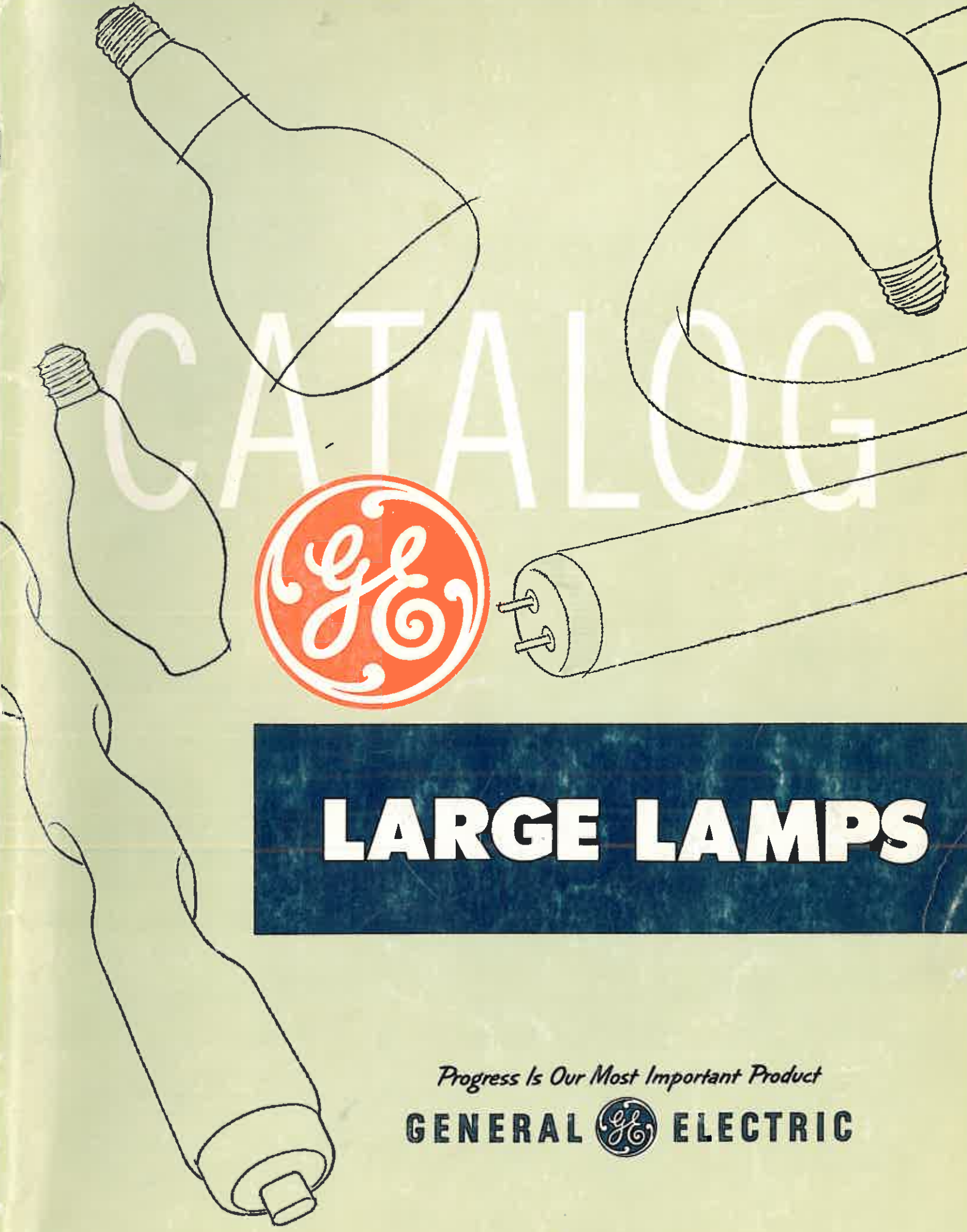


CATALOG

LARGE LAMPS

Progress Is Our Most Important Product

GENERAL ELECTRIC

large

LAMP CATALOG

FILAMENT

FLUORESCENT

INFRARED

MERCURY

SUN

GERMICIDAL

BLACK LIGHT

LARGE LAMP DEPARTMENT

GENERAL ELECTRIC

FOREWORD

This catalog lists and describes the different types and sizes of General Electric large lamps which are in most popular demand for the various lighting applications indicated. They include many recently developed lamps such as the Celeste, and High-Low, Bonus Line filament and mercury lamps, outdoor fluorescent and improved Power Groove lamps, the new colored Projector lamps, and the Quartzline lamps that never grow dim. They include also a few of the many types of lamps used for specialized services, such as in television studios, mines, infrared ovens, showcases, and optical devices. These are all products of the General Electric Large Lamp Department. Miniature lamps (flashlight, automotive, and glow lamps, to name a few types) and photographic lamps are made, respectively, by the Miniature and Photo Lamp Departments, and are not included in this Catalog.

Essential technical information, scaled illustrations, and brief descriptions of usage are given to assist buyers and sellers in selecting the right lamp for the particular application. No matter what the lighting requirement may be, there is a General Electric lamp designed specifically for that service. Information on lamps for more specialized services, as well as on additional types of lamps for the services listed, may be obtained through your General Electric Large Lamp Sales or Service District representative.

LARGE LAMP DEPARTMENT

GENERAL ELECTRIC

GENERAL ELECTRIC

catalog of large lamps

G-E LAMPS BY LIGHTING SERVICES OR TYPES

Note

Lamps shown in this catalog are approximately one-third actual size except Fluorescent, Germicidal, Lumiline, and the Mercury Lamps. Colored lamps are shown in as close to actual colors as possible.

EFFICIENCY STANDARDS ARE WRITTEN INTO G-E LAMP SPECIFICATIONS

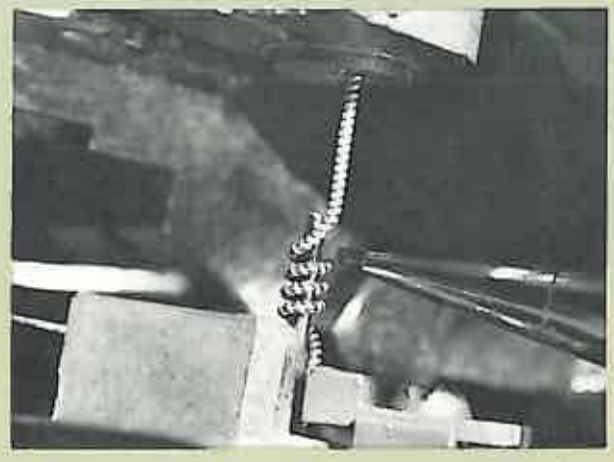
The efficiency of a lamp is expressed in terms of the amount of light produced per watt of current consumed over the entire life of the lamp. Every part of a lamp, from the tiniest bit of filament wire to the bulb itself affects the lamp's efficiency. To insure against physical defects or mechanical errors, complete specifications are written for each individual part of each of the more than 10,000 different types and sizes of G-E lamps manufactured.

There are at present nearly 1000 specifications for glass parts, over 200 specifications for bases, more than 6000 specifications for lead-in wires and supports, a countless variety of filament wire sizes, diameter, lengths and processing schedules and more than 200 different chemicals and components. Each specification, length and diameter of filament, spacing between filament coils, mandrel size, etc. is precise sometimes to one hundred thousandth of an inch. A filament which in one spot is 1% less in diameter than specified (in a 6-watt lamp this is five-millionths of an inch) may reduce its life 25%. A filament .00005 inch too small may cut lamp life 17%. Filament coils one ten thousandth of an inch out of line may shorten life by 20%. Critical design specifications are the first essential contribution to the high standards of quality set for G-E lamps.

Quality Standards Inspection is an "extra" inspection that benefits G-E lamp users. Inspectors who are independent of plant management stand at the end of the production lines and scrutinize sample quantities of the lamps that have been approved by plant inspectors.

Here, a Quality Standards Inspector checks a fluorescent lamp for evenness of phosphor coating and proper base dimensions. The daily results of QSI inspection are used by Lamp Division management to measure plant performance.

Light output test — this photometer, the world's largest, is designed to measure the light output of eight-foot fluorescent lamps. When the shells are closed, the light-sensitive walls measure the quantity and uniformity of the light produced.

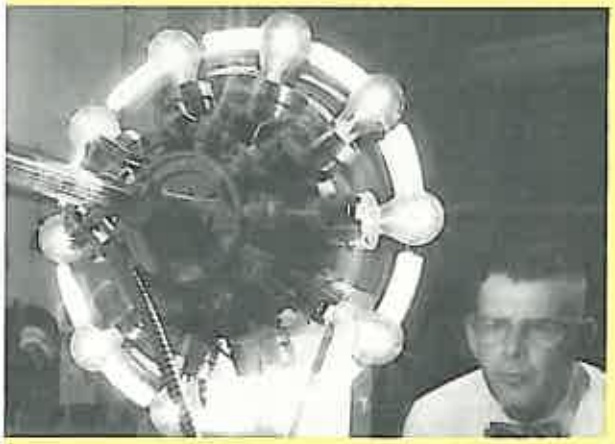


After swaging and drawing, the tiny wire may be wound into a triple-coiled filament. The single strand is coiled then recoiled, then recoiled a third time. This triple coiling allows only one per cent tolerance in wire 1/1000 of an inch in diameter.

THOROUGH TESTING ASSURES UNIFORM QUALITY FOR ALL G-E LAMPS

The General Electric testing laboratory at Nela Park, Cleveland, represents the most extensive lamp testing laboratory in the world. Tested and evaluated are more than 175,000 lamps a year, many produced by competitors. Electricity for testing alone costs $10,000 a month. Each day hundreds of lamps are checked for light-initial and maintained output; for watts consumed, light per watt; for life-length and early burnouts; for all important physical and electrical tolerances; for shape; for color; and many more characteristics. Tests are conducted under hot cold, moisture, high voltage and low voltage conditions. Lamps are shaken, dropped, spun around, vibrated, overworked and underpowered. As a result of this relentless checking and testing 99.9% of all G-E lamps are free from any defect that would adversely affect their performance.

Base Strength test — representative lamps are placed in this humidifier tank to test the strength of the cement which holds the bases to the bulbs. The lamps will stay in the tank for more than 85 hours.



Vibration test — lamps which are in the design stage receive particularly vigorous testing. Shown here is one of the vibration tests which helps determine filament strength.

Life test — sample lamps are burned until they fail, giving an accurate measurement of the length of service customers can expect.

Heat test — this "home oven" is used for testing lamps designed for service in home "hot spots", such as ovens. Lamps are subjected to 475° F heat for 1,000 hours, or until they burn out.

ALL G-E PLANTS COMPETE ON QUALITY RATINGS

The tiny filament used in a lamp is the end product of this imposing battery of wire drawing machines. As many as 75 separate drawings are required to reduce tungsten rod to wire that is thinner than human hair.

As further assurance of highest quality in all lamps, testing laboratory personnel are placed at each of G-E's ten manufacturing plants to spot check lamps for independent inspection. Each plant is rated on the quality it actually produces each month.

In a second testing program, sample lamps from each plant are sent to Nela Park for a thorough independent series of tests. The results of these tests are used to guide the quality of production and to obtain information on which ratings are based.

A third part of the regular testing program is the checking of competitor's lamps for longevity, brightness, starting characteristics, maintenance cost, uniformity, physical structure, color, efficiency.

In a fourth testing operation, the testing laboratory in cooperation with the advanced engineering section carries out comprehensive tests on all lamps in their development stages.

In a pilot plant with complete manufacturing facilities new equipment and techniques are proved out through actual mass production of lamps. Thus through cooperation of design experts, research scientists, testing laboratories, quality contests, production line checks and pilot plant operations, there is a never-ending effort to prove and improve the uniform high quality of all General Electric lamps.

Advanced manufacturing techniques are tested in this closely supervised pilot plant. As new equipment and processes are developed, they are given extensive field trials in the pilot plant before being placed in wide service in the regular manufacturing plants.

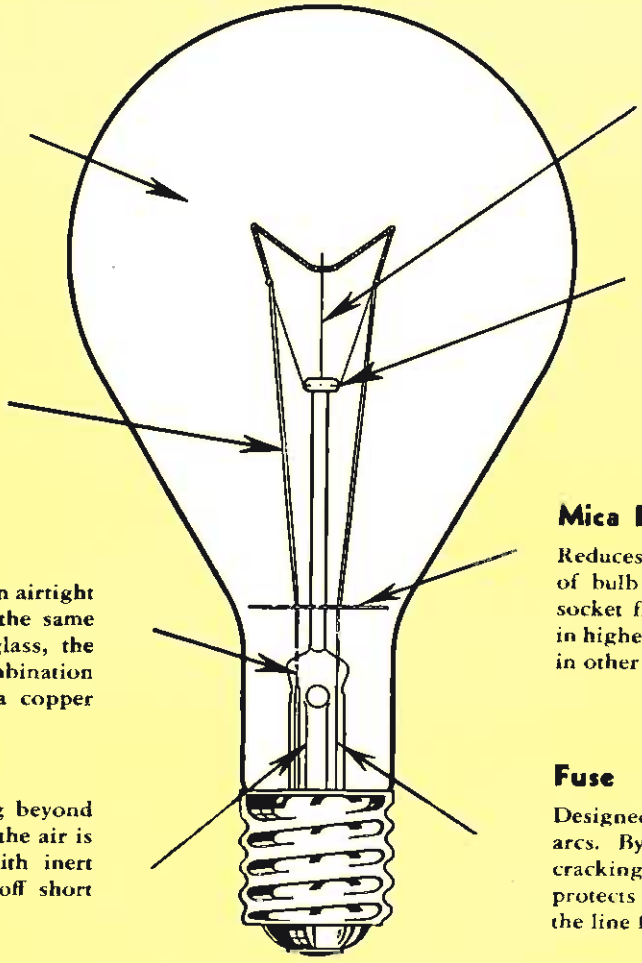
GENERAL ELECTRIC LAMP PARTS

Gas
Used in most lamps of 40 watts and above, prevents rapid evaporation of the filament, permitting higher temperatures which result in higher efficiencies. Gas-filled lamps are indicated by the letter C, vacuum lamps by the letter B. Usual gas is a mixture of nitrogen and argon. Some lamps for special services may use krypton.

Lead-in Wires
Conduct the current to and from the filament; copper used from base to stem press and nickel from stem press to filament.

Stem Press
The glass and lead-in wires have an airtight seal here. To have substantially the same coefficient of expansion at the glass, the lead-in wire at this point is a combination of a nickel-iron alloy core and a copper sleeve (Dumet wire).

Exhaust Tube
It is through this tube, projecting beyond the bulb during manufacture, that the air is exhausted and the bulb filled with inert gases. The tube is then sealed off short enough for the base to fit over it.



Support Wires
Molybdenum wires hold the filament in place; minimum number desirable to reduce heat losses.

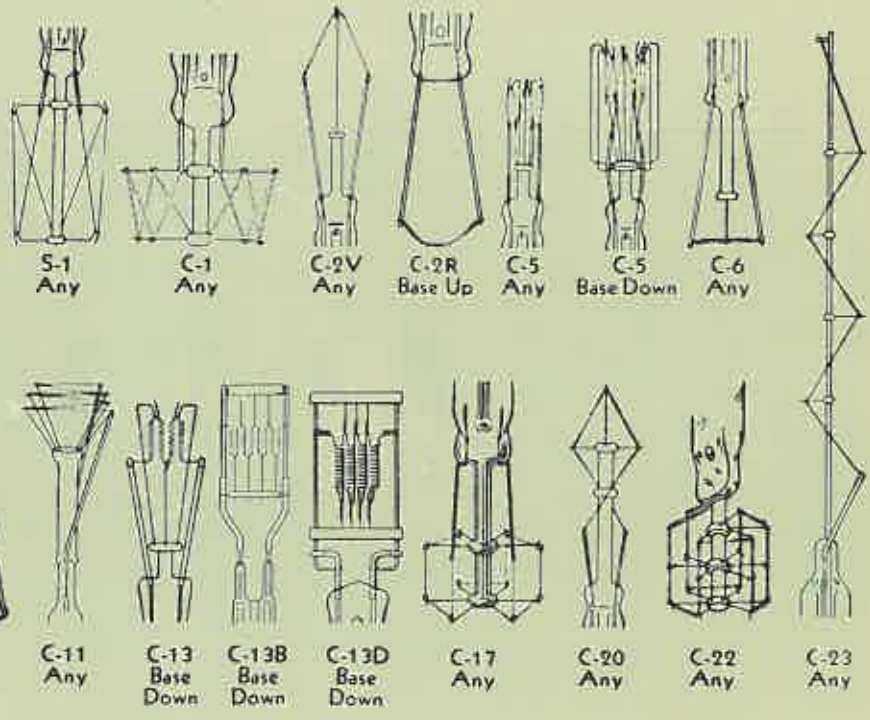
Button
The glass is softened during assembly and the support wires stuck in it. It is supported by the button rod.

Mica Disc
Reduces circulation of hot gases into neck of bulb protecting stem press, stem and socket from excessive temperatures. Used in higher wattage general service lamps and in other types when needed.

Fuse
Designed to open the circuit if the filament arcs. By reducing sputtering of the metal, cracking of the bulb is prevented. It also protects the circuit and prevents blowing of the line fuses.

FILAMENTS

Electric current passing through the filament must overcome its resistance and the power consumed heats the filament to incandescence. The almost universally used filament material is tungsten. The filament may be straight wire, a coil, or a coiled-coil (indicated respectively by the letters S, C and CC). Coiling the wire reduces gas losses, increases efficiency. The illustrations show some of the commonly used filament forms (numerals) and their specific burning positions.



G·E BASES

Screw bases in one of several sizes are used on most filament lamps. Bipost or prefocus bases are used where accurate position of light source with relation to optical elements is important. Mechanical bases are used in some high-wattage lamps, flood lights and street series lamps to provide greater strength and better all around performance. Bipin, single-pin and double-contact recessed bases are used on fluorescent lamps.

Candelabra
Cand

Candelabra Skirted
Cand. Skirted

Intermediate
Inter

Single Contact Bayonet Candelabra
S. C. Bay

Double Contact Bayonet Candelabra
D. C. Bay

Candelabra Prefocus
S. C. Pf
D. C. Pf

D.C. Medium ring

Medium
Med

Three Contact Medium
3 C. Med

Admedium
Admed

Medium Prefocus
Med. Pf

Disc
(Lumiline)

3-lug sleeve

Medium Skirted
Med. Skt

Medium Skirted
Med. Skt

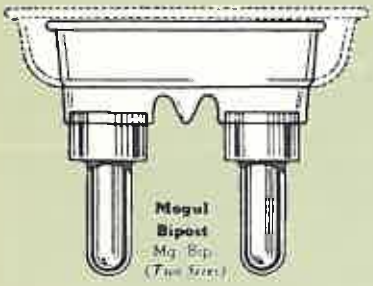
Medium Skirted
Med. Skt

Admedium Skirted
Admed. Skt

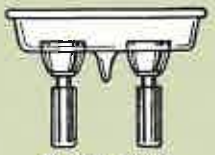
Mogul
Mog

Three Contact Mogul
3 C. Mog

Mogul Prefocus
Mog. Pf

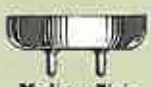


Mogul Bipost
Mg. Bp.
(Two Sizes)



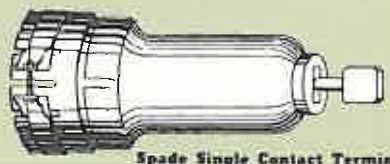
Medium Bipost
Md. Bp.

