-4 PIN	T5	536	2400	2040	3200	86	0.415	0.380	2000	Any	11	74
55	21.10	F55BX/CINPLUS/56	41911	10	2G11-4 PIN	T5	536	2400	2040	5600	86	0.330	0.335	2000	Any	13	74

Quartzline® halogen lamp performance

The following maximum and minimum temperatures are suggested for optimum life. Operation outside these figures will not necessarily cause immediate failure but will affect life adversely to an increasing extent.

SEAL: 500°C MAXIMUM

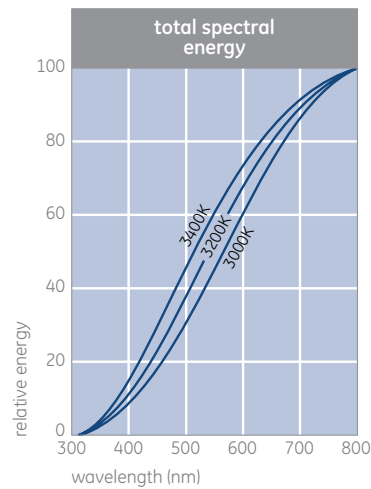
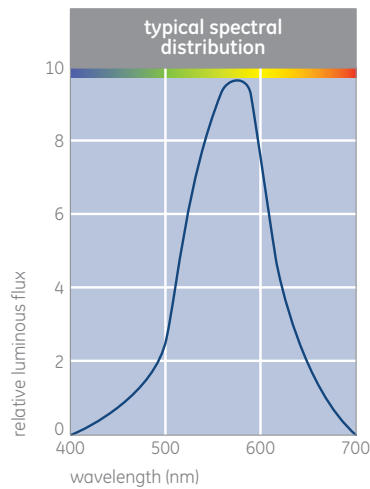
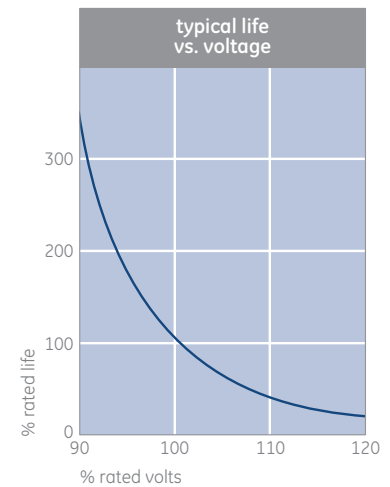
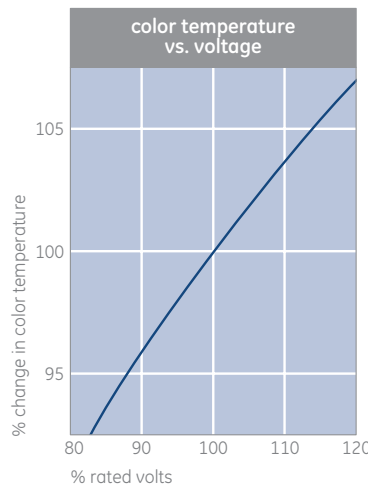
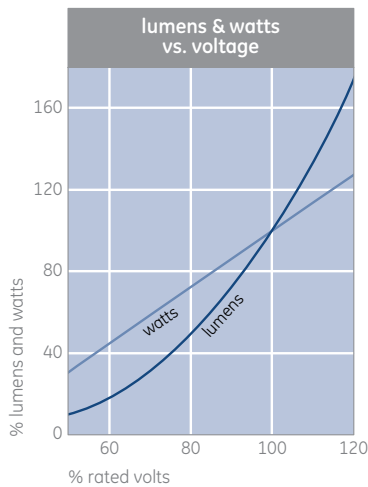
Above this figure the sealing foil oxidizes at a rate increasing with temperature and is frequently the cause of short life due to seal failure.