Medium Bipin
Med. Bipin
(T-8 F Lamp)



Medium Bipin
Med. Bipin
(T-12 F Lamp)

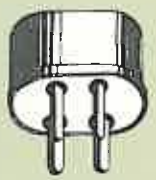
Mogul Bipin
Mog. Bipin
(T-17 F Lamp)



Spade Single Contact Terminal
S. C. Term
(H300 A9 Lamp)

4-Pin
(Circline)

Recessed Single Contact
(Quartzline)



Oval Small 4-Pin
(4-Watt Germicidal)

Single Pin
(T-6 Slimline)

Single Pin
(T-8 Slimline)

Single Pin
(T-12 Slimline)

Miniature Bipin
Min. Bipin
(T-5 F Lamp)

Recessed Double Contact
Recessed D. C.
(High Output)
(Power Groove)

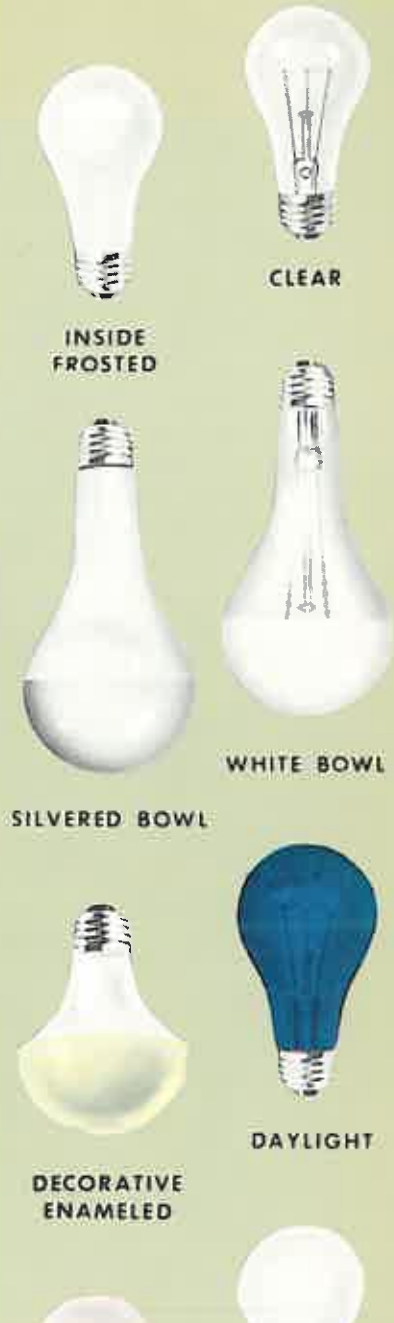
Recessed Double Contact
Recessed D. C.
(F96T10)

G·E BULB SHAPES

The general shape of a lamp bulb is indicated by a letter or letter combination which usually is the initials of the word or words describing the shape. Thus the shapes indicated by the letters under the lamps above are:

A — Arbitrary designation
B — Arbitrary designation
BT — Bulged tubular
C — Cone shape
F — Flame shape
FC — Circline
G — Globular
GA — Combination of G and A shapes
P — Pear shape
PAR — Parabolic aluminized reflector
PG — Power Groove
PS — Pear shape, straight neck
R — Reflector
RB — Reflector
S — Straight side
T — Tubular

The over-all length of a lamp is measured from top of bulb to bottom of base. The approximate diameter, measured through the greatest diameter, is given in eighths of an inch. Thus a G-25 bulb is globe shape — twenty-five eighths inches or three and one-eighth inches in diameter.



G·E BULB FINISHES

Several different finishes are applied to lamp bulbs to obtain a desired control of light, to affect the quality of the light or to produce desired color of light. Lamp ordering abbreviations are generally made up of wattage, bulb shape, size in eigths of an inch and finish, use or other description.

G·E CLEAR LAMPS

Clear lamps are suitable for many general lighting applications when used in equipments that keep the bright filament from being seen, either by means of diffusing materials or shielding reflectors.

Gala lighting for amusement and festive areas however can be obtained with clear, low-wattage lamps, unshielded. Or the lamps may be partially shielded by prisms, beads, or spangles.

Some reflecting or refracting units, designed for defined beam patterns, need clear lamps to permit greater optical control of the light than is possible with frosted lamps.


10S14


15A15/CL


50A/CL
60A/CL
75A/CL


100A/CL


150A/CL


200A/CL


95A/CL


40A/CL

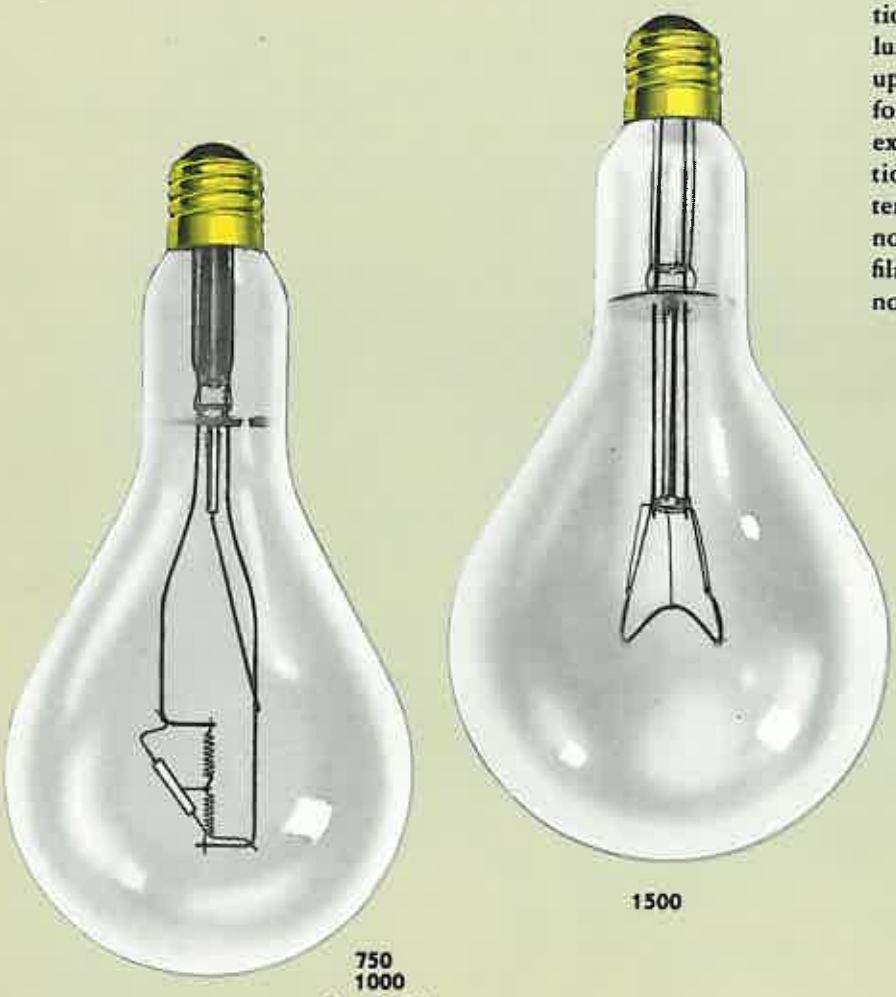

500


300


300M


200PS30/12


200



750
1000
Bonus Line

1500

The 750- and 1000-watt Bonus Line lamps have the new CC-8 axial filament construction for improved efficiency and better lumen maintenance when burned in a base-up position. These lamps are used not only for general lighting service, but are also excellent for most floodlighting applications. In special cases where the beam pattern that results from the axial filament is not satisfactory, lamps having the older C-7A filament design (the 750/7 and 1000/7, not listed below) are recommended.

CLEAR LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Approx. Initial Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
10S14	10	S-14	Med.	115-125	120	B	C-9	1500	80	2 1/2	3 1/2
15A15/CL	15	A-15	Med.	120	120	B	C-9	1200	144	2 3/8	3 1/2
25A/CL	25	A-19	Med.	120	120	B	C-9	1000	268	2 1/2	3 15/16
40A/CL	40	A-19	Med.	120	120	C	C-9	1000	470	2 7/8	4 1/4
50A/CL	50	A-19	Med.	120	120	C	CC-6	1000	665	3 1/8	4 7/16
60A/CL	60	A-19	Med.	120	120	C	CC-6	1000	840	3 1/8	4 7/16
75A/CL	75	A-19	Med.	120	120	C	CC-6	750	1150	3 1/8	4 7/16
100A/CL	100	A-21	Med.	120	120	C	CC-6	750	1640	3 7/8	5 5/16
150A/CL	150	A-23	Med.	120	60	C	CC-6	750	2700	4 5/8	6 5/16
150/CL	150	PS-25	Med.	120	60	C	C-9	750	2640	5 1/4	6 15/16
200A/CL	200	PS-25	Med.	120	60	C	CC-6	750	3800	5 1/4	6 15/16
200	200	PS-30	Med.	120	60	C	C-9	750	3720	6	8 1/16
200PS30/12	200	PS-30	Mog.	120	60	C	C-9	750	3650	6 3/8	8 7/16
300M	300	PS-30	Med.	120	60	C	C-9	750	6000	6	8 1/16
300	300	PS-35	Mog.	120	24	C	C-9	1000	5750	7	9 3/8
500	500	PS-40	Mog.	120	24	C	C-9	1000	9900	7	9 3/4
750	750	PS-52	Mog.	120	6	C	CC-8	1000	16700	9 1/2	13 1/16
1000	1000	PS-52	Mog.	120	6	C	CC-8	1000	23300	9 1/2	13 1/16
1500	1500	PS-52	Mog.	105,110,120	6	C	C-7A	1000	33000	9 1/2	13 1/16

G·E INSIDE FROSTED LAMPS

These lamps, which are recommended for most general lighting applications that use filament lamps, have an inside frosting that diffuses the light, eliminates striations, and helps soften shadows. The outer bulb surfaces are smooth, easy to clean, and the frosting absorbs very little light.

The range of wattages and lumen values is comprehensive. These lamps, combined with the many types of good equipments now available, provide tools to meet the many and diverse needs for residential, commercial and industrial lighting. There are small lighting units for local lighting and low mounting heights, and larger ones for higher mounting and wider spacing. The right lamp in combination with the right reflector is essential for effective and comfortable lighting.

750/IF
1000/IF
1500/IF

750T24
1M/T24

The 100AX, 750/IF and 1000/IF Bonus Line lamps have a new type axial filament (CC-8), which increases light output substantially when the lamps are burned in a base-up position.

The 100AX lamp in the A-19 bulb extends the usefulness and versatility of many lighting equipments that could not accommodate the larger A-21 bulbs.

For somewhat specialized uses, 750-watt, and 1000-watt lamps are available with tubular bulbs of heat-resistant glass, and with medium bipost bases. These lamps make possible the design of commercial and industrial lighting equipments smaller in size than would be necessary if designed for equal wattages in standard PS bulbs.

INSIDE FROSTED LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
10S14/IF	10	S-14	Med.	120	120	B	C-9	1500	80	2 1/2	3 1/2
15A15	15	A-15	Med.	120	120	B	C-9	1000	142	2 3/8	3 1/2
25A	25	A-19	Med.	120	120	B	C-9	1000	265	2 3/8	3 1/2
40A	40	A-19	Med.	120	120	C	C-9	1000	470	2 7/8	4 1/4
50A	50	A-19	Med.	120	120	C	CC-6	1000	665	3 1/8	4 7/16
60A	60	A-19	Med.	120	120	C	CC-6	1000	840	3 1/8	4 7/16
75A	75	A-19	Med.	120	120	C	CC-6	750	1150	3 1/8	4 7/16
100A	100	A-21	Med.	120	120	C	CC-6	750	1640	3 7/8	5 5/16
100AX	100	A-19	Med.	120	120	C	CC-8	750	1700	3 1/8	4 7/16
150A	150	A-23	Med.	120	60	C	CC-6	750	2700	4 5/8	6 5/16
150	150	PS-25	Med.	120	60	C	C-9	750	2640	5 1/4	6 13/16
200A	200	PS-25	Med.	120	60	C	CC-6	750	3800	5 1/4	6 13/16
200/IF	200	PS-30	Med.	120	60	C	C-9	750	3720	6	8 1/16
300M/IF	300	PS-30	Med.	120	60	C	C-9	750	6000	6	8 1/16
300/IF	300	PS-35	Mog.	120	24	C	C-9	1000	5750	7	9 3/8
500/IF	500	PS-40	Mog.	120	24	C	C-9	1000	9900	7	9 3/4
750/IF	750	PS-52	Mog.	120	6	C	CC-8	1000	16700	9 1/2	13 1/16
750T24②③	750	T-24	Md. Bip.	120	24	C	C-13	1000	14200	5 1/2	9 1/8
1M/T24②③	1000	T-24	Md. Bip.	120	24	C	C-13	1000	20000	5 1/2	9 1/8
1000/IF	1000	PS-52	Mog.	120	6	C	CC-8	1000	23300	9 1/2	13 1/16
1500/IF①	1500	PS-52	Mog.	120	6	C	C-7A	1000	33000	9 1/2	13 1/16

①Recommended burning position any within 60° vertically base up or base down but lumen maintenance is best when burned vertically base up.

②Burn base up. ③Special glass bulb — Heat-resistant.

G·E SOFT WHITE LAMPS

Soft white lamps have a fine coating of silica on the inside of the bulb. This coating gives a high degree of diffusion which softens shadows and reduces the brightness of shiny reflection. The light output of these lamps is approximately the same as that of inside frosted lamps of the same wattage. Since bulb blackening is not apparent through this new diffuse coating the lamps appear clean and white throughout life.

All sizes of Soft White lamps are especially suitable for use in residential fixtures and portable lamps. The 150R/W bulb produces a controlled distribution of light when used in lamps without diffusing bowls.

In addition to good diffusion and attractive appearance the 100-watt Soft White lamp bulb is smaller and has a new filament which produces 5% more light during its life than the previously used filament. Its smaller size permits usage in equipment limited to A-19 size bulbs.

SOFT WHITE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches	Lumens
40A/W	**40**	**A-19**	**Med.**	**120**	120	C	C-9	1000	$2\frac{7}{8}$	$4\frac{1}{4}$	470
60A/W	**60**	**A-19**	**Med.**	**120**	120	C	CC-6	1000	. . .	$4\frac{7}{16}$	840
75A/W	**75**	**A-19**	**Med.**	**120**	120	C	CC-6	750	$3\frac{1}{8}$	$4\frac{7}{16}$	1150
100AX/W	**100**	**A-19**	**Med.**	**120-125**	120	C	CC-8	750	$3\frac{1}{8}$	$4\frac{7}{16}$	1700
150A/W	**150**	**A-23**	**Med.**	**120**	60	C	CC-6	750	$4\frac{5}{8}$	$6\frac{5}{16}$	2700
150R/W	**150**	**R-40**	**Med.**	**120**	24	C	C-9	1000	. . .	$6\frac{3}{16}$	2200

G·E DECORATIVE ENAMEL BOWL LAMPS

50GA

50GA/DPK

The Decorative Enamel Bowl lamp is intended for use with open-type single and cluster ceiling fixtures now using unshaded lamps. Designed for base-up burning, the lamp has an enameled bowl of a warm pleasing tint which directs approximately 2/3 of the light upward and 1/3 downward.

The 50-watt lamp in ivory or pink, is especially appropriate for two, three, four and five light fixtures. The graceful contours and unusual style of these lamps appeal to the decorative tastes of many users such as homes, hotels, clubs, restaurants and public buildings.

DECORATIVE ENAMEL BOWL LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Lumens	Max. Ovrl. Lgth.
50GA	50	GA-25	Med.	115-125	Semi Indirect① I. F. Decorated Enamel Bowl	60	C	C-9	1000	600	4 7/16
50GA/DPK	50	GA-25	Med.	115-125	Dawn Pink① Enamel Bowl	60	C	C-9	1000	600	4 7/16

① Burn base up.

G·E LUMILINE LAMPS

Lumiline lamps give a continuous line of light and are well suited for built-in lighting, particularly where space limitation is a factor, such as in displays, niches, small coves, signs, mirrors, paintings, and luminous panels.

LUMILINE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Lumens	Max. Ovrl. Lgth. Inches
L30/IF	30	T-8	Disc	115-125	Inside Frosted	24	B	C-8	1500	255	17¾
L30/W	30	T-8	Disc	115-125	White	24	B	C-8	1500	210	17¾
L40	40	T-8	Disc	115-125	Clear	24	B	C-8	1500	380	11¾
L40/IF	40	T-8	Disc	115-125	Inside Frosted	24	B	C-8	1500	375	11¾
L40/MB	40	T-8	Disc	115-125	Moonlight Blue	24	B	C-8	1500	....	11¾
L40/EM	40	T-8	Disc	115-125	Emerald	24	B	C-8	1500	....	11¾
L40/O	40	T-8	Disc	115-125	Orange	24	B	C-8	1500	....	11¾
L40/SPK	40	T-8	Disc	115-125	Surprise Pink	24	B	C-8	1500	....	11¾
L40/ST	40	T-8	Disc	115-125	Straw	24	B	C-8	1500	..	11¾
L40/W	40	T-8	Disc	115-125	White	24	B	C-8	1500	....	11¾
L40/R	40	T-8	Disc	115-125	Red	24	B	C-8	1500	....	11¾
L60	60	T-8	Disc	115-125	Clear	24	B	C-8	1500	580	17¾
L60/IF	60	T-8	Disc	115-125	Inside Frosted	24	B	C-8	1500	575	17¾
L60/MB	60	T-8	Disc	115-125	Moonlight Blue	24	B	C-8	1500	....	17¾
L60/EM	60	T-8	Disc	115-125	Emerald	24	B	C-8	1500	....	17¾
L60/O	60	T-8	Disc	115-125	Orange	24	B	C-8	1500	....	17¾
L60/SPK	60	T-8	Disc	115-125	Surprise Pink	24	B	C-8	1500	....	17¾
L60/ST	60	T-8	Disc	115-125	Straw	24	B	C-8	1500	....	17¾
L60/W	60	T-8	Disc	115-125	White	24	B	C-8	1500	465	17¾

G·E COLORAMIC LAMPS

G-E Coloramic Lamps have introduced a new concept in residential lighting and provide new lighting effects for shops, hotels, restaurants and special displays. The four colors were selected to work harmoniously with a wide variety of colors and color schemes. The light from each color is also softened by the diffuse ceramic enamel coating on the lamp bulbs.

All four colors in the Coloramic line achieve highly desirable and pleasing effects on both furnishings and complexions because each contains a special exclusive G-E development—the "Red Component" of color. This is the element in light that gives the vital glow of life and health to all it touches. Even in light from Spring Green and Sky Blue bulbs, the warm tones persist. One or more colors may be used with pleasant color effects in any room, with any color scheme. They enhance the appearance of any material, woods, fabrics, metals, leather and bring out soft glowing skin tones. All colors produce intriguing changes from ordinary white light.

See also 3-way Coloramic lamps on page 22.

The four General Electric Coloramic colors Sun Gold, Dawn Pink, Spring Green and Sky Blue, are related to the colors of light found in nature's effects which each name suggests.

Sun gold is radiant, warm, — like the sunset.

Dawn Pink is like the tinted early morning clouds.

Spring Green is like the color of new foliage.

Sky Blue is cool and soft. Everything that is red is brought to life even though the light is bluish.

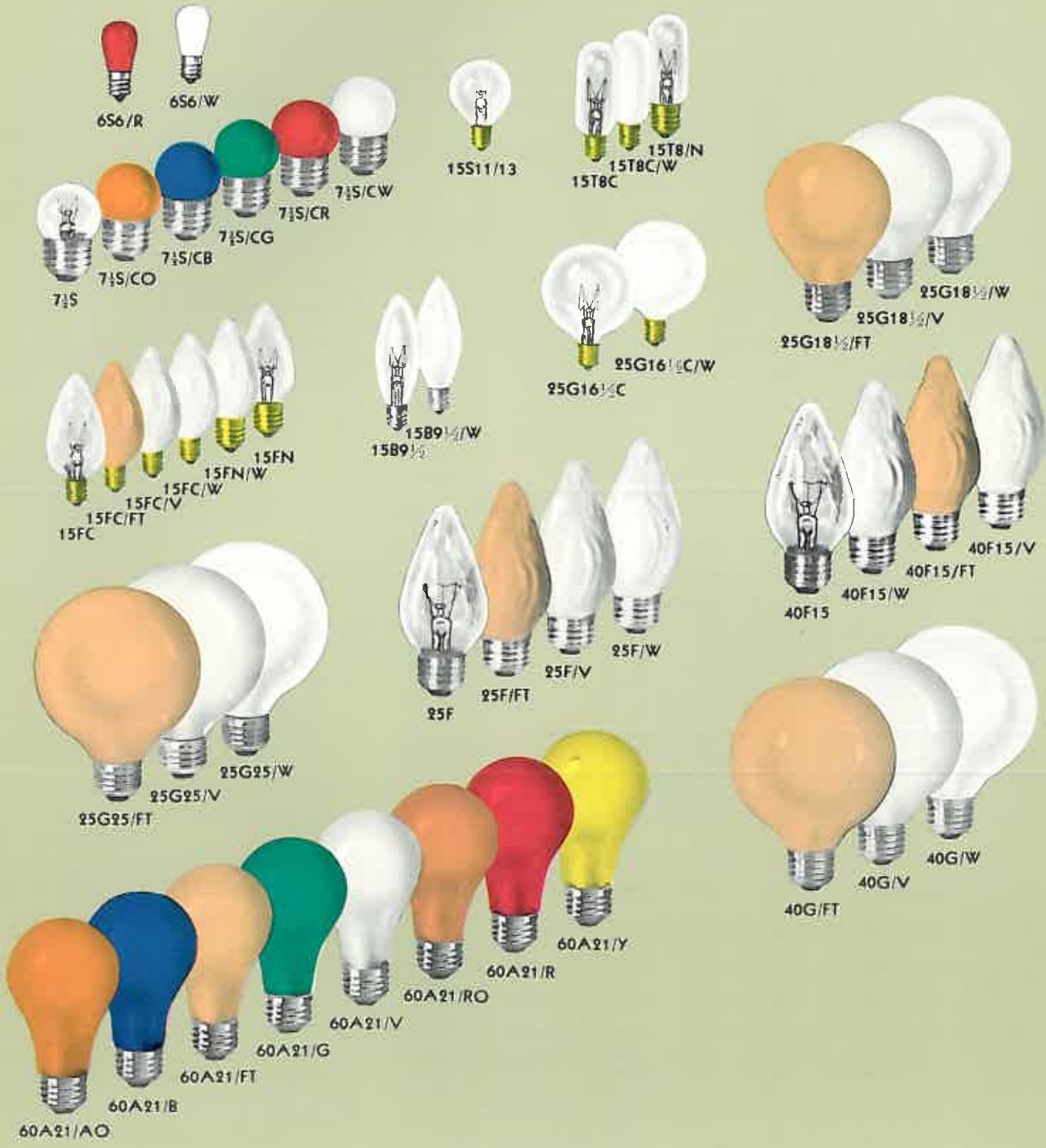
Each of the four Coloramic colors is available in four wattages — 75, 100, 150 and 50/100 watts.

COLORAMIC LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Max. Ovrl. Lgth. Inches
25F/DPK	25	F15 Decorative	Med.	115–125	Coloramic Dawn Pink	120	B	C-9	750	4½
40A/DPK	40	A-19	Med.	115-125	Coloramic Dawn Pink	120	B	C-9	1000	4¼
50GA/DPK	50	GA-25	Med.	115–125	Coloramic Enamel Bowl Dawn Pink	60	C	C-9	1000	4 7/16
60A/DPK	60	A-19	Med.	115–125	Coloramic Dawn Pink	120	C	CC-6	1000	4 7/16
100/300/DPK	100 200 300	G-30	3C. Mog.	115–125	Three-Lite Indirect Coloramic Dawn Pink①	60	C	2C-2R	1000	6¾
50/150M/SKY	50 100 150	PS-25	3C. Med.	115–125	Coloramic Three-Lite Sky Blue①	60	C	2C-2R	750	5 1/8
50/150M/SPG	50 100 150	PS-25	3C. Med.	115–125	Coloramic Three-Lite Spring Green①	60	C	2C-2R	750	5 1/8
50/150M/SUN	50 100 150	PS-25	3C. Med.	115–125	Coloramic Three-Lite Sun Gold①	60	C	2C-2R	750	5 1/8
50/150M/DPK	50 100 150	PS-25	3C. Med.	115–125	Coloramic Three-Lite Dawn Pink①	60	C	2C-2R	750	5 1/8
75A/SKY	75	A-19	Med.	115–125	Coloramic Sky Blue	120	C	CC-6	1000	4 7/16
75A/SPG	75	A-19	Med.	115–125	Coloramic Spring Green	120	C	CC-6	1000	4 7/16
75A/SUN	75	A-19	Med.	115–125	Coloramic Sun Gold	120	C	CC-6	1000	4 7/16
75A/DPK	75	A-19	Med.	115–125	Coloramic Dawn Pink	120	C	CC-6	1000	4 7/16
100A/SKY	100	A-21	Med.	115–125	Coloramic Sky Blue	120	C	CC-6	1000	5 5/16
100A/SPG	100	A-21	Med.	115-125	Coloramic Spring Green	120	C	CC-6	1000	5 5/16
100A/SUN	100	A-21	Med.	115–125	Coloramic Sun Gold	120	C	CC-6	1000	5 5/16
100A/DPK	100	A-21	Med.	115–125	Coloramic Dawn Pink	120	C	CC-6	1000	5 5/16
150A/SKY	150	A-23	Med.	115–125	Coloramic Sky Blue	60	C	CC-6	1000	6 5/16
150A/SPG	150	A-23	Med.	115–125	Coloramic Spring Green	60	C	CC-6	1000	6 5/16
150A/SUN	150	A-23	Med.	115–125	Coloramic Sun Gold	60	C	CC-6	1000	6 5/16
150A/DPK	150	A-23	Med.	115-125	Coloramic Dawn Pink	60	C	CC-6	1000	6 5/16

① Base down.

G·E DECORATIVE LAMPS

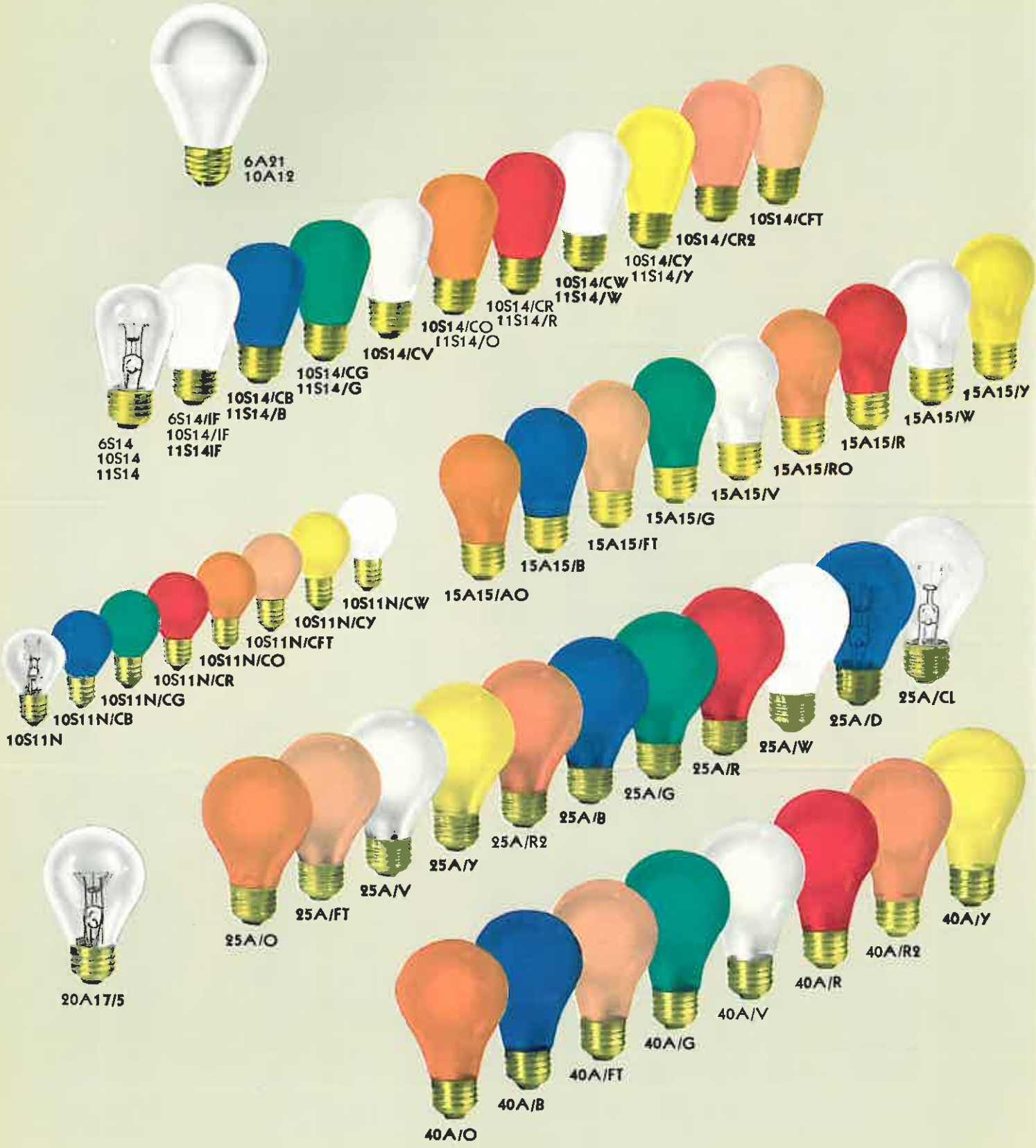


These decorative lamps are designed for interior applications such as cove lighting, decorative designs, and special effects in homes, theatres, public buildings, restaurants, lobbies, and foyers. Outside coated lamps are not recommended for outdoor use.

DECORATIVE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Lumens	Light Cntr. Length Inches	Max. Ovrl. Length Inches
6S6/R	6	S-6	Cand.	115-125	Red	240	B	C-7A	1500	....	....	1 7/8
6S6/W	6	S-6	Cand.	115-125	White	240	B	C-7A	1500	....	....	1 7/8
7½S	7½	S-11	Med.	115-125	Clear	120	B	C-7A	1400	52	....	2 1/4
7½S/CO	7½	S-11	Med.	115-125	Orange	120	B	C-7A	1400	....	....	2 1/4
7½S/CB	7½	S-11	Med.	115-125	Blue	120	B	C-7A	1400	....	....	2 1/4
7½S/CG	7½	S-11	Med.	115-125	Green	120	B	C-7A	1400	....	....	2 1/4
7½S/CR	7½	S-11	Med.	115-125	Red	120	B	C-7A	1400	....	....	2 1/4
7½S/CW	7½	S-11	Med.	115-125	White	120	B	C-7A	1400	....	....	2 1/4
15FC	15	F-10	Cand.	115-125	Clear	60	B	C-7A	750	150	....	3 1/16
15FC/FT	15	F-10	Cand.	115-125	Flametint	60	B	C-7A	750	....	....	3 1/16
15FC/V	15	F-10	Cand.	115-125	Ivory	60	B	C-7A	750	....	....	3 1/16
15FC/W	15	F-10	Cand.	115-125	White	60	B	C-7A	750	....	....	3 1/16
15FN	15	F-10	Inter.	115-125	Clear	60	B	C-7A	750	147	....	3 1/8
15FN/W	15	F-10	Inter.	115-125	White	60	B	C-7A	750	....	....	3 1/8
15S11/13	15	S-11	Cand.	115-125	Clear	120	B	C-7A	750	150	1 5/8	2 1/4
15T8C	15	T-8	Cand.	115-125	Clear	60	B	C-7A	750	150	....	3 1/16
15T8C/W	15	T-8	Cand.	115-125	OC-White	60	B	C-7A	750	....	....	3 1/16
15T8/N	15	T-8	Inter.	115-125	Clear	60	B	C-7A	750	148	....	3 1/8
15B9½	15	B-9½	Cand.	115-125	Clear	60	B	C-7A	750	150	....	3 5/16
15B9½/W	15	B-9½	Cand.	115-125	OC-White	60	B	C-7A	750	....	....	3 5/16
25F	25	F-15	Med.	115-125	Clear	120	B	C-9	750	278	....	4 1/2
25F/FT	25	F-15	Med.	115-125	OC-Flametint	120	B	C-9	750	....	....	4 1/2
25F/V	25	F-15	Med.	115-125	OC-Ivory	120	B	C-9	750	....	....	4 1/2
25F/W	25	F-15	Med.	115-125	OC-White	120	B	C-9	750	....	....	4 1/2
25G16½C	25	G-16½	Cand.	115-125	Clear	60	B	C-7A	750	260	....	3
25G16½C/W	25	G-16½	Cand.	115-125	White	60	B	C-7A	750	....	....	3
25G18½/FT	25	G-18½	Med.	115-125	OC-Flametint	120	B	C-9	750	....	....	3 9/16
25G18½/V	25	G-18½	Med.	115-125	OC-Ivory	120	B	C-9	750	....	....	3 9/16
25G18½/W	25	G-18½	Med.	115-125	OC-White	120	B	C-9	750	....	....	3 9/16
25G25/FT	25	G-25	Med.	115-125	OC-Flametint	60	B	C-9	750	....	....	4 7/16
25G25/V	25	G-25	Med.	115-125	OC-Ivory	60	B	C-9	750	....	....	4 7/16
25G25/W	25	G-25	Med.	115-125	OC-White	60	B	C-9	750	....	....	4 7/16
40F15	40	F-15	Med.	115-125	Clear	120	C	C-9	750	455	....	4 1/2
40F15/W	40	F-15	Med.	115-125	White	120	C	C-9	750	....	....	4 1/2
40F15/FT	40	F-15	Med.	115-125	Flametint	120	C	C-9	750	....	....	4 1/2
40F15/V	40	F-15	Med.	115-125	Ivory	120	C	C-9	750	....	....	4 1/2
40G/FT	40	G-25	Med.	115-125	OC-Flametint	60	B	C-9	750	....	....	4 7/16
40G/V	40	G-25	Med.	115-125	OC-Ivory	60	B	C-9	750	....	....	4 7/16
40G/W	40	G-25	Med.	115-125	OC-White	60	B	C-9	750	....	....	4 7/16
60A21/AO	60	A-21	Med.	115-125	OC-Amber Orange	120	C	C-9	1000	....	....	4 15/16
60A21/B	60	A-21	Med.	115-125	OC-Blue	120	C	C-9	1000	....	....	4 15/16
60A21/FT	60	A-21	Med.	115-125	OC-Flametint	120	C	C-9	1000	....	....	4 15/16
60A21/G	60	A-21	Med.	115-125	OC-Green	120	C	C-9	1000	....	....	4 15/16
60A21/V	60	A-21	Med.	115-125	OC-Ivory	120	C	C-9	1000	....	....	4 15/16
60A21/RO	60	A-21	Med.	115-125	OC-Old Rose	120	C	C-9	1000	....	....	4 15/16
60A21/R	60	A-21	Med.	115-125	OC-Red	120	C	C-9	1000	....	....	4 15/16
60A21/Y	60	A-21	Med.	115-125	OC-Yellow	120	C	C-9	1000	....	....	4 15/16

SIGN AND DECORATIVE LAMPS



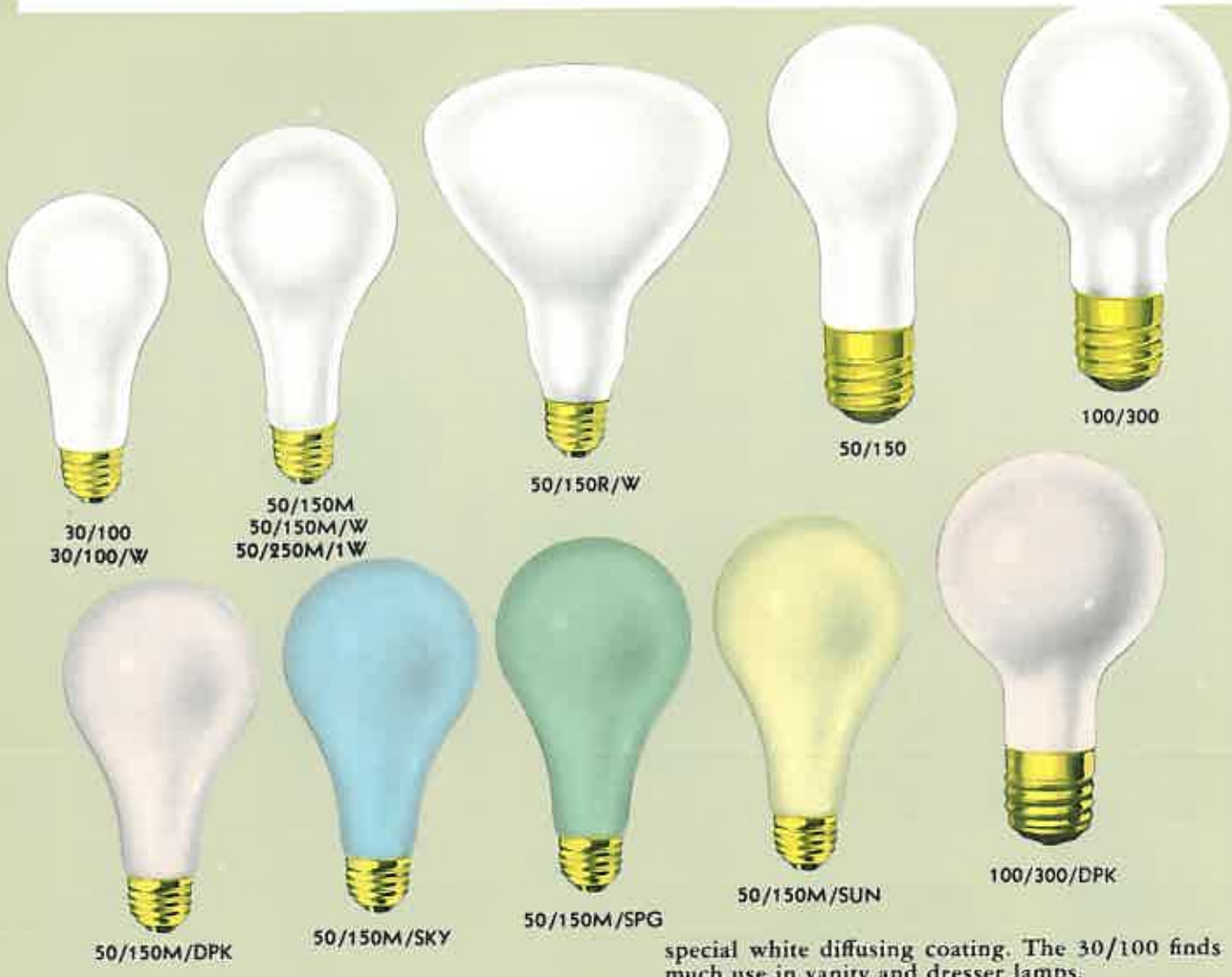
These lamps are used for outdoor signs, Christmas decorations, carnivals, fairs, and festoon lighting as well as for many interior applications. The colors are vivid and bright and consist of a fired-on glass-like material that will not scratch, chip, peel, or come off when exposed to the weather. The lamps are designed for maximum appeal whether used in combination or individually.