BULB: 250–800°C

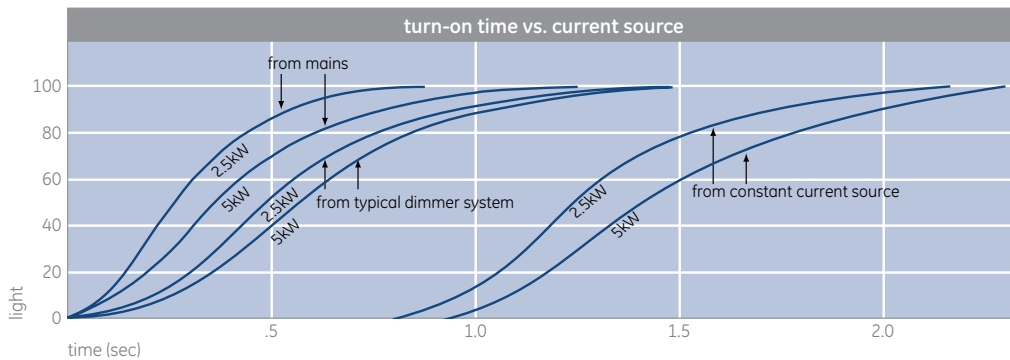
Outside this range the halogen cycle becomes less efficient and blackening may occur. Temperatures above 1200°C will cause the bulb to soften.

PINS: 350°C MAXIMUM

Above this figure the plating on the pins may lose adhesion and the contact will deteriorate. Such deterioration may form local hot spots which rapidly worsen and may result in arcing and irreparable damage to both lamp and holder. Should signs of this be evident on removal of a failed lamp, it is important that a good contact is restored by replacing the lampholder before the next lamp is fitted. Otherwise the new lamp will rapidly fail in a similar manner.



Spectral energy distribution can be shown in absolute terms whereas radiation in terms of visible light is related to the response of the human eye.



Linear and single-ended halogen lamp construction

OPERATIONAL CHARACTERISTICS

Quartz halogen lamps are designed to be operated within close voltage tolerances, and excessive voltage can lead to drastically shortened life, albeit with significantly higher light output.

A second important variable is temperature. The tungsten halogen cycle does not operate properly below about 482°F (250°C) and quartz may begin to devitrify above about 1832°F (1000°C). Bulb envelopes should therefore be held in the range 482–1472°F (250–800°C).

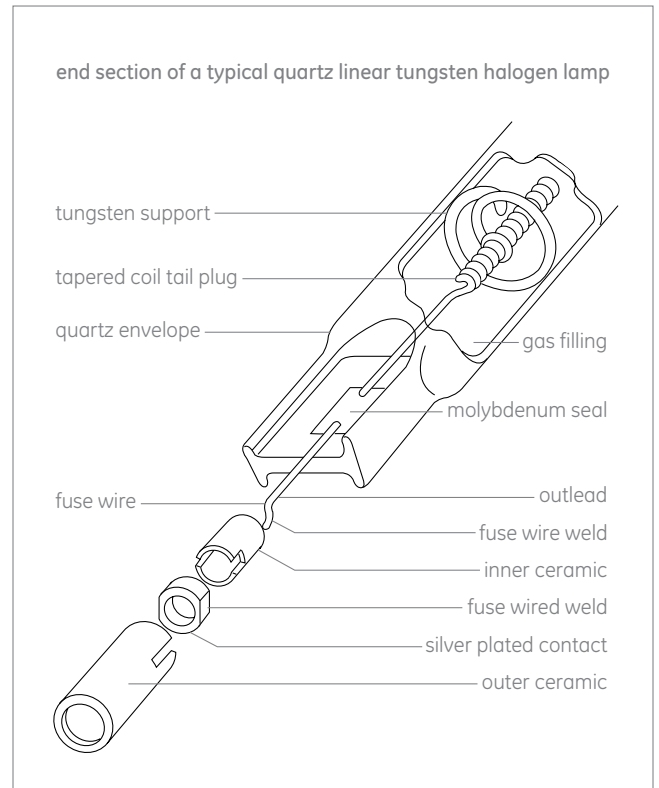
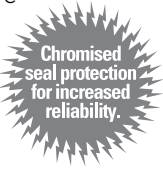
The contact pins are plated to ensure good electrical connection with the lampholder. However, at temperatures above 350°C, the plating may lose adhesion, leading to deterioration in contact and possibly local hot spots, arcing and consequent irreparable damage to both lamp and holder. Note that if there is evidence that this has occurred, the lampholder should be replaced before the next lamp is fitted; otherwise, it is likely to fail prematurely for the same reason.