SIGN AND DECORATIVE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx Hours Life	Initial Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
6S14	6	S-14	Med.	115-125	Clear	120	B	C-9	1500	43	2 1/2	3 1/2
6S14/IF	6	S-14	Med.	115-125	Inside Frosted	120	B	C-9	1500	43	2 1/2	3 1/2
6A21	6	A-21	Med.	115-125	Ref. Flashing Sign	120	B	C-9	1500	*	2 1/2	4 1/4
10A12	10	A-21	Med.	115-125	Ref. Flashing Sign	120	B	C-9	1500	*	2 1/2	4 1/4
10S11N	10	S-11	Inter.	115-125	Clear	120	B	C-7A	1500	80	1 5/8	2 5/16
10S11N/CB	10	S-11	Inter.	115-125	Blue	120	B	C-7A	1500	.....	....	2 5/16
10S11N/CG	10	S-11	Inter.	115-125	Green	120	B	C-7A	1500	.....	....	2 5/16
10S11N/CR	10	S-11	Inter.	115-125	Red	120	B	C-7A	1500	.....	....	2 5/16
10S11N/CO	10	S-11	Inter.	115-125	Orange	120	B	C-7A	1500	.....	....	2 5/16
10S11N/CFT	10	S-11	Inter.	115-125	Flametint	120	B	C-7A	1500	.....	....	2 5/16
10S11N/CY	10	S-11	Inter.	115-125	Yellow	120	B	C-7A	1500	.....	....	2 5/16
10S11N/CW	10	S-11	Inter.	115-125	White	120	B	C-7A	1500	.....	....	2 5/16
10S14	10	S-14	Med.	115-125	Clear	120	B	C-9	1500	80	2 1/2	3 1/2
10S14/IF	10	S-14	Med.	115-125	Inside Frost	120	B	C-9	1500	79	2 1/2	3 1/2
10S14/CB	10	S-14	Med.	115-125	Blue	120	B	C-9	1500	.....	....	3 1/2
10S14/CG	10	S-14	Med.	115-125	Green	120	B	C-9	1500	.....	....	3 1/2
10S14/CR	10	S-14	Med.	115-125	Red	120	B	C-9	1500	.....	....	3 1/2
10S14/CO	10	S-14	Med.	115-125	Orange	120	B	C-9	1500	.....	....	3 1/2
10S14/CY	10	S-14	Med.	115-125	Yellow	120	B	C-9	1500	.....	....	3 1/2
10S14/CW	10	S-14	Med.	115-125	White	120	B	C-9	1500	.....	....	3 1/2
10S14/CFT	10	S-14	Med.	115-125	Flametint	120	B	C-9	1500	.....	....	3 1/2
10S14/CV	10	S-14	Med.	115-125	Ivory	120	B	C-9	1500	.....	....	3 1/2
10S14/CR2	10	S-14	Med.	115-125	Rose	120	B	C-9	1500	.....	....	3 1/2
11S14	11	S-14	Med.	115-125	Clear	120	B	C-9	3000	81	2 1/2	3 1/2
11S14IF	11	S-14	Med.	115-125	Inside Frosted	120	B	C-9	3000	80	2 1/2	3 1/2
11S14/B	11	S-14	Med.	115-125	Blue	120	B	C-9	3000	.....	....	3 1/2
11S14/G	11	S-14	Med.	115-125	Green	120	B	C-9	3000	.....	....	3 1/2
11S14/O	11	S-14	Med.	115-125	Orange	120	B	C-9	3000	.....	....	3 1/2
11S14/R	11	S-14	Med.	115-125	Red	120	B	C-9	3000	.....	....	3 1/2
11S14/W	11	S-14	Med.	115-125	White	120	B	C-9	3000	.....	....	3 1/2
11S14/Y	11	S-14	Med.	115-125	Yellow	120	B	C-9	3000	.....	....	3 1/2
15A15/AO	15	A-15	Med.	115-125	Amber-Orange	120	B	C-9	1200	.....	....	3 1/2
15A15/B	15	A-15	Med.	115-125	Blue	120	B	C-9	1200	.....	....	3 1/2
15A15/FT	15	A-15	Med.	115-125	Flametint	120	B	C-9	1200	.....	....	3 1/2
15A15/G	15	A-15	Med.	115-125	Green	120	B	C-9	1200	.....	....	3 1/2
15A15/V	15	A-15	Med.	115-125	Ivory	120	B	C-9	1200	.....	....	3 1/2
15A15/RO	15	A-15	Med.	115-125	Old Rose	120	B	C-9	1200	.....	....	3 1/2
15A15/R	15	A-15	Med.	115-125	Red	120	B	C-9	1200	.....	....	3 1/2
15A15/W	15	A-15	Med.	115-125	White	120	B	C-9	1200	.....	....	3 1/2
15A15/Y	15	A-15	Med.	115-125	Yellow	120	B	C-9	1200	.....	....	3 1/2
20A17/5	20	A-17	Med.	115-125	Clear Flashing Sign	122	C	C-9	1000	152	2 3/8	3 1/2
25A/CL	25	A-19	Med.	115-125	Clear	120	B	C-9	1000	268	2 1/2	3 15/16
25A/D	25	A-19	Med.	115-125	Daylight	120	B	C-9	1000	175	2 1/2	3 15/16
25A/O	25	A-19	Med.	115-125	Orange	120	B	C-9	1000	.....	....	3 15/16
25A/FT	25	A-19	Med.	115-125	Flametint	120	B	C-9	1000	.....	....	3 15/16
25A/Y	25	A-19	Med.	115-125	Yellow	120	B	C-9	1000	.....	....	3 15/16
25A/R2	25	A-19	Med.	115-125	O. Rose	120	B	C-9	1000	.....	....	3 15/16
25A/B	25	A-19	Med.	115-125	Blue	120	B	C-9	1000	.....	....	3 15/16
25A/G	25	A-19	Med.	115-125	Green	120	B	C-9	1000	.....	....	3 15/16
25A/R	25	A-19	Med.	115-125	Red	120	B	C-9	1000	.....	....	3 15/16
25A/W	25	A-19	Med.	115-125	White	120	B	C-9	1000	.....	....	3 15/16
25A/V	25	A-19	Med.	115-125	Ivory	120	B	C-9	1000	220	....	3 15/16
40A/O	40	A-21	Med.	115-125	Orange	120	B	C-9	1000	.....	....	3 15/16
40A/B	40	A-21	Med.	115-125	Blue	120	B	C-9	1000	.....	....	4 7/16
40A/FT	40	A-21	Med.	115-125	Flametint	120	B	C-9	1000	.....	....	4 7/16
40A/G	40	A-21	Med.	115-125	Green	120	B	C-9	1000	.....	....	4 7/16
40A/V	40	A-21	Med.	115-125	Ivory	120	B	C-9	1000	.....	....	4 7/16
40A/R	40	A-21	Med.	115-125	Red	120	B	C-9	1000	.....	....	4 7/16
40A/R2	40	A-21	Med.	115-125	Rose	120	B	C-9	1000	.....	....	4 7/16
40A/Y	40	A-21	Med.	115-125	Yellow	120	B	C-9	1000	.....	....	4 7/16

* Approximately 50% greater candlepower in 90° Cone than 6S14 or 10S14 inside Frost lamps.

G·E THREE-WAY LAMPS



Three-way lamps with their two filaments provide three levels of lighting. Each filament is of a different wattage and may be lighted individually or in combination with the other.

The lower wattage is for decorative or casual effects. The combined wattage of the two filaments is for use where seeing requirements are important.

The 50/250M/1W, 50/150 and 100/300-watt sizes are particularly applicable to floor, table and wall lamps having diffusing bowls. However, the 50/150R/W is especially for use in portable lamps without diffusing bowls because of its shape and special white diffusing coating. The 30/100 finds much use in vanity and dresser lamps.

Three-way lamps are designed for base down operation with the exception of the mogul base 50/150-watt size.

The 50/150M/W lamp is for base down burning in table, floor or wall lamps.

The 50/250M/1W provides a greater range between high and low levels of light.

The 50/150R/W has a special bulb shape and diffusing coating with a variation in density which produces a controlled distribution of light when used in portable floor, table and wall lamps without diffusing bowls.

THREE-WAY LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Light Center Length Inches	Max. Ovrl. Length Inches	Approx. Initial Lumens
30/100	30, 70, 100	A-21	3c Med.	120	I. F.	120	C	2C-9	750	3¾	5 5/16	300, 980, 1280
30/100/W	30, 70, 100	A-21	3c Med.	120	White	120	C	2C-9	750	3¾	5 5/16	295, 965, 1260
50/250M/1W	50, 200, 250	PS-25	3c Med.	120	White	60	C	2C-2R	1000	4⅝	6⅛	565, 3250, 3815
50/150M	50, 100, 150	PS-25	3c Med.	120	I. F.	60	C	2C-2R	750	3⅞	5 15/16	600, 1600, 2180
50/150	50, 100, 150	PS-25	3c Mog.	120	I. F.	60	C	2C-2R	1000	5	6 13/16	575, 1470, 2045
50/150M/W	50, 100, 150	PS-25	3c Med.	120	White	60	C	2C-2R	750	3⅞	5 15/16	590, 1550, 2140
50/150R/W	50, 100, 150	R-40	3c Med.	120	White	24	C	2C-2R	1000	....	6 3/16	590, 1490, 2080
100/300	100, 200, 300	G-30	3c Mog.	120	White	60	C	2C-2R	1000	....	6¾	1370, 3240, 4610
50/150M/DPK	50, 100, 150	PS-25 ①	3c Med.	115-125	Pink	60	C	2C-2R	750	....	5 15/16	.....
100/300/DPK	100, 200, 300	G-30	3c Mog.	115-125	Pink	60	C	2C-2R	1000	....	6¾	.....

① Available also in Sky Blue, Spring Green and Sun Gold as illustrated.

G·E *Celeste* LAMPS

This new light bulb, the "Celeste," provides modern, attractive styling to old lamp sockets and fixtures. It may also be used in many modern lighting fixtures, providing improved styling and better light diffusion. Available in pink or white, it may be used singly or in clusters. It is attractive in appearance when lighted or unlighted.

When used indoors the "Celeste" may be burned base up or base down, in sockets of ceiling fixtures in bedrooms, hallways, breakfast, recreation or other rooms, in wall sockets, (such as beside bathroom or make-up mirrors) in decorative wall units and over planters. It may also be used in some types of the pull-down wall and ceiling fixtures used over dining room tables, game tables and other areas.

Outdoors this new light bulb is appropriate for use in fixtures, portable lamps and decorative festoons for temporary patio lighting or for other areas where smart lamp appearance can enhance the attractiveness, and provide light for recreation, decoration and safety. When used for temporary applications exposed to the weather, it should be burned base-up. For continuous outdoor use, it should be used in enclosing fixtures or lanterns or in an area sheltered from the weather.

75K32/W 75K32/DPK

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Std. Pkg. Qty.	Overall Length Inches	Rated Hours Life	Light Center Length Inches	Lumens
75K32/W	75	K-32	Med.	115-125	12	8 7/16	2500	5 1/4	800
75K32/DPK	75	K-32	Med.	115-125	12	8 7/16	2500	5 1/4	600

G·E HIGH-LOW LAMPS

These new two-filament lamps are designed to improve reliability in table and floor lamps equipped with three-way sockets. The "high" level of light is increased up to 22% to provide generous light for reading, sewing, studying or other close work. On the "low" level (approximately one-fourth the light output of the "high" level) the new bulb gives a soft glow ideal for conversation, relaxation, television viewing or as a night light.

The life of the low level filament is greatly increased to compensate for its relatively greater number of hours of usage thus eliminating the problem of "half-burnouts" — one filament burning out long before the other. The ratio is approximately 3500 hours to 750 hours for the 100-watt and 150-watt lamps and 1000 hours to 3500 hours for the 300-watt lamp.

100HL 150HL 300HL

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Std. Pkg. Qty.	Overall Length Inches
100HL	50-100	A-21	3-Contact Med.	120	120	5 1/16
150HL	70-150	PS-25	3-Contact Med.	120	60	5 11/16
300HL	150-300	G-30	3-Contact Mog.	120	60	6 3/4

G·E PROJECTOR LAMPS

75PAR/FL

150PAR/3FL

200PAR46/3NSP

300PAR56

300PAR56/MFL

300PAR56/NSP

500PAR64/WFL

General Electric Projector lamps are self-contained spotlighting and floodlighting units. They are widely used in commercial, industrial, and home lighting applications. Principal advantages are compactness, convenience, resistance to thermal shock, and elimination of reflector deterioration from dirt.

PAR-38 Projector lamps may be used outdoors in exposed locations. Devices such as color roundels, louvers, and shields can be clipped directly to the PAR-38 bulbs.

The PAR-46, -56, and -64 lamps (the 200-, 300-, and 500-watt sizes) have oval beam patterns. All three sizes are made with Narrow Spot and Medium Flood beam distributions — the PAR-56 and -64 lamps are made with Wide Flood distribution as well.

All PAR lamps with side- or end-prong bases should be supported at the bulb rim; heat-resistant connectors are recommended.

In general, PAR-46, -56, -64 lamps used outdoors should be protected from the weather by glass-covered, well-gasketed housings. Exceptions may often be made in the case of the PAR-46 and-56 lamps when they are aimed below horizontal, and are in sheltered locations that protect them from driving rain and snow.

PROJECTOR LAMPS (120 Volts)

Ordering Abbreviation	Watts and Bulb	Base Type	Beam Type	Std. Pkg.	Approx. Beam Spread Degrees ③	Approx. Initial Beam Lumens	Approx. Total Lumens	Approx. Initial CP Av. in 10° Cone ③	Max. Overall Length Inches
75PAR/SP①	75-Watt PAR 38	Med. Skt.	Spot	12	30° x 30°	480	750	4,000	5 1/16
75PAR/FL①		Med. Skt.	Flood	12	60° x 60°	600	750	1,700	5 5/16
150PAR/SP①	150-Watt PAR 38	Med. Skt.	Spot	12	30° x 30°	1,100	1,730	10,500	5 5/16
150PAR/3SP①		Med. Side-prong	Spot	12	30° x 30°	1,100	1,730	10,500	4 5/16
150PAR/FL①		Med. Skt.	Flood	12	60° x 60°	1,350	1,730	3,700	5 5/16
150PAR/3FL①		Med. Side-prong	Flood	12	60° x 60°	1,350	1,730	3,700	4 5/16
200PAR46/3NSP	200-Watt PAR 46	Med. Side-prong	Narrow Spot	12	17° x 23°	1,200	2,350	32,000	4
200PAR46/3MFL		Med. Side-prong	Med. Flood	12	30° x 40°	1,300	2,350	11,000	4
300PAR56/NSP	300-Watt PAR 56	Mog. End prong	Narrow Spot	12	15° x 20°	1,800	3,650	70,000	5
300PAR56/MFL		Mog. End prong	Med. Flood	12	20° x 35°	2,000	3,650	22,000	5
300PAR56/WFL		Mog. End prong	Wide Flood	12	30° x 60°	2,100	3,650	10,000	5
500PAR64/NSP	500-Watt PAR 64	Ext. Mog. End prong	Narrow Spot	8	13° x 20°	3,000	6,000	110,000	6
500PAR64/MFL		Ext. Mog. End prong	Med. Flood	8	20° x 35°	3,400	6,000	35,000	6
500PAR64/WFL		Ext. Mog. End prong	Wide Flood	8	35° x 65°	3,500	6,000	12,000	6

The rated average life of Projector (PAR) lamps is 2,000 hours. The average lumens and candlepower is 85% of initial.
① Heat Resistant glass.
② To 10% of maximum candlepower.
③ Candlepower average in the central 5° cone for SP and NSP, in 10° cone for MFL and WFL.

G·E PROJECTOR COLOR LAMPS

100PAR/B

100PAR/BW

100PAR/G

100PAR/PK

100PAR/R

100PAR/Y

General Electric Projector Color lamps make it easy to produce a variety of colored lighting effects. These new 100-watt PAR-38 lamps (which replace the former 150-watt version) are made in six lively colors — Blue, Blue-White, Green, Yellow, Pink, and Red.

The feature that made it possible to reduce wattage by a third is a greatly improved color coating of a special silicone baked on the glass face. This coating transmits more light (hence, more color) than did the former coatings. In the Green and Blue, the output of colored light is significantly higher than that from the same colors in the former 150-watt lamps. The Blue-White gives about the same amount of light. Although there is some reduction in the actual amount of light produced by the Pink, Red, and Yellow lamps, they all give more colored light *per watt* than did the 150-watt colored lamps. The improvement in the richness of the colors is striking.

These lamps can be used indoors or outdoors. Their ruggedness is such that they can be burned in any position without protection from the weather.

PROJECTOR COLOR LAMPS (115-125 Volts)

Lamp Ordering Abbreviation	Description	Watts	Bulb	Base	Std. Pkg. Qty.	Class	Filament	Maximum Overall Length Inches	Approx. Hours Life
100PAR/B	**Blue**	**100**	**PAR-38**	**Med. Skt.**	12	C	CC-6	$5\frac{5}{16}$	2000
100PAR/BW	Blue White	**100**	**PAR-38**	**Med. Skt.**	12	C	CC-6	$5\frac{5}{16}$	2000
100PAR/G	Green	**100**	**PAR-38**	**Med. Skt.**	12	C	CC-6	$5\frac{5}{16}$	2000
100PAR/PK	Pink	**100**	**PAR-38**	**Med. Skt.**	12	C	CC-6	$5\frac{5}{16}$	2000
100PAR/R	**Red**	**100**	PAR-38	**Med. Skt.**	12	C	CC-6	$5\frac{5}{16}$	2000
100PAR/Y	Yellow	**100**	PAR-38	**Med. Skt.**	12	C	CC-6	$5\frac{5}{16}$	2000

G·E REFLECTOR LAMPS

General Electric Reflector (R) lamps have built-in mirror-like reflecting surfaces of deposited silver. They differ from PAR lamps chiefly in having blown, rather than molded bulbs. Although this means that the control of the beam is somewhat less precise than with PAR lamps, R lamps are nevertheless the logical choices for many spot and floodlighting applications where precise beam control is not a requirement.

In general, Reflector lamps are most suitable for uses that do not require weather resistance and great ruggedness, However, as indicated in the table below, some of them are made of heat-resistant glass for specialized uses that may subject them to the dripping or spatter of liquids.

Spot or flood distribution of R lamps is determined by the density of the inside frosting of the bulb.

The 150-watt spot and flood lamps are by far the most-used of all the reflector lamps. They are adaptable to all sorts of spot and floodlighting applications that do not require the more rugged and more precise 100-watt PAR lamps.

Although all of the sizes of the R lamps are sometimes used for general lighting, the 500- and 750-watt R-52 and the 1000-watt RB-52 lamps are specifically designed for this purpose. They have wider beam spreads than the other R lamps, and are particularly well suited to industrial applications where maintenance may be difficult and costly. The sealed-in reflector, of course, can not accumulate dirt, and very little dirt can settle on the smooth underside of the lamp, through which the light is emitted. These lamps should be protected from dripping or splashing.

The smaller R lamps, the 30- and 75-watt sizes, produce beams of controlled light suitable for such uses as highlighting in the home, short-throw display lighting, and close-up supplementary lighting for industrial inspection tasks.

G-E Reflector Color lamps provide dramatic display and lighting effects, and are ideal for many kinds of decorative lighting both indoors and outdoors. In show windows the four basic colors, red, green, yellow and blue are ideal for lighting backgrounds to accentuate merchandise on display.

Pink and blue-white provide general illumination as well as color effects. Pink is used for warmth and blue-white for cool highlights.

Intermediate hues are obtained by mixing appropriate pairs of the basic colors in various combinations. For instance red and blue produce purple. Tints are created by adding white light to the four basic colors. White light is created by combining complementary colors.

Reflector color lamps fit in regular sockets and holders. The silvered reflector is built right into the lamps, — cannot get dirty or tarnish. Color is fused onto the glass so it cannot fade, chip or peel.

When used outdoors these lamps should be sheltered or housed in suitable fixtures to protect them from rain or snow.

G·E REFLECTOR COLOR LAMPS


150R/R


150R/PK


150R/G


150R/Y


150R/BW


150R/B

REFLECTOR LAMPS (120 Volts)

Ordering Abbreviation	Watts and Bulb	Base Type	Beam Type	Std. Pkg.	Approx. Beam Spread Degrees ①	Approx. Initial Beam Lumens ②	Approx. Total Lumens	Approx. Initial CP Av. in 10° Cone	Max. Overall Length Inches
30R20	30-Watt R-20	Medium	Flood	60	80°	145	200	350	3 11/16
75R30/SP	75-Watt R-30	Medium	Spot	60	50°	400	770	1,800	5 3/8
75R30/FL		Medium	Flood	60	130°	610	770	430	5 3/8
150R/SP	150-Watt R-40	Medium	Spot	24	40°	810	1,780	6,000	6 9/16
150R/FL		Medium	Flood	24	110°	1,500	1,780	1,250	6 9/16
300R/SP	300-Watt R-40	Medium	Spot	24	35°	1,800	3,700	13,500	6 9/16
300R/SP/1①		Medium	Spot	24	35°	1,800	3,700	13,500	6 7/8
300R/3SP①		Mogul	Spot	24	35°	1,800	3,700	13,500	7 1/4
300R/FL		Medium	Flood	24	115°	2,800	3,700	2,700	6 9/16
300R/FL/1①		Medium	Flood	24	115°	2,800	3,700	2,700	6 7/8
300R/3FL①		Mogul	Flood	24	115°	2,800	3,700	2,700	7 1/4
300R/3FL/MS	300-W R40	Mogul	Flood	24	—	—	—	—	7 1/4
500R/3FL/MS	500-W R40	Mogul	Mill Service	24	—	—	—	—	7 1/4
500R/3SP①	500-Watt R-40	Mogul	Spot	24	35°	3,100	6,400	22,000	7 1/4
500R/3FL①		Mogul	Flood	24	115°	5,400	6,400	5,200	7 1/4
500R52	500-W R-52	Mogul	Refl. Fl.	6	—	--	7,550	—	11 3/4
750R52	750-W R52	Mogul	Refl. Fl.	6	—	—	12,700	—	11 3/4
1M/RB52	1000-W RB-52	Mogul	Refl. Fl.	6	—	—	18,000	—	12 3/4

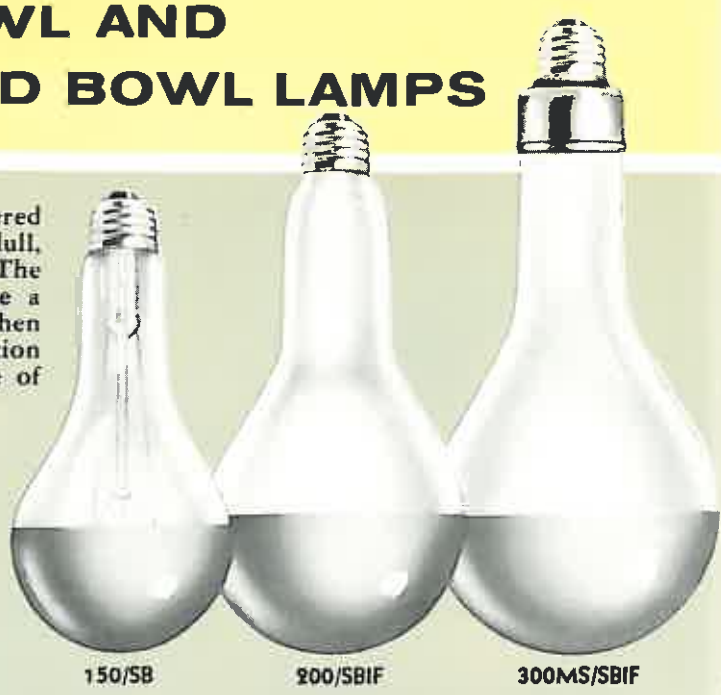
REFLECTOR COLOR LAMPS (115-120 Volts)

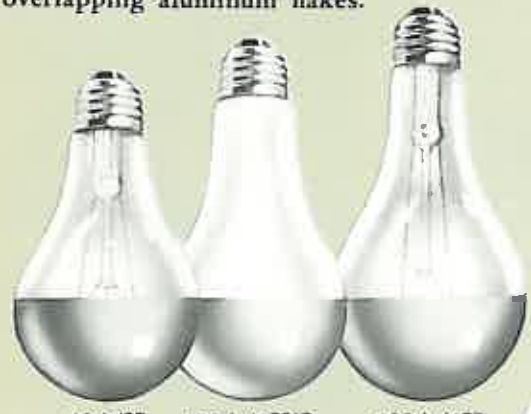
150R/R	150—R-40	Medium	Red	24	—	—	—	—	6 9/16
150R/PK	150—R-40	Medium	Pink	24	—	—	—	—	6 9/16
150R/G	150—R-40	Medium	Green	24	—	—	—	—	6 9/16
150R/Y	150—R-40	Medium	Yellow	24	—	—	—	—	6 9/16
150R/BW	150—R-40	Medium	Blue White	24	—	—	—	—	6 9/16
150R/B	150—R-40	Medium	Blue	24	—	—	—	—	6 9/16

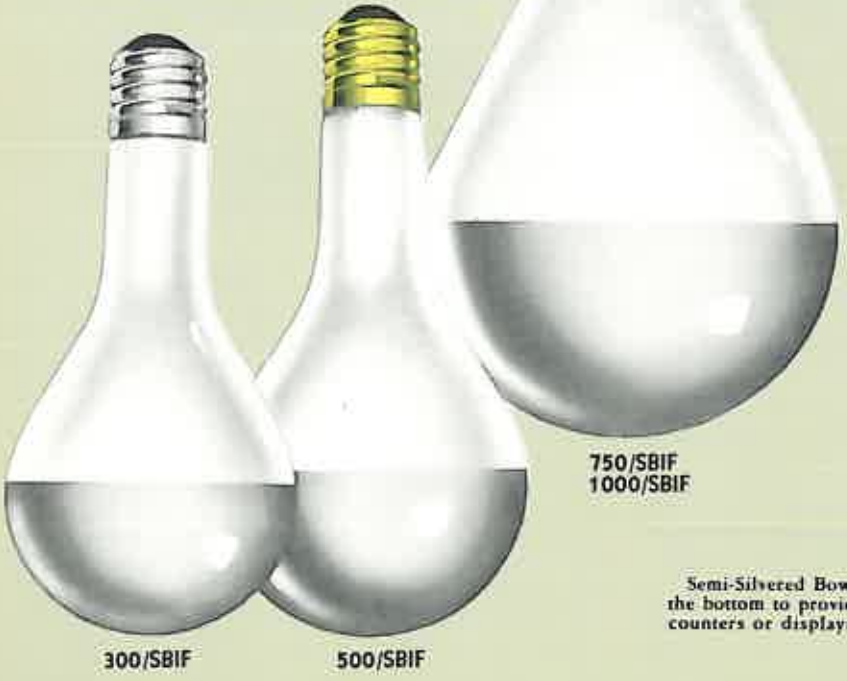
The rated average life of Reflector (R) lamps is 2,000 hours. The average lumens and candlepower are 85% of initial.
① Heat Resistant glass.
② To 10% of maximum candlepower.

G·E SILVERED BOWL AND SEMI-SILVERED BOWL LAMPS

The process by which G-E Silvered Bowl lamps are silvered assures a high quality reflecting surface which does not dull, tarnish or deteriorate throughout the life of the lamp. The bulb is first chemically cleaned and sensitized to receive a coating of pure silver. A protective copper layer is then electrolytically deposited over the silver to prevent oxidation due to filament heat. To this is added, further, a surface of overlapping aluminum flakes.







Silvered Bowl lamps have long been popular for indirect lighting of schools, offices, homes, and commercial buildings, particularly where the initial cost of the installation must be kept low. They are also used in direct lighting equipment such as dome-type reflectors, spotlight and floodlight reflectors, and in some designs of large-area louvered equipment. The mirrored reflecting surface is applied to the outside of the bulb, and is sealed against dust and dirt. The opaque bowl shields the glaring lamp filament from view; this in turn allows fixture design in which the lamp bowl is exposed so that lamp replacement is simple and direct.

Silvered Bowl and Semi-Silvered Bowl lamps should be burned base up. Sizes from 100-watt and up should be burned in porcelain sockets.

Semi-Silvered Bowl lamps have a small uncoated area at the bottom to provide direct downlighting emphasis over counters or displays in stores.

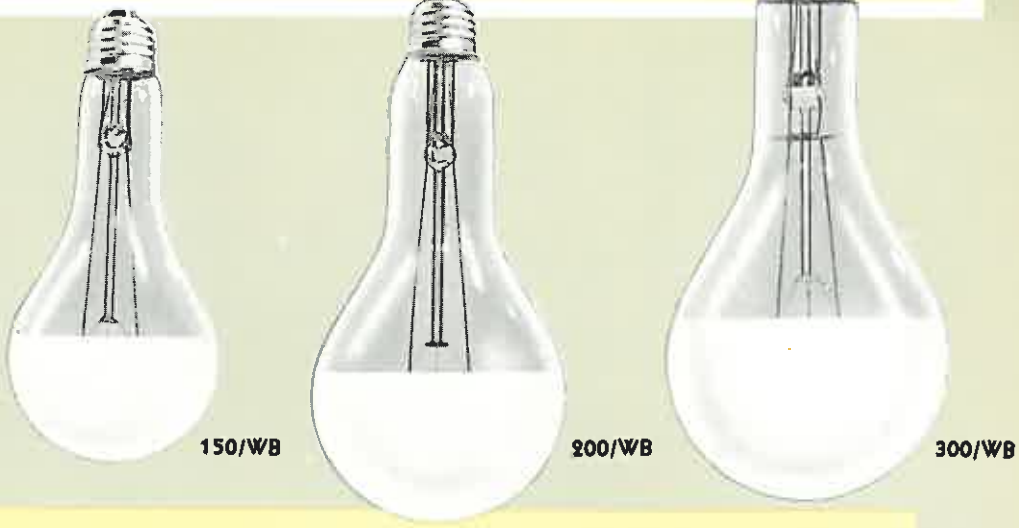
SILVERED BOWL LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Light Cntr. Lgth.	Max. Ovrl. Lgth. Inches
60A/SB	60	A-19	Med.	120	I. F. Silvered	120	C	CC-6	1000	3 1/8	4 7/16
100A/1SB①	100	A-21	Med.	120	I. F. Silvered	120	C	CC-6	1000	3 7/8	5 1/16
100A/1SBIF①	100	A-21	Med.	120	I. F. Silvered	120	C	CC-6	1000	3 7/8	5 1/16
150/SB	150	PS-25	Med.	120	I. F. Silvered	60	C	C-9	1000	5 1/4	6 13/16
200/SBIF	200	PS-30	Med.	120	I. F. Silvered	60	C	C-9	1000	6	8 1/16
200/SBIF/1	200	PS-30	Med.	120	I. F. Semi-Silv.	60	C	C-9	1000	6	8 1/16
300MS/SBIF	300	PS-35	Md. Skt.	120	I. F. Silvered	24	C	C-9	1000	7 1/2	9 1/8
300/SBIF	300	PS-35	Mog.	120	I. F. Silvered	24	C	C-9	1000	7	9 3/8
300/SBIF/1	300	PS-35	Mog.	120	I. F. Semi-Silv.	24	C	C-9	1000	7	9 3/8
500/SBIF	500	PS-40	Mog.	120	I. F. Silvered	24	C	C-9	1000	7	9 3/4
500/SBIF/1	500	PS-40	Mog.	120	I. F. Semi-Silv.	24	C	C-9	1000	7	9 3/4
750/SBIF	750	PS-52	Mog.	120	I. F. Silvered	6	C	C-7A	1000	9 1/2	13 1/16
1000/SBIF	1000	PS-52	Mog.	120	I. F. Silvered	6	C	C-7A	1000	9 1/2	13 1/16

① For use only in porcelain sockets and in fixtures so designed that the temperatures of the lamp and fixture do not exceed limits for satisfactory operation.

G·E WHITE BOWL LAMPS

White Bowl lamps are designed principally for use in open type direct lighting fixtures. They have a white enamel coating on the inside of the bowl which redirects about 80% of the light upward. About 20% of the light is diffused downward through the bowl. This redirection and diffusion improves the quality of illumination by softening shadows and reducing glare.



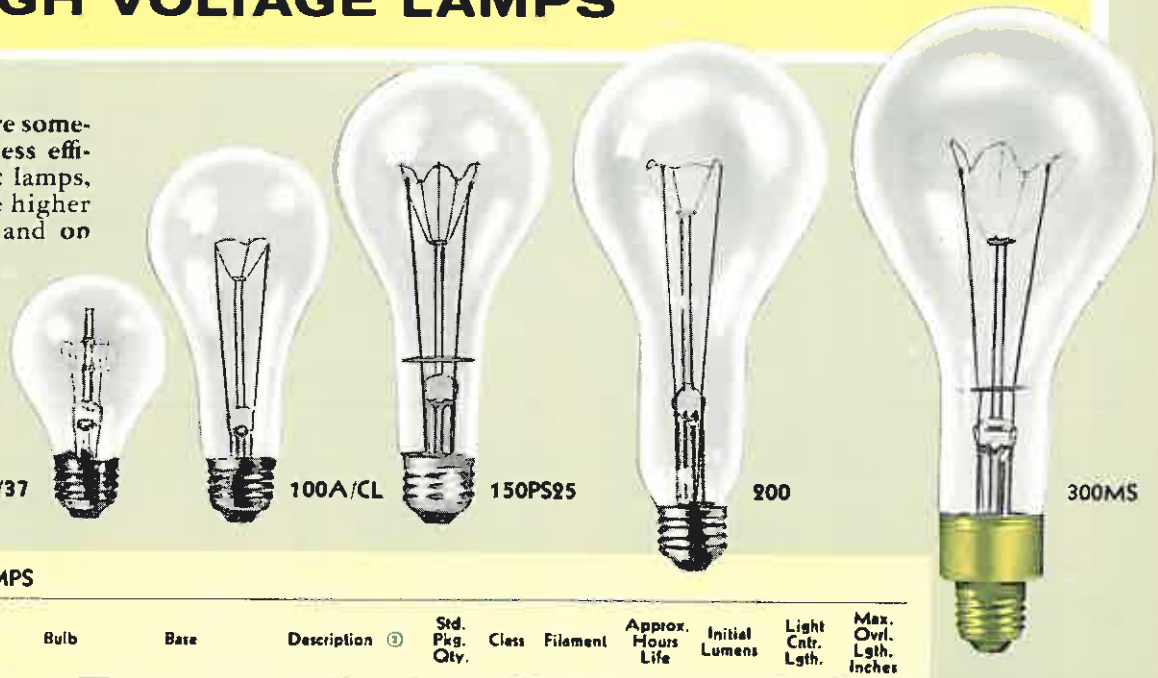
150/WB 200/WB 300/WB

WHITE BOWL LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Light Cntr. Lgth.	Max. Ovrl. Lgth. Inches
150/WB	150	PS-25	Med.	120	Inside White	60	C	C-9	750	5 1/4	6 15/16
200/WB	200	PS-30	Med.	120	Inside White	60	C	C-9	750	6	8 1/16
300/WB	300	PS-35	Mog.	120	Inside White	24	C	C-9	1000	7	9 3/8

G·E HIGH VOLTAGE LAMPS

These lamps which, are somewhat less rugged and less efficient than 115-125-volt lamps, are used where only the higher voltages are available, and on direct-current circuits where it is not practical to use fluorescent or mercury lamps.



50A19/37 100A/CL 150PS25 200 300MS

HIGH VOLTAGE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Description ②	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Initial Lumens	Light Cntr. Lgth.	Max. Ovrl. Lgth. Inches
50A19/37	50	A-19	Med.	Clear	120	B	C-17A	1000	480	2 1/2	3 15/16
100A/CL	100	A-21	Med.	Clear	120	C	C-7A	1000	1280	3 7/8	5 5/16
100A/RS	100	A-21	Med.	Rough Service	120	C	C-17	1000	960	3 7/8	5 5/16
150PS25	150	PS-25	Med.	Clear	60	C	C-7A	1000	2080	5 1/4	6 15/16
200	200	PS-30	Med.	Clear	60	C	C-9	1000	3040	6	8 1/16
300MS	300	PS-35	Med. Skt.	Clear	24	C	C-7A	1000	4800	7 1/2	9 7/8
300	300	PS-35	Mog.	Clear	24	C	C-7A	1000	4800	7	9 3/8
500	500	PS-40	Mog.	Clear	24	C	C-7A	1000	9100	7	9 3/4
750	750	PS-52	Mog.	Clear	6	C	C-7A	2000	13600	9 1/2	13 1/16
1000	1000	PS-52	Mog.	Clear	6	C	C-7A	2000	18600	9 1/2	13 1/16
1500	1500	PS-52	Mog.	Clear①	6	C	C-7A	2000	27000	9 1/2	13 1/16

① Recommended burning position any within 60° of vertically base up or base down but lumen maintenance is best when burned vertically base up.
② All sizes from 15 watts to 1500 watts available with Inside Frosted bulbs.

Note: The new Quartzline lamps P37 are filament lamps that operate at higher voltages without sacrifice of ruggedness or efficiency.

G·E SPOTLIGHT LAMPS (FOR THEATRES

General Electric Spotlight lamps range in size from 75 watts to 10,000 watts. They are designed with concentrated filaments for maximum light output in the controlled beams of spotlights used in theatres, television, motion picture and other photographic studios, and commercial displays. For best lighting results, the filaments of these lamps must be accurately positioned in relation to the spotlight optical system. Therefore, most of the preferred spotlight lamps employ bipost or prefocus bases to assure accurate filament positioning. Older designs of spotlights used the lamps shown with screw bases and C-5 filaments; by changing sockets better performance is achieved with the lamps having C-13 or C-13D filaments and bipost or prefocus bases.