Lamps normally fail by fusing of the filament. This is often followed by arcing, leading to very high currents which can cause the envelope and seals to fail and the lamp to shatter. A quick-acting, high-breaking capacity fuse should therefore be connected to the supply line in all applications. Suitable types are given in IEC 127, 241 and 269.

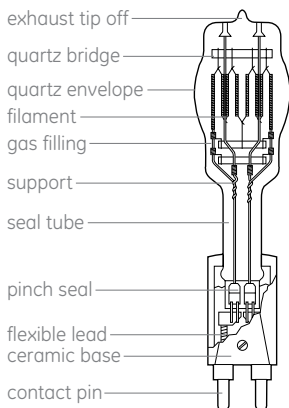
CHROMISED SEAL PROTECTION

Many Quartzline® Stage/Studio lamps have a special chromised seal protection, which allows lamp seal temperatures up to 500°C (vs traditional 350°C), which increases life and reliability.

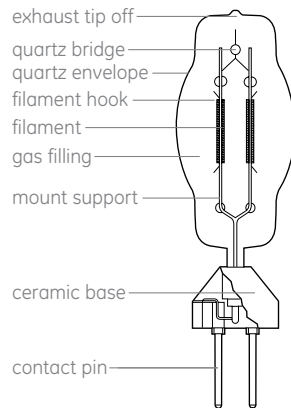
If the package does not have this seal, lamp base temperatures for Quartzline® lamps should not exceed 350°C because, above that point, lead wires in the sealing area will deteriorate, and base cement can loosen, both causing premature lamp failure. Note over voltaging a lamp will increase the seal heat.



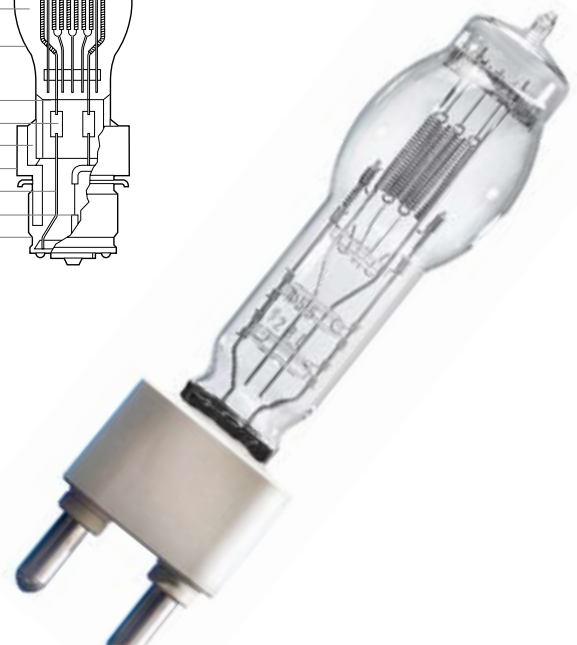
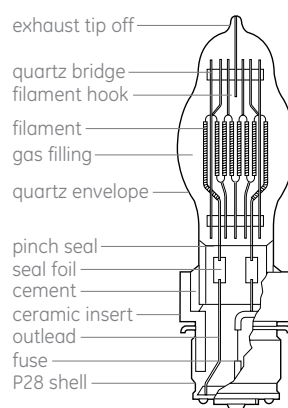
a typical high wattage studio lamp