Spotlight lamps generally are designed for a life of 200 hours, to produce high light output with reasonable life. These lamps are used for stage lighting and for lighting television studio sets. In motion picture studios, however, even greater output is desired, particularly in the blue and green portions of the spectrum. For this service, lamps are designed to produce color temperatures of 3200°K and 3350°K, to complement the sensitivity characteristics of color films. These highly efficient lamps have shorter lives, determined by the wattage and color temperature desired.

In studios where sensitive microphones are used near the lights, high-wattage lamps in certain lighting equipment sometimes produce enough audible noise to affect sound quality. To minimize this problem, many studio lamps are made with a special low-noise construction pioneered by General Electric.

For effective spotlight service, it is often necessary to design lamps of high wattage in relatively small bulbs. Also, the concentrated filament forms must have their coil segments spaced closely together. These characteristics require that the lamps be operated at the recommended burning positions shown in the table below to prevent filament segments from shorting together and to reduce glass temperatures that may cause the bulb to soften and bulge.

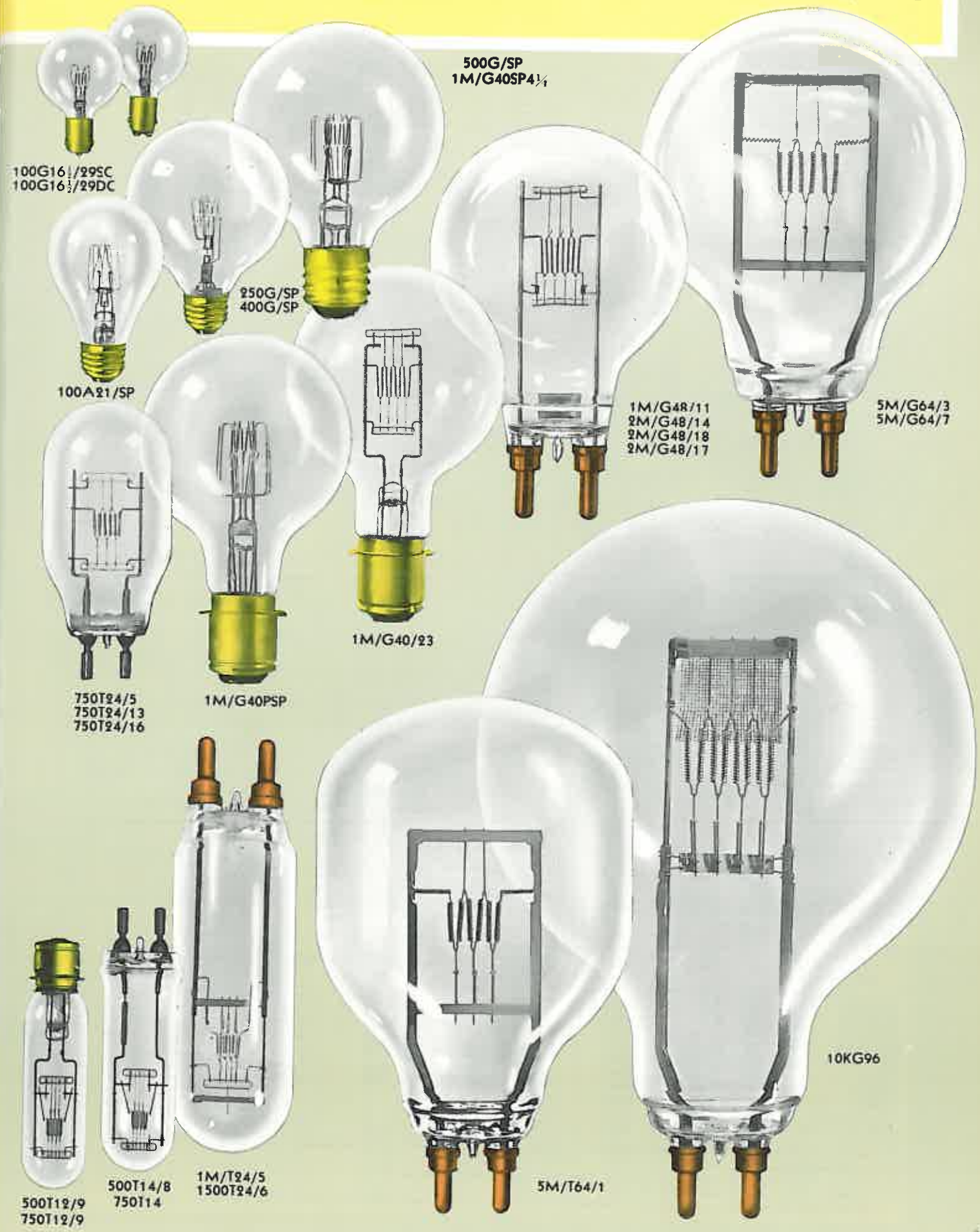
SPOTLIGHT LAMPS For Theatres, Television, Motion Picture and other Photographic Studios, Commercial Displays.

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Primary Application	Std. Pkg. Qty.	Class and Filament	Approx. Hours Life	Initial Lumens	L.C.L. Inches	M.O.L. Inches
100G16½/29SC 100G16½/29DC	100	G-16½	Bay. Cand.	120	Spotlight①	60	C, CC-13	200	1,630	1⅜	3
100A21/SP	100	A-21	Med.	120	Spotlight②	120	C-5	200	1,330	3	4 7/16
250G/SP	250	G-30	Med.	120	Spotlight①	60	C-5	200	4,300	3	5⅛
400G/SP	400	G-30	Med.	120	Spotlight①	60	C-5	200	8,150	3	5⅛
500T20/45	500	T-20⑤	Med.	120	Spotlight①	24	C-13	500	.....	3	5½
500T20/64	500	T-20⑤	Med. Pf.	120	Spotlight①	24	C-13	500	.....	2 3/16	5¾
500G/SP	500	G-40	Mog.	120	Spotlight①	24	C-5	200	10,100	4¼	7 1/16
500T12/8	500	T-12	Med. Pf. Skt.	120	Spotlight③	24	C-13D	800	.....	3½	6⅛
500T14/7	500	T-14⑤	Med. Bip.	120	Spotlight④	24	C-13	800	.....	4	6⅜
500T12/9	500	T-12⑤	Med. Pf.	120		24	C-13D	200	10,500	3½	6⅛
500T14/8	500	T-14⑤	Med. Bip.	120	Ellipsoidal-Reflector	24	C-13D	200	10,200	4	6⅜
750T12/9	750	T-12⑤	Med. Pf. Skt.	120	Spotlight④	24	C-13D	200	16,500	3½	6⅛
750T14	750	T-14⑤	Med. Bip.	120		24	C-13D	200	16,500	4	6⅜
750T24/5	750	T-24⑤	Med. Bip.	120	Spotlight③	24	C-13	200	17,200	2½	6½
750T24/13	750	T-24⑤	Med. Bip.	115,120,125	3350 °K Photography③	24	C-13	12	24,000	2½	6½
750T24/16	750	T-24⑤	Med. Bip.	115,120,125	3200 °K Photography③	24	C-13	50	20,500	2½	6½
1M/G40SP4¼	1000	G-40⑤	Mog.	120	Spotlight①	24	C-5	200	22,500	4¼	7 1/16
1M/G40PSP	1000	G-40⑤	Mog. Pf.	120	Spotlight①	24	C-5	200	22,500	3 15/16	8 7/16
1M/G40/23	1000	G-40⑤	Mog. Pf.	120	Spotlight①	24	C-13	200	23,000	3 15/16	8 7/16
1M/G48/11	1000	G-48⑤	Mog. Bip.	120	Spotlight①	9	C-13*	200	23,000	5	9⅜
1M/T24/5	1000	T-24⑤	Mog. Bip.	120		12	C-13D	200	21,500	6½	10
1500T24/6	1500	T-24⑤	Mog. Bip.	120	Ellipsoidal-Reflector	12	C-13D	200	33,500	6½	10
2M/T30/1	2000	T-30⑥	Mog. Bip.	120	Spotlight④	6	C-13D	200	48,000	6½	10
2M/G48/14	2000	G-48⑤	Mog. Bip.	115,120,125	3350 °K Photography③	9	C-13*	25	64,000	5	9⅜
2M/G48/18	2000	G-48⑤	Mog. Bip.	120	3200 °K Photography③	9	C-13*	100	57,500	5	9⅜
2M/G48/17	2000	G-48⑤	Mog. Bip.	120	Spotlight③	9	C-13*	200	53,000	5	9⅜
5M/G64/3	5000	G-64⑤	Mog. Bip.	115,120,125	3350 °K Photography③	4	C-13*	75	165,000	6½	11⅞
5M/G64/7	5000	G-64⑥	Mog. Bip.	115,120,125	3200 °K Photography③	4	C-13*	150	141,000	6½	11⅞
5M/T64/1	5000	T-64⑤	Mog. Bip.	115,120,125	3350 °K Spotlight④	4	C-13	75	.....	6½	13⅜
10KG96	10000	G-96⑥	Mog. Bip.	115,120,125	3350 °K Spotlight③	1	C-13	75	.....	10	17⅜

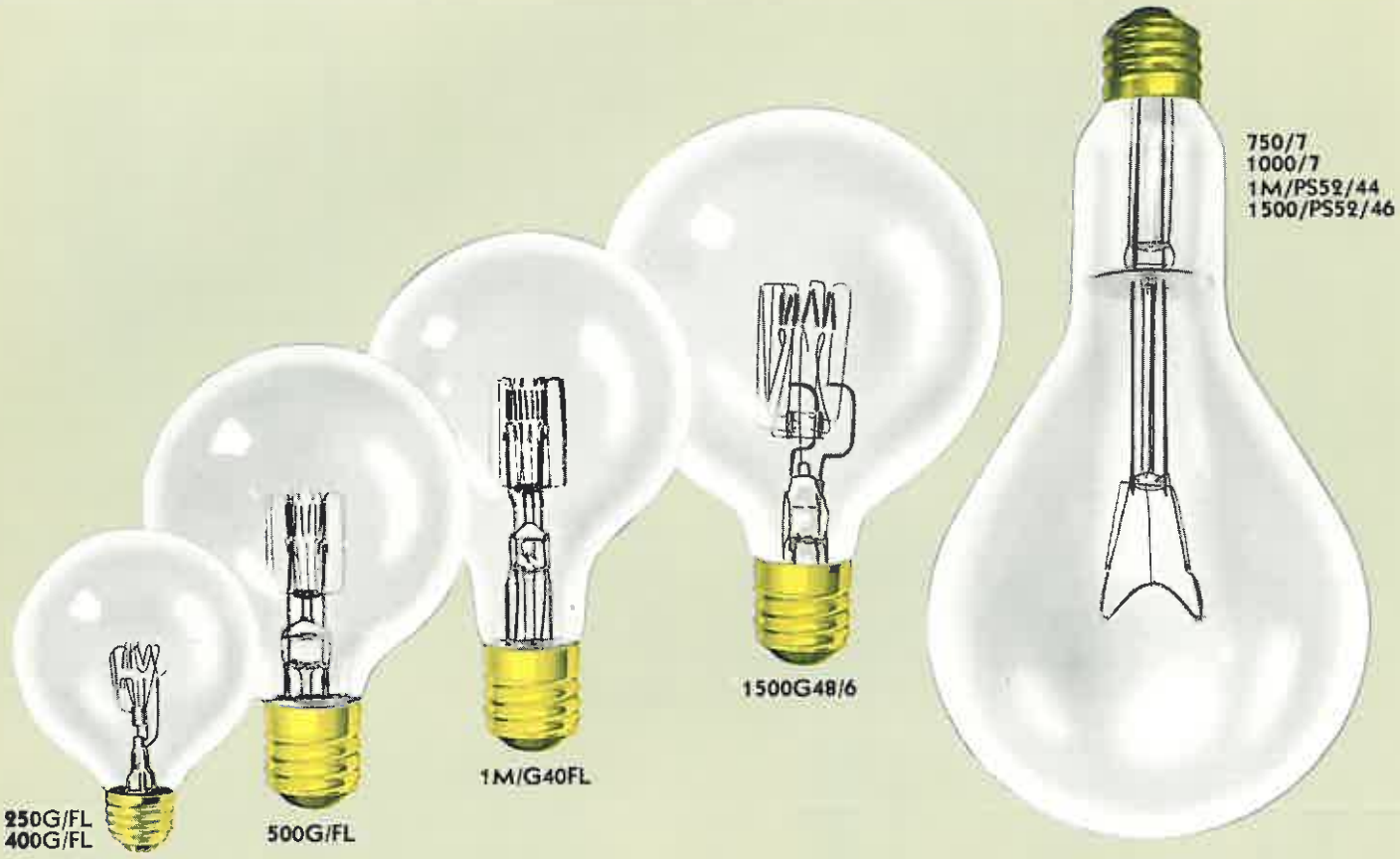
Recommended Burning Positions
① Base down to horizontal
② Any
③ Base down to 45 degrees with filament support bridges horizontal
④ Base up ⑤ Heat resistant glass.

* Low noise construction.

PHOTOGRAPHIC AND TELEVISION STUDIOS)



G·E LAMPS FOR FLOODLIGHTING SERVICE



FLOODLIGHT LAMPS

These lamps are designed to produce accurately controlled beams of light, when used in properly designed equipment.

The base-down lamps are used in enclosed luminaires where especially narrow beams of long throw are needed, and also for underwater units.

The 750-watt, 1000-watt and 1500-watt, PS-52 lamps are used for most general floodlighting applications outdoors, especially for large areas. In the PS-52 lamps, C-7A filaments give best optical performance in floodlighting. They are also available with heat resistant bulbs for use in open fixtures. (1MPS52/44 and 1500/PS52/46).

For floodlighting areas of smaller size or precise shape, or under conditions where regular cleaning of reflectors and glassware would be difficult, "PAR" and "R" reflectorized lamps described on pages 24, 25, 26, and 27 may be preferable.

FLOODLIGHT LAMPS

Lamp Ordering Abbreviation ①	Watts	Bulb	Base	Volts	Burning Position	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
250G/FL	250	G-30	Med.	120	Base Down To Horizontal	60	C	C-5	800	3750	3	5 1/8
400G/FL	400	G-30	Med.	120		60	C	C-5	800	6700	3	5 1/8
500G/FL	500	G-40	Mog.	120		24	C	C-5	800	8800	4 1/4	7 1/16
1M/G40FL	1000	G-40②	Mog.	120		24	C	C-5	800	19500	5 1/4	8
1500G48/6	1500	G-48②	Mog.	120		9	C	C-5	800	31000	5 1/4	8 5/8
750/7	750	PS-52	Mog.	120	Any③	6	C	C-7A	1000	15600	9 1/2	13 1/16
1000/7	1000	PS-52	Mog.	120	Any③	6	C	C-7A	1000	21600	9 1/2	13 1/16
1500④	1500	PS-52	Mog.	120	Any⑤	6	C	C-7A	1000	33000	9 1/2	13 1/16
1M/PS52/44	1000	PS-52②	Mog.	120	Any③	6	C	C-7A	1000	22000	9 1/2	13 1/16
1500/PS52/46	1500	PS-52②	Mog.	120	Any⑤	6	C	C-7A	1000	33000	9 1/2	13 1/16

① Lamp voltage should be specified; 120 volts is standard. If required, 115, 125, or 130-volt lamps may be furnished, except as otherwise indicated.
② Heat resistant glass.
③ Will operate in any position, but lumen maintenance is best when burned vertically base up.
④ Available only in 105, 110, and 120-volt designs.
⑤ Recommended burning position any within 60° of vertical, base up or base down, but lumen maintenance is best when burned vertically base up.

G·E ROUGH SERVICE AND VIBRATION LAMPS


25A/RS
50A/RS
50A19/3


50A19/5

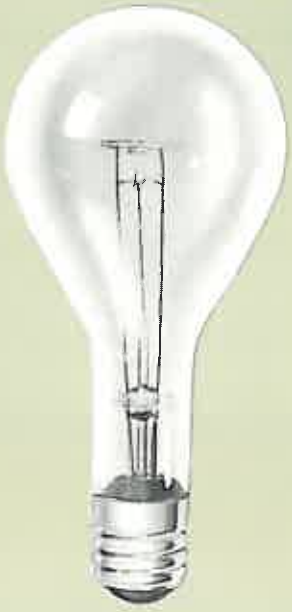

75A21/RS


100A/RS
100A23/28


150/RS
150/VS


200PS30/23


200PS30/24


300/RS


500/RS


25A/CL/VS
50A/CL/VS


25A/VS
50A/VS

ROUGH SERVICE

Rough Service lamps are used in extension cords in garages, industrial plants and similar locations where they are subjected to rough handling in service. The special construction of the filament enables these lamps to withstand sudden shocks and bumps and other forms of rough treatment.

VIBRATION LAMPS

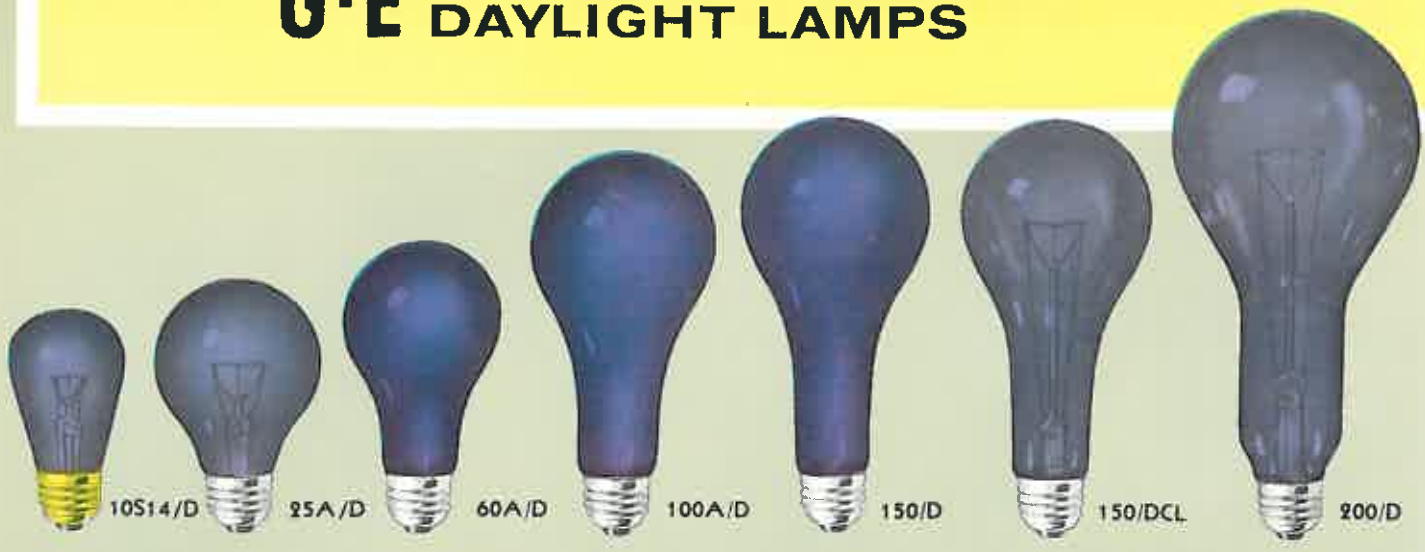
Vibration lamps are particularly designed for use on or near rotating machinery and other places where relatively high-frequency vibration exists. Certain of these lamps are made with a special type of filament wire and with special mount construction and filament windings designed to operate suitably under vibration conditions.