a typical 4-pin, twin filament, studio lamp

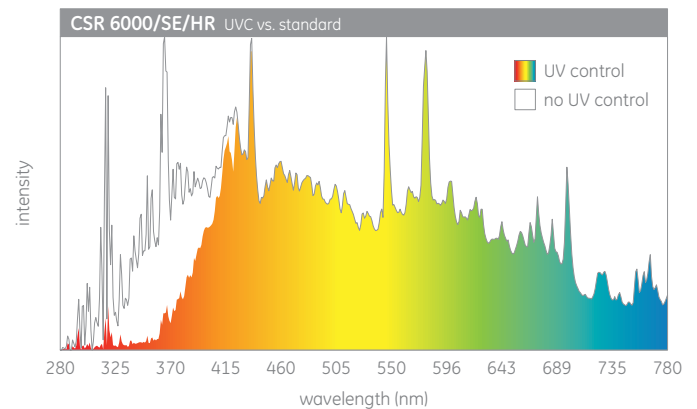
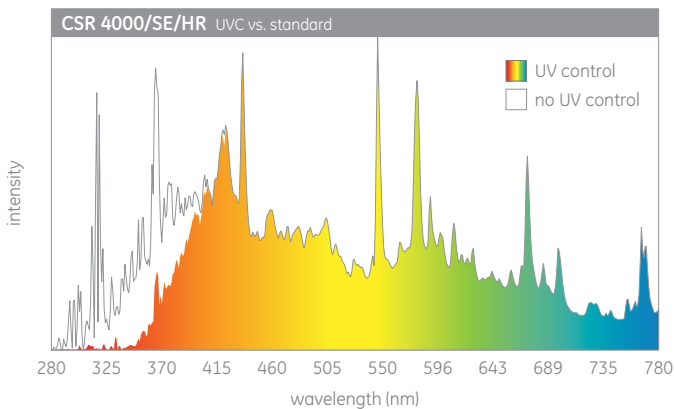
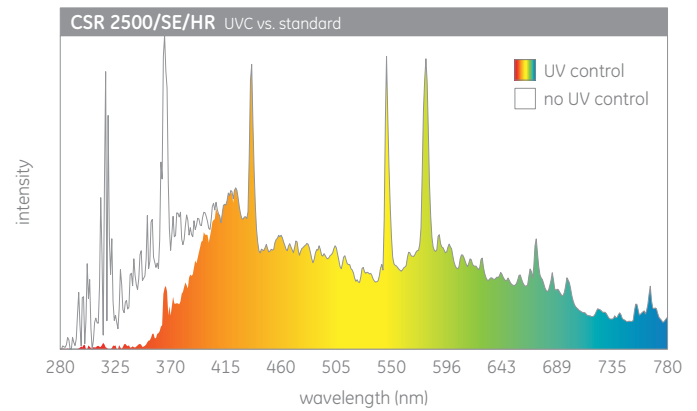
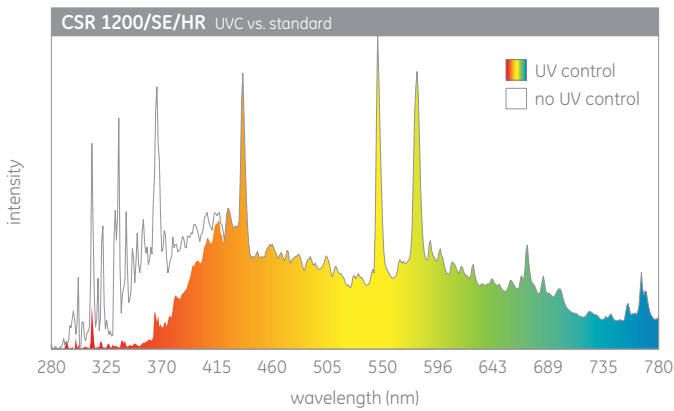
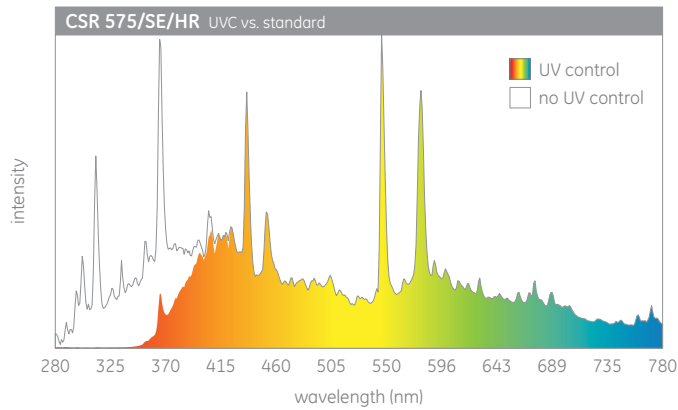


a typical low wattage, theatre class, tungsten halogen lamp

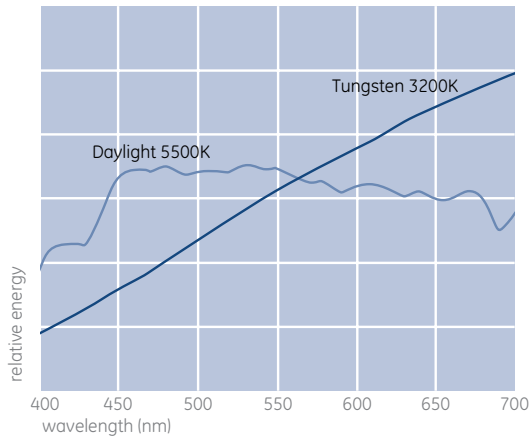


Spectral distribution of standard and UV control discharge lamps

The outer jacket of the lamp, which is produced with specially developed "UV control" material, absorbs potentially harmful, high-energy UV radiation emitted by the arc-tube. Below are spectral distribution curves illustrating how selected single-ended, hot restrike CSR lamps in table 28 have a UV control counterpart in table 29. The specially developed UV control material reduces UVB (280-315nm) and UVA (315-400nm) emissions significantly. The use of UV control material together with an optically neutral front glass cover allows the lamp to significantly reduce the risk of discoloration or fading of products and indeed damage to the fixture itself. These lamps still emit UV radiation which may cause eye/skin injury. Avoid any exposure of eyes and skin to an unshielded lamp.



Cinema fluorescent lamp characteristics



Cinema lamps require phosphor blends which better match Daylight and Tungsten Spectral Power Distribution (SPD) in order to provide predictable color for standard film processing — without the need for expensive filtering on the set.

GE Cinema design uses full spectrum phosphor blends for Cinematography lamps. Color is matched for Tungsten 3200K and Daylight 5500K spectra. Final matching is done using Minolta Ilf meter as a gage for determining filtering needs which become the effective color specification limits.

USAGE GUIDELINES

Warm Up Time

Allow at least 1/2 hour stabilization time before checking color of GE Cinema lamps. This applies to new and used lamps. Color will drift (mostly the mired shift, or LB value) during the warm up period.