Both the rough service and vibration lamps have extensive uses on ship-board.

ROUGH SERVICE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Initial Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
25A/RS	**25**	**A-19**	**Med.**	**120**	**Inside Frosted**	120	B	C-17	1000	224	2½	3 13/16
50A/RS	**50**	**A-19**	**Med.**	**120**	**Inside Frosted**	120	B	C-22	1000	475	2½	3 15/16
50A19/5	**50**	**A-19**	**Med.**	**120**	**Clear**	120	B	C-22	1000	480	2½	3 15/16
50A19/3	**50**	**A-19**	**Med.**	**120**	**I. F.Out. Ctd. Cl. Lacquer**	120	B	C-22	1000	470	2½	3 13/16
75A21/RS	**75**	**A-21**	**Med.**	**120**	**Inside Frosted**	120	B	C-22	1000	735	2⅞	4 7/16
100A/RS	**100**	**A-21**	**Med.**	**120**	**Inside Frosted**	120	C	C-17	1000	1230	3⅞	5 5/16
150/RS	**150**	**PS-25**	**Med.**	**120**	**Inside Frosted**	60	C	C-17	1000	2120	5¼	6 11/16
200PS30/23	**200**	**PS-30**	**Med.**	**120**	**Inside Frosted**	60	C	C-9	1000	3380	6	8 1/16
200PS30/24	**200**	**PS-30**	**Med.**	**120**	**Clear**	60	C	C-9	1000	3380	6	8 1/16
300/RS	**300**	**PS-35**	**Mog.**	**120**	**Clear**	24	C	C-9	1000	5250	7	9⅛
500/RS	**500**	**PS-40**	**Mog.**	**120**	**Clear**	24	C	C-9	1000	9400	7	9¾
VIBRATION LAMPS												
25A/VS	**25**	**A-19**	**Med.**	**120**	**Inside Frosted**	120	B	C-9	1000	260	2½	3 13/16
25A/CL/VS	**25**	**A-19**	**Med.**	**120**	**Clear**	120	B	C-9	1000	262	2½	3 13/16
50A/VS	**50**	**A-19**	**Med.**	**120**	**Inside Frosted**	120	B	C-9	1000	550	2½	3 15/16
50A/CL/VS	**50**	**A-19**	**Med.**	**120**	**Clear**	120	B	C-9	1000	555	2½	3 15/16
100A23/28	**100**	**A-23**	**Med.**	**120**	**Inside Frosted**	120	C	C-9	1000	1390	4⅜	6 1/16
150/VS	**150**	**PS-25**	**Med.**	**120**	**Inside Frosted**	60	C	C-9	1000	2250	5¼	6 13/16

G·E DAYLIGHT LAMPS

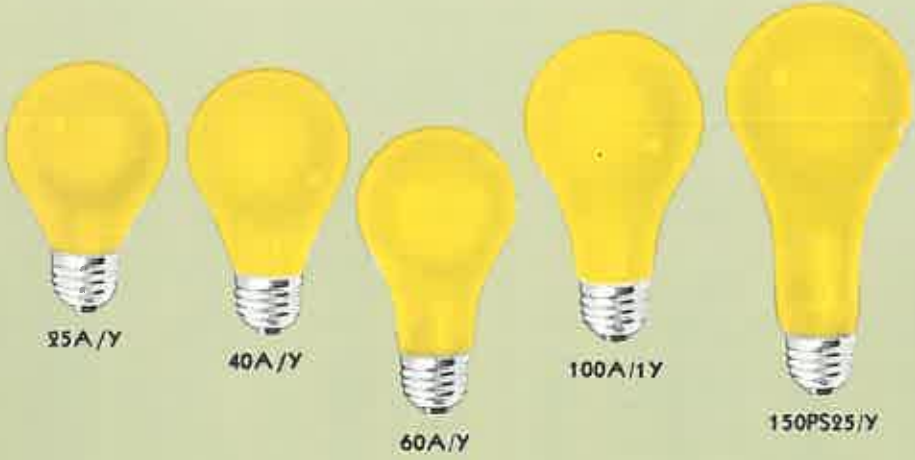


Daylight lamps give a somewhat "whiter" color quality of light than regular filament lamps. The use of either frosted or clear daylight lamps is usually simply a matter of choice. However, the frosting diffuses light and helps reduce glare and sharp shadows. The clear lamps give more sparkle to shiny merchandise, such as jewelry.

DAYLIGHT LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
10S14/D	10	S-14	Med.	115–125	Clear	120	B	C-9	1500	47	2½	3½
25A/D	25	A-19	Med.	115–125	Clear	120	B	C-9	1000	175	2½	3 13/16
60A/D	60	A-19	Med.	115–125	Inside Frosted	120	C	CC-6	1000	515	3⅛	4 7/16
100A/D	100	A-23	Med.	115–125	Inside Frosted	120	C	CC-6	750	980	4⅜	6 1/16
150/D	150	PS-25	Med.	115–125	Inside Frosted	60	C	C-9	1000	1320	5¼	6 15/16
150/DCL	150	PS-25	Med.	115–125	Clear	60	C	C-9	1000		5¼	6 13/16
200/D	200	PS-30	Med.	115–125	Clear	60	C	C-9	1000	2000	6	8 1/16

G·E YELLOW LAMPS



G-E Enameled Yellow Lamps, are excellent for decorative lighting. The 60-watt, 100-watt and 150-watt lamps, called Bug-Lites, are designed primarily for outdoor lighting during the season of night-flying insects. They have less attraction for insects than lamps of other colors.

Yellow lamps are used on open porches, for outdoor recreation areas, filling stations, camps, roadside stands, carnivals — any place where people enjoy outdoor activities under lights.

YELLOW LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Max. Ovrl. Lgth. Inches
25A/Y	25	A-19	Med.	115-125	120	B	C-9	1000	3 15/16
40A/Y	40	A-21	Med.	115-125	120	B	C-9	1000	4 7/16
60A/Y	60	A-19	Med.	115-125	120	C	CC-6	1000	4 7/16
100A/1Y	100	A-21	Med.	115-125	120	C	CC-6	1000	5 5/16
150PS25/Y	150	PS-25	Med.	115-125	60	C	C-9	1000	6 15/16

G·E HEAT LAMPS

G-E INFRARED LAMPS

G-E Infrared lamps have many uses on the farm, in the home, and in commerce and industry. They combine the features of low cost, cleanliness and efficient heat transfer to accomplish a wide assortment of warming, heating and cooking tasks. They are available in a variety of forms — clear bulbs for use in reflectors, reflector types with clear, frosted, or red ends, and the new tubular quartz types. The latter are described on the next two pages.

The 250PS30/33 reflectorized brooder lamp is specially designed to give low-cost widespread heat distribution free from "hot spots" for hover brooders and for older chicks and larger animals.

The 250R40/1 and the red-end 250R40/10 G-E heat lamps are widely used for comfort heating, relieving muscular aches, and for other warming and drying applications around the home and farm. In restaurants, red-end lamps keep dishes and foods hot and provide attractive lighting on service counters.

Infrared lamp ovens can be made to accommodate a bread box or a box car. They may use the lamps described above but, more often, are designed around the types described below. All such ovens are of simple construction and low first cost. They are readily adapted to batch type loading or conveyor operation.

The G-30 bulb lamps in external reflectors provide energy levels up to 5 watts per square inch, and are adaptable to numerous industrial uses. Their greatest use is in paint drying ovens.

The R-40 lamps are used for energy concentrations up to 10 watts per square inch. The built-in reflector is a particularly important feature in locations where reflector maintenance could be a problem. The red-end lamps are used for the occasional case where the light from these lamps is not useful. R-40 lamps can be mounted individually, in clusters, or in banks, with spacings as close as six inches on centers.

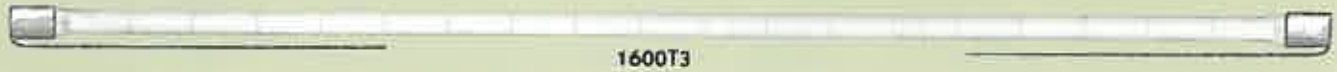
HEAT AND INFRARED LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class Filament		Light Center Length Inches	Maximum Over-all Length Inches
125G30	125	G-30	Med. Skt.	115–125	①	60	C	C-7A	5	7 3/8
250G30	250	G-30	Med. Skt.	115–125	①②	60	C	C-7A	5	7 3/8
375G30	375	G-30	Med. Skt.	115–125	①②	60	C	C-7A	5	7 3/8
500G30/1	500	G-30	Med. Skt.	115–125	①②	60	C	C-7A	5	7 3/8
250PS30/33	250	PS-30	Med.	115–125	Brooder	60	C	C-9	6	8 1/4
125R40	125	R-40	Med. Skt.	115–125	Light I. F.①	24	C	C-9	....	7 5/8
250R40/1	250	R-40	Med.	115–125	Light I. F.	24	C	C-9	....	6 5/8
250R40/10	250	R-40	Med.	115–125	Red. Bowl③	24	C	C-9	....	6 5/8
250R40/4	250	R-40	Med. Skt.	115–125	Light I. F.①	24	C	C-9	....	7 5/8
375R40	375	R-40	Med. Skt.	115–125	Light I. F.①	24	C	C-9	....	7 5/8
375R40/1	375	R-40	Med. Skt.	115–125	①③	24	C	C-9	....	7 5/8

① Average Laboratory Life in excess of 5000 hours. ② Burn only in porcelain sockets. ③ Special glass bulb—heat resistant.

G·E QUARTZ INDUSTRIAL

G-E tubular quartz infrared lamps are impervious to thermal shock — water, even ice, splashed on the hot bulb, has no detrimental effect. The many different lengths make these lamps adaptable to a great variety of heating jobs. Spaced close together, they provide energy concentrations up to 150 watts per square inch, and a maximum product temperature as high as 1600°F when used in continuous-duty ovens. Such levels often make possible substantial reductions in processing time. For short-duration over-voltage operation with clear lamps in special equipments, temperatures of over 3000°F have been obtained. Operating quartz infrared lamps at voltages in excess of the voltage ranges indicated is practicable only for intervals of one minute or less. Operation over a range of voltages below the maximum value makes possible a continuous range of energy outputs that result in substantially instantaneous response in heating effect.



G·E QUARTZLINE LAMPS

General Electric Quartzline lamps represent the first commercially successful application of the "iodine cycle" in filament lamps. The iodine cycle is a process by which evaporated tungsten particles are returned to the filament, and the inside walls of the bulb are kept free of the blackening effect of tungsten deposits.

Quartzline lamps are available in two sizes, 500 watts at 120 volts, and 1500 watts at 277 volts. The 500-watt Quartzline lamp will last twice as long on the average as the regular 500-watt PS-40 lamp. Efficiency throughout life is 21 lumens per watt compared with 17.5 lumens per watt for the 500 PS-40 lamp, an increase of 20%. The efficiency of the 1500-watt high-voltage Quartzline lamp is 22 lumens per watt throughout life, which is a 50% increase over that of the regular 1500-watt PS-52 high-voltage lamp, and 16% more efficient than the standard-voltage lamp. Quartzline lamps are also far more rugged from the standpoint of thermal shock than the regular filament lamps. Ice water poured on a burning Quartzline lamp has no effect on the tube.

Because of their small size, high output and desirable spectral qualities, Quartzline lamps have many special applications. When used in a concentrating reflector, they offer great advantages in such applications as the lighting of airport runways, golf driving ranges, sports fields, outdoor work areas, show windows, bulletin boards and industrial inspection areas.

Quartzline lamps can be operated on a commercial or industrial high-voltage distribution system without sacrificing efficiency or mechanical strength and at considerable economy in wiring costs.

The 1500-watt Quartzline lamp can be used in an all-incandescent system or in combination with either fluorescent or mercury lamps without the need for a separate standard-voltage distribution system. With suitable reflectors, light from Quartzline lamps can be controlled with great precision. A typical parabolic trough reflector will give a powerful beam of light only 6° wide. Because of the small size of the lamp, great reductions are possible in the size and weight of fixtures. For industrial use a reflector for the 1500-watt lamp need take up a space only about a foot long and four or five inches wide.

INFRARED LAMPS

In all applications where space is of paramount importance, a considerable reduction in oven size is possible because of the small physical size and high wattage available with these tubular quartz infrared lamps. High-temperature, compact infrared furnaces can even be made light enough to hang from the ceiling, or small enough to be mounted directly on machines or conveyors, making possible further economies in plant floor space or eliminating the need for additional material handling equipment.

These tubular quartz lamps should always be mounted loosely in their holders and held in place by the stranded leads which also serve as the conductors of power to the lamp.

TUBULAR QUARTZ INFRARED LAMPS

Lamp Ordering Abbreviation	Lamp Watts	Voltage Range*	Std. Pkg. Qty.	Lighted Length Inches	Maximum Overall Length Inches
375T3	**375**	**115–125**	12	5	8 1/16
500T3	**500**	**115–125**	12	5	8 1/16
1000T3	**1000**	**230–250**	12	10	13 15/16
1600T3	**1600**	**230–250**	12	16	19 15/16
2500T3	**2500**	**460–500**	12	25	28 15/16
3800T3	**3800**	**550–600**	12	38	41 15/16

* See text for operation at other voltages. Average laboratory life is in excess of 5000 hours.

500T3Q/CL

1500T3Q/CL

QUARTZLINE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Std. Pkg. Qty.	Class of Lamp	Filament	Average Overall Lgth. In.	Approx. Hours Life
500T3Q/CL	**500**	**T-3**	**Recessed Single Contact**	**120**	12	C	C-8	4 5/8	2000
1500T3Q/CL	**1500**	**T-3**	**Recessed Single Contact**	**277**	12	C	C-8	10	2000

G·E LAMPS FOR APPLIANCE AND

INDICATOR SERVICE

These pages illustrate but a few of the more popular small, low-wattage lamps which are not only adding to the sales appeal, beauty, convenience and safety of a wide variety of appliances but are also proving to be valuable additions to many other kinds of equipment for home, commercial and industrial use. General Electric offers a complete line of lamps and nation-wide lamp application engineering service to designers and engineers.

Lamp performance tests under controlled laboratory or actual field conditions are recommended on prototype models whether lighting or styling revisions are involved.

Incandescent lamps designed for use on equipment where they may be subjected to vibration or shock have features such as special filament wire, mount construction or filament windings. In general, these lamps can be burned in any position. However, when vibration or shock exist, better performance is obtained by mounting the lamp parallel to the principal direction of the vibration or shock. Fluorescent lamps in the shorter sizes have also proven to be good performers under vibration conditions.

For recessed locations in the walls of refrigerators and freezers, the 15T7, 25T8, 40T6½/2 and 40-T10/1F lamps are particularly effective. Other lamps popular for refrigerator service are the 40A15/1 and 15S11/102.

Lamps for service in high ambient temperatures (ovens, rotisseries, etc.) have special basing cement and several other features which provide improved performance and longer life under such conditions. The 40A15/22 withstands temperatures up to 475°F. Commercial oven lamps are tested at 550°F.

The small S-6 lamps and the 7-watt, C-7 lamps have many applications in homes and industry but are not designed to withstand shock and vibration. The 6T4½/1 lamp is used where space requires a small standard-voltage lamp. The 10C7/4 provides more light than other indicator types.

Ozone producing lamps in home laundry equipment provide a freshening effect on laundered fabrics. The 40A15/1 is used to ballast the ozone producing lamp and light the interior of the washer or dryer if it is in a dry location. If the lamp is located where water may strike the bulb, the 35A/A15 should be used as a ballast.

APPLIANCE AND INDICATOR LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Principle Uses	Filament	Approx. Hr. Life	Lumens	M.O.L.
6S6	6	S-6	Cand.	12	Indicator, Coin Machine	C-2V	1500	50	1 7/8
3S6/5	3	S-6	Cand.	120		C-7A	3000	12	1 7/8
6S6	6	S-6	Cand.	120		C-7A	1500	44	1 7/8
6S6	6	S-6	Cand.	135,145		C-7A	1500	37	1 7/8
6S6DC	6	S-6	D.C. Bay.	120		C-7A	1500	44	1 13/16
6S6/R ⑥	6	S-6	Cand.	115-125①	Indicators⑤	C-7A	1500	.....	1 7/8
6S6/W	6	S-6	Cand.	115-125①		C-7A	1500	34	1 7/8
6T4½/1	6	T-4½	Cand.	120		C-7A	1500	44	1 7/8
10S6/10	10	S-6	Cand.	230, 250		C-7A	1500	67	1 7/8
7C7/W	7	C-7	Cand.	115-125①	Night Light, Clock	C-7A	3000	36	2 1/8
7C7	7	C-7	Cand.	115-125①	Indicators⑤,	C-7A	3000	46	2 1/8
7C7/R ⑥	7	C-7	Cand.	115-125①	Toys. Novelties,	C-7A	3000	.....	2 1/8
10C7/4	10	C-7	Cand.	115-125①	Decorative	C-7A	1500	80	2 1/8
10C7	10	C-7	Cand.	115-125①	*	C-7A	②	40	2 1/8
10C7DC	10	C-7	D.C. Bay.	115-125①	*	C-7A	②	39	2 3/16
40A15/1	40	A-15	Med.	115-125①	**	C-9	1000	468	3 1/2
35A/A15	.35A	A-15	Med.	115	G4S11 Ballast	C-9	2000	350	3 1/2
15S11/102	15	S-11	Med.	115-125①		C-7A	400	142	2 1/4
40T6½/2	40	T-6½	Inter.	115-125①	Refrig. Freezer	C-8	750	460	5 1/2
40T10/1F	40	T-10	Med.	120		C-8	1000	425	5 5/8
15T7C	15	T-7	Cand.	115-125①		C-7A	③	116	2 1/4
15T7DC	15	T-7	D.C. Bay.	115-125①		C-7A	③	116	2 1/4
15T7DC/1F	15	T-7	D.C. Bay.	115-125①		C-7A	③	113	2 1/4
15T7N	15	T-7	Inter.	115-125①	Most Appliances,	C-7A	③	116	2 1/4
25T8DC	25	T-8	D.C. Bay.	115-125①	Coin Machines	C-7A	④	240	2 5/8
25T8DC/1F	25	T-8	D.C. Bay.	115-125①		C-7A	①	235	2 5/8
25T8N	25	T-8	Inter.	115-125①		C-7A	④	240	2 5/8
40A15/22	40	A-15	Med.	115-125①	Home Oven	C-9	750	480	4
100A23/20	100	A-23	Med.	115-125①	Commercial Oven	CC-6	1000	1550	6 1/16
15T6	15	T-6	Cand.	120	Power Switch-board, Clocks	C-1	2000	114	3 1/16
15T6	15	T-6	Cand.	140		C-1	2000	106	3 1/16
G4S11 ⑨	4	S-11	Inter.	10	Washer, Dryer		6000⑦	.....	2 1/4

① Design Volts 120.
③ Indefinite-long life, dependent on service conditions.
④ Average laboratory vibration life is 600 hours for sewing machine service.
⑤ Average laboratory vibration life is 200 hours for vacuum cleaner service.
⑥ Not recommended where shock or vibration is present.
* Indicators, Toys, Novelties, Coin Machines, Range, Air Cond., Clocks.
** Refrig., Ballast for G4S11.
⑨ Other colors available.
② Approx. life under specified test conditions with continuous burning.
⑦ Produces minute quantities of ozone.