Breakage During Set-up and Transport

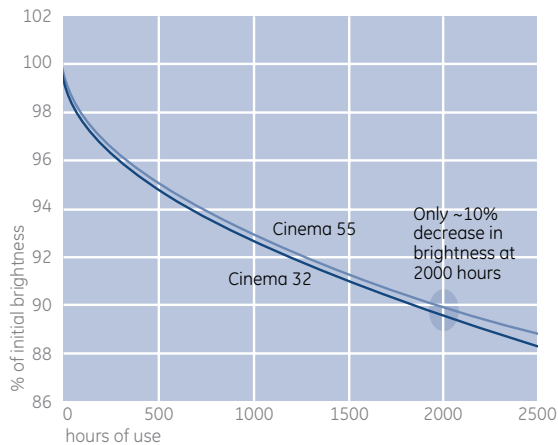
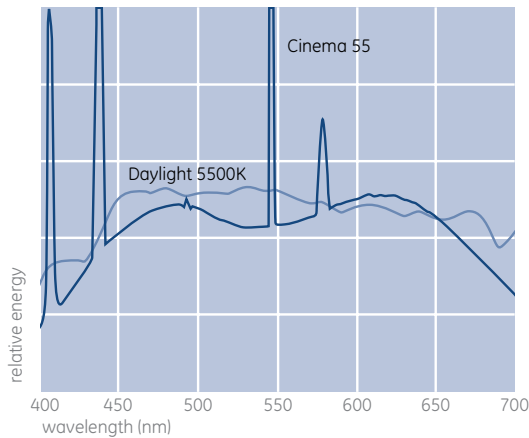
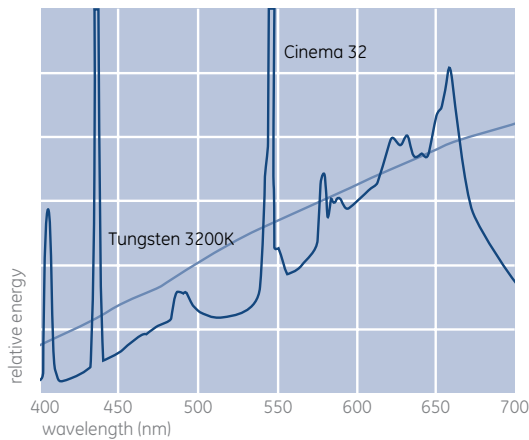
Specify covRguard® safety coated lamps when lamps will be moved and transported during use. The covRguard® design minimizes breakage and contains the lamp components if breakage occurs – minimizing set clean-up issues.

Ballast Compatibility

Assure that the correct type of ballast is used with Cinema lamps. High current ballast such as provided with Kino Flo fixtures require HO lamp types. If brightness control through dimming is desired, be sure to specify ballasts designed for dimmability.

Fixture Compatibility

GE recommends the F40/HO and F20/HO versions to be used in high current cinematography fixtures such as those manufactured by Kino Flo. The standard F40 and F20 Cinema lamps are recommended for ANSI approved general lighting fixtures.



Footnotes

- (1) Filament with low noise construction
- (3) Beam spread to 50% peak candlepower. Two numbers are horizontal by vertical.
- (4) Ceramic part of lamp base is slightly larger than other lamps in table 2, thus may not fit in some leaf-spring type lamp holders
- (5) Beam spread to 10% peak candlepower. Two numbers are horizontal by vertical.
- (6) Candlepower is the intensity (candelas) generally at the center or maximum intensity of the beam
- (7) Pinned base to insure correct application
- (8) Light Balancing (LB) index: mired shift value limit is ± 5 . Color compensating (CC) filter value limit $\pm 5m$. CC filter density: (+) magenta, (-) green. The LB and CC limits are specified to eliminate the need to add external color adjusting filters in cinemagraphic lighting.
- (9) Cinema32 lamps are 3200K (tungsten), chromaticity $x=.415$ $y=.377$, CRI 95, Gold bases
- (10) Cinema55 lamps are 5500K (daylight), chromaticity $x=.325$ $y=.321$, CRI 96, Blue bases
- (11) Biax Cinema32 are 3200K, chromaticity $x=.415$ $y=.380$, CRI 86
- (12) Filament shield masks direct light
- (13) Biax Cinema56 are 5600K, chromaticity $x=.330$ $y=.335$, CRI 86
- (14) Enclosed fixture only, per UL Standard 1572. In accordance to Federal Regulations (21 CFR 1040.30) the following notice applies:
WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if the outer envelope of the lamp is broken or punctured, and the arc tube continues to operate. Do not use where people will remain more than a few minutes unless adequate shielding or other safety precautions are used. Certain types of lamp that will automatically extinguish when the outer envelope is broken or punctured are commercially available.
- (15) Apparent lighted length slightly longer than similar clear lamp
- (19) Requires non-ANSI ballast. Narrow 6 degree spot with 1,350,000 CBCP.
- (22) Because of possible overheating, this lamp is not recommended for use without forced cooling in fixtures having deep-bowl, close-fitting reflectors with lamp axis crosswise to the reflector axis.
- (27) Has blackening collector grid on only one side of filament. In burning positions other than base down, lamp should be installed so that grid is above filament.
- (31) GE lamp is 240 volt; 250 volt is specified for Colortran.
- (51) Silica coated
- (52) Rough service. 6 filament supports.
- (55) Burn BDTH, but avoid horizontal burning with support spine beneath filament to prevent premature arcing



Cautions

62 | EXPOSED UNSHIELDED STAGE AND STUDIO LAMPS

⚠ WARNING

Risk of electrical shock

- Turn power off before inspection, installation or removal

Risk of fire

- Keep combustible materials away from lamp
- Use in enclosed fixture rated for this product

Pressurized lamp—unexpected rupture may cause injury, fire, or property damage

- Use eye protection when handling lamp
- Do not touch glass with bare hands
- Use in enclosed fixtures rated for this product
- Do not use lamp if outer glass is scratched or broken
- Operate lamp only in specified position
- Do not exceed 110% of rated voltage

⚠ CAUTION

Risk of burn

- Allow lamp/fixture to cool before handling
- Turn power off before installing lamp

Lamp may shatter and cause injury if broken

- Do not use lamp if outer glass is scratched or broken
- Dispose of lamp in a closed container
- Wear safety glasses and gloves when handling lamp

Lamp emits UV radiation which may cause eye/skin irritation. RG-2

- Limit unshielded exposure to less than 15 minutes per day

63 | PAR LAMPS AND GLASS COVERED STAGE AND STUDIO LAMPS

⚠ WARNING

Risk of electrical shock

- Turn power off before inspection, installation or removal

Risk of fire

- Keep combustible materials away from lamp
- Use in enclosed fixture rated for this product
- A damaged lamp emits UV radiation which may cause eye/skin injury
- Turn power off if glass is broken. Remove and dispose of lamp.

Pressurized lamp—unexpected rupture may cause injury, fire, or property damage

- Do not exceed 110% of rated voltage
- Avoid direct water/liquid contact
- Use in enclosed fixtures rated for this product
- Do not use lamp if outer glass is scratched or broken

⚠ CAUTION

Risk of burn

- Allow lamp/fixture to cool before handling
- Turn power off before installing lamp

Lamp may shatter and cause injury if broken

- Do not use lamp if outer glass is scratched or broken
- Dispose of lamp in a closed container

64 | HIGH WATTAGE INCANDESCENT PAR LAMPS

⚠ WARNING

Risk of electrical shock

- Turn power off before inspection, installation, or removal

Risk of fire

- Keep combustible materials away from lamp

Unexpected lamp rupture may cause injury, fire, or property damage

- Avoid direct water/liquid contact
- Use in enclosed fixtures rated for this product

171 | LINEAR FLUORESCENTS

⚠ WARNING

Risk of electrical shock

- Turn power off before inspection, installation, or removal

⚠ CAUTION

Lamp may shatter and cause injury if broken

- Wear safety glasses and gloves when handling lamp
- Do not use excessive force when installing lamp

307 | LOW WATTAGE HALOGEN PAR LAMPS

⚠ WARNING

Pressurized lamp—unexpected rupture may cause injury, fire, or property damage

- Do not use lamp if outer glass is scratched or broken
- Dispose of lamp in closed container



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Beijing National Stadium (Bird's Nest) - GE's Showbiz CSR Discharge Lighting opened the dramatic Olympic Ceremonies