G-E SHOW CASE LAMPS

25T6½

25T6½/IF

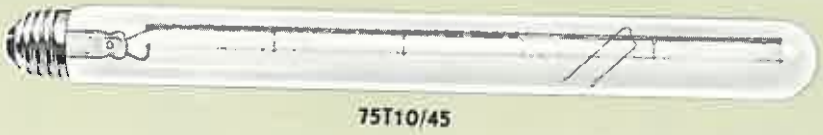
25T10 40T10 60T10/64

40T8

25T10/IF 40T10/IF

40T8/IF

25T10/RFL 40T10/RFL



75T10/45

Tubular bulb lamps **are for use in** showcases, **in displays of** shallow **depth, and in** small trough type **reflectors.**

The **reflector-type** lamp has **an** inside reflectorized **surface covering one** side **of the** bulb. The con**ventional screw** base and a spring contact on the **base allow** desired positioning.

TUBULAR AND SHOW CASE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Initial Lumens	Max. Ovrl. Lgth. Inches
25T6½	25	T-6½	Inter.	120	Clear	60	B	C-8	1000	244	5½
25T6½/IF	25	T-6½	Inter.	120	I. F. Showcase	60	B	C-8	1000	240	5½
40T8	40	T-8	Med.	120	Clear	24	B	C-23	1000	410	11⅞
40T8/IF	40	T-8	Med.	120	I. F. Showcase	24	B	C-23	1000	405	11⅞
25T10	25	T-10	Med.	120	Clear	60	B	C-8	1000	260	5⅝
25T10/IF	25	T-10	Med.	120	I. F. Showcase	60	B	C-8	1000	255	5⅝
25T10/RFL	25	T-10	Med.	120	Refl. Showcase	60	C	CC-8	1000	215	5⅝
40T10	40	T-10	Med.	120	Clear	60	B	C-8	1000	430	5⅝
40T10/IF	40	T-10	Med.	120	Inside Frosted	60	B	C-8	1000	425	5⅝
40T10/RFL	40	T-10	Med.	120	Reflector Showcase	60	C	CC-8	1000	410	5⅝
60T10/64	60	T-10	Med.	120	Showcase	60	C	C-8	1000	745	5⅝
75T10/45	75	T-10	Med.	120	Showcase	24	B	C-23	1000	800	11⅞

G·E LAMPS FOR OPTICAL DEVICES

Lamps for optical devices serve important functions throughout the fields of science, industry and education. The lamps on this page are merely a suggestion of the many types of construction and the variety of uses of such lamps. In most of these lamps, the applications for which they are intended impose exacting standards of quality and precision in design and manufacture.


7.5A/T8/92SC


3.5A/T8SCP
7.5A/T8SCP


5A/G16½/3


150T8/2SC


25T6½DC

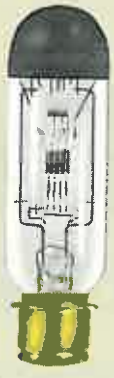

25T6½DC/IF


150P25/10


18A/T10/2P


150/400


500T20/64


750T12/34


100T8½/8


100T8½/9


125T10P

LAMPS FOR OPTICAL DEVICES

Lamp Ordering Abbreviation	Watts or Amperes	Bulb	Base	Volts	Principle Uses	Filament	Approx. Hours Life	Lumens	L.C.L.	M.O.L. Inches
3.5A/T8SCP	3.5A	T-8	S.C. Pref.	6	Photoelectric Cell Excitation	C-2	3000	375	1⅛	3⅛
5A/G16½/3	5A	G-16½	S.C. Pref.	20	Contour Map&Micro. Proj.	CC-6	50	2500	1⅜	3
7.5A/T8SCP	7.5A	T-8	S.C. Pref.	10	Sound Reproduction	C-6	100	1550	1 15/32	3⅛
7.5A/T8/92SC	7.5A	T-8	S.C. Bay.	10	Sound Reproduction	C-8	100	1510	1¾	3⅛
25T6½DC	25	T-6½	D.C. Bay.	120	Scale Illumination	C-8	1000	244	....	5½
25T6½DC/IF	25	T-6½	D.C. Bay.	120	Scale Illumination	C-8	1000	240	....	5½
100T8½/8	100	T-8½	Med. Pf.	120	Microscope Illumination	CC-13	50	1880	2 3/16	5¾
100T8½/9	100	T-8½	Med.	120	Microscope Illumination	CC-13	50	1880	3	5½
18A/T10/2P	18A	T-10	Med. Pf.	6	Slit Illumination & Microscopes	SR-6A	50	2000	2 3/16	5¾
125T10P	125	T-10	Med. Pf.	120	Dental Spotlight	C-13B	500	1750	2 3/16	5¾
150T8/2SC	150	T-8	S.C. Bay.	120	Advertising Projection	2CC-8	200	2700	1⅜	3⅝
150P25/10	150	P-25	Med.	120	Hospital Spotlight I.F.	C-5	200	2100	3	4¾
150/400	150 250 400	PS-35	3C. Mog.	120	Hospital Spotlight	2C-7A	200	. . .	7	9⅜
500T20/64	500	T-20	Med. Pf.	120	Display Spotlight	C-13	500	9500	2 3/16	5¾
750T12/34	750	T-12	Med. Pf.	120	Advertising Projection	C-13D	200	16500	2 3/16	5¾

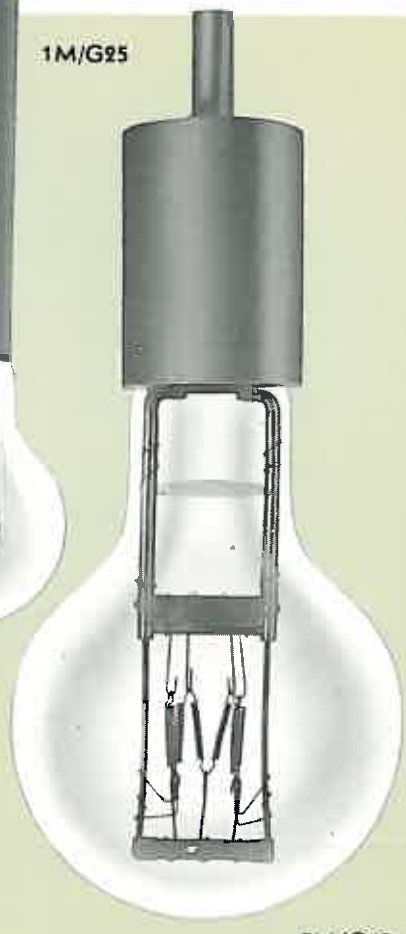
G-E MARINE LAMPS

46A/S8SCP
70A/S8

50/50P25/28
100/100P25/29

1M/T20/5

1M/G25



5M/G48

Marine lamps are used on shipboard to outline and identify vessels for seaway safety, and to signal between ships. On land, they provide a light source for lighthouse beacons and navigation. Underwater, at pressures up to 300 PSI, deep sea lamps in appropriate reflectors illuminate areas where divers must work. G-E marine lamps are designed specifically for these demanding services. Other G-E filament and fluorescent lamps effectively provide general illumination in ship cabins and work areas.

MARINE LAMPS

Ordering Abbreviation	Service	Watts or Amps.	Volts	Base	Std. Pkg. Qty.	Class and Fila.	Approx. Hours Life	Lumens	Light Center Length Inches	Max. Over-all Length Inches
1M/G25	Deep Sea *①	1000	115-125	Special	4	C, C-5	50	25M	8¾	10¾
50/50P25/28	Running†	50	120	3-cont. mog.	60	C, C-5		375		
		50				C-9	750	435	3 5/16	5 1/16
100/100P25/29	Running†	100	120	3-cont. mog.	60	C, C-5		1080		
		100				C-9	750	1590	3 5/16	5 1/16
5M/G48	Deep Sea *①	5000	115-125	Special	6	C, C-5 2 fil.	25	.....	....	12½
1M/T20/5	Lt.house†①	1000	120	Mog.	12	2C-5	1000	.....	4¾	9 1/16
46A/S8SCP	Signal	.46A	6.2	S.C. Pf.	100	C, C-8	500	.....	1⅛	2
70A/S8	Signal	.70A	6.2	S.C. Pf.	100	C, C-8	500	.....	1⅛	2

* To be burned only under water. Withstands 300 pounds per square inch water pressure. † Burn base down.
① Heat resistant glass.

G-E MINE LAMPS

50A19/35

150PAR46/1

PAR lamps are designed for mine locomotives, loaders, shuttle cars, and other equipment. They will give long service under severe mine conditions because of their resilient filament mounts.

The 150PAR46/1, 32-volt lamp is especially designed for locomotive service. It has rugged filament construction and its concentrated beam closely fits haulage ways.

Proper resistors must be used in series with 32-volt and 115-volt lamps.

MINE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pgk. Qty.	Class	Fila.	Approx. Hours Life	Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
50A19	50	A-19	Med.	275	Inside Frosted	120	B	C-17	1000	460	2½	3 15/16
50A19/35	50	A-19	Med.	275	Clear	120	B	C-17	1000	465	2½	3 15/16
50A19	50	A-19	Med.	300	Inside Frosted	120	B	C-17	1000	460	2½	3 15/16
50A19/35	50	A-19	Med.	300	Clear	120	B	C-17	1000	465	2½	3 15/16
100A	100	A-21	Med.	275	Inside Frosted	120	C	C-7A	1000	1200	3⅞	5 9/16
100A	100	A-21	Med.	300	Inside Frosted	120	C	C-7A	1000	1200	3⅞	5 9/16
200	200	PS-30	Med.	275	Clear	60	C	C-9	1000	2700	6	8 1/16
200	200	PS-30	Med.	300	Clear	60	C	C-9	1000	2700	6	8 1/16
150PAR46/1	150	PAR-46	Sc. Term.	32	Locomotive Headlight	12	C	CC-8	800	.....	....	3¾
150PAR46	150	PAR-46	Sc. Term.	115	Locomotive ① Headlight	12	C	C-13	1000	.....	....	3¾
150PAR46/3	150	PAR-46	Sc. Term	175	Locomotive Headlight	12	C	C-13	800	.....	....	3¾

① Burning position, plane through lamp axis and base terminals horizontal.

G·E STREET RAILWAY LAMPS

General Electric manufactures a line of lamps engineered and designed specifically for street railway systems. Because of the rough service to which these lamps are exposed the filaments in the various incandescent lamps are made of especially treated tungsten and the lamps are identified and marked in odd wattages. Fluorescent lamps for this service are designed for d-c operation in series with an appropriate ballast and resistor. Voltages available on street railway systems, including the shops and yards, range from 525 volts to 625 volts d-c. All lighting must operate from such circuit voltages. The PAR-type car headlight which was also designed specifically for this service is connected to the trolley control power through a series resistor. All other filament lamps throughout the system are used in series with appropriate numbers of other lamps of identical wattage and voltage.

The 30-volt lamps contain a cutout feature which short circuits the lamp upon burnout.

STREET RAILWAY LAMPS

Lamp Ordering Abbreviation	Watts or Amps.	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Fils.	Approx. Hours Life	Initial Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
60PAR/1	60	PAR-46	Mog. End Prong	38	Headlight	12	C	CC-2V	500	.....	.....	4 3/8
94P25	94	P-25	Med.	120	Headlight (.863A)	60	B	C-5	1000	920	2 1/16	4 3/4
150P25/15	150	P-25	Med.	120	Headlight	60	C	C-5	500	1900	2 1/16	4 3/4
36A/RY	36	A-21	Med.	120	.342A	120	B	C-9	2000	390	2 7/8	4 7/16
56A21	56	A-21	Med.	120	.519A	120	B	C-9	2000	615	2 7/8	4 7/16
1A/A19	1A	A-19	Med.	30	Inside Frosted	120	C	C-2R	2000	.....	2 1/2	3 15/16
1.6A/A21	1.6A	A-21	Med.	30	Inside Frosted	120	C	C-2R	2000	.....	2 7/8	4 7/16
2.5A/A21	2.5A	A-21	Med.	30	Soft-White	120	C	C-2R	2000	.....	2 7/8	4 7/16
FLUORESCENT												
F48T8/SW/1*	20.5-28.5	T-8	Single-Pin	.....	Soft-White	24	.....					48
F72T8/SW/1*	31.0-43.5	T-8	Fluted	.....	Soft-White	24	.....					72

* D.C. Operation

G·E TRAFFIC SIGNAL LAMPS

Traffic signal lamps are designed to meet the performance recommendations of the Institute of Traffic Engineers. They are classified into light-output design groups—665, 1260, and 1950 lumens—to achieve the specified patterns of traffic-signal beam candlepower. The lamps of different life rating and wattage within each design group are all equal in light output but the longer-life lamps (note the wattage differences) are often used in group replacement programs to reduce maintenance expense and signal outages due to lamp burnouts.

Conventional signal heads of 8-inch diameter employ the 665-lumen and 1260-lumen lamps—with the 1260-lumen lamps being applied especially where there is high background brightness or where a special hazard may call for a signal having higher attention-value.

The newer 12-inch traffic signals are also used under the latter conditions, and particularly at high-traffic intersections and on highways that require visibility at longer distances. These signals should use higher-lumen lamps—the 1950-lumen or 2250-lumen lamps.

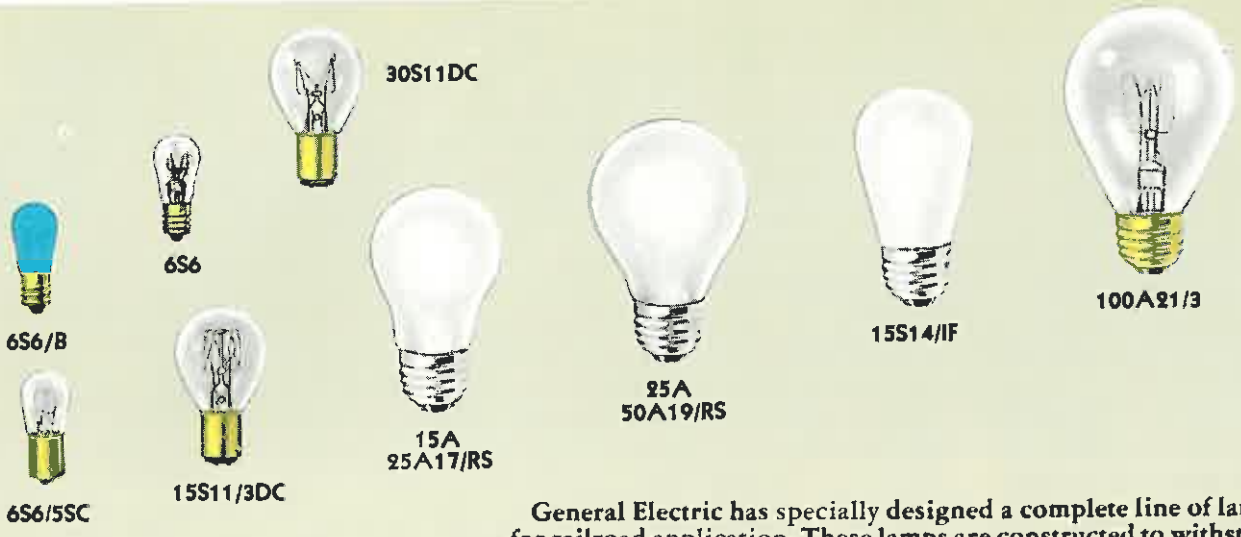
Each of the traffic-signal lamps is gas filled, with medium screw base and C-9 filament, and is available in 115, 120 or 125 volts.

TRAFFIC SIGNAL LAMPS — 120 Volts.

Lamp Ordering Abbreviation	Std. Pkg. Qty.	Rated Light Output—Avg. Initial Lumens	Rated Average Life	Approx. Watts
40A/TS	120	360	2000	40
60A21/TS	120	665	2000	60
64A21/TS	120	665	3000	64
69A21/TS	120	665	6000	69
100A21/TS	120	1260	2000	100
107A21/TS	120	1260	3000	107
116A21/TS	120	1260	6000	116
Max. overall length 4 1/16 inches. Light Center Length 2 7/16 inches.				
1950L/P25/6	60	1950	6000	150
2250L/P25/2	60	2250	2000	150
M.O.L. 4¾". L.C.L. 3". These lamps designed for use in 12" signal heads.				

The 60-watt lamps are the lowest wattage to meet minimum value of 665 lumens recommended by the Institute of Traffic Engineers.

G·E LOCOMOTIVE AND TRAIN LAMPS



General Electric has specially designed a complete line of lamps for railroad application. These lamps are constructed to withstand the intense vibrations and shocks encountered in this service. In general they are available for operation on either 30-, 34- or 60-volt direct current circuits. To insure satisfactory life, voltage regulating devices must be kept adjusted to the proper voltage so that the voltage at the lamp socket corresponds with that shown on the lamp marking.

TRAIN LIGHTING LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Initial Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
6S6	6	S-6	Cand.	30	Clear	240	B	C-2V	1500	50	....	$1\frac{7}{8}$
6S6/B	6	S-6	Cand.	30	Blue	240	B	C-2V	1500	.....	....	$1\frac{7}{8}$
15A	15	A-17	Med.	30	Inside Frosted	120	C	C-9	1000	180, ...	$2\frac{3}{8}$	$3\frac{5}{8}$
15A	15	A-17	Med.	60, 75	Inside Frosted	120	B	C-9	1000	147	$2\frac{3}{8}$	$3\frac{5}{8}$
25A	25	A-19	Med.	30, 34	Inside Frosted	120	C	C-9	1000	350, 400	$2\frac{1}{2}$	$3\frac{15}{16}$
25A	25	A-19	Med.	60, 75	Inside Frosted	120	C	C-9	1000	285, 240	$2\frac{1}{2}$	$3\frac{15}{16}$
25T8½/IF	25	T-8½	Med.	30	Inside Frosted	60	C	C-8	1000	352	....	$5\frac{3}{8}$
30S11DC	30	S-11	D. C. Bay.	64	Marker	120	C	C-7A	500	350	$1\frac{1}{4}$	$2\frac{3}{8}$
40A	40	A-19	Med.	30, 60	Inside Frosted	120	C	C-9	1000	525, 600	$2\frac{7}{8}$	$4\frac{1}{4}$
50A21	50	A-21	Med.	30, 34	Inside Frosted	120	C	C-9	1000	810, 920	$3\frac{3}{8}$	$4\frac{15}{16}$
50A21	50	A-21	Med.	60, 75	Inside Frosted	120	C	C-9	1000	690, 730	$3\frac{3}{8}$	$4\frac{15}{16}$
100A	100	A-23	Med.	30, 34	Inside Frosted	120	C	C-9	1000	1880, 2120	$4\frac{3}{8}$	$6\frac{1}{16}$
100A	100	A-23	Med.	60	Inside Frosted	120	C	C-9	1000	1650	$4\frac{3}{8}$	$6\frac{1}{16}$

LOCOMOTIVE LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
6S6/5SC	6	S-6	S. C. Bay.	60	Train	240	B	C-1	1500	45	$1\frac{1}{16}$	$1\frac{13}{16}$
15S11/3DC	15	S-11	D. C. Bay.	75	Train	120	B	C-1	1000	138	$1\frac{1}{4}$	$2\frac{3}{8}$
15S14/IF	15	S-14	Med.	34	Loco. Cab	120	B	C-9	1000	144	$2\frac{1}{2}$	$3\frac{1}{2}$
25A17/RS	25	A-17	Med.	75	I. F. Train Rough Serv.	120	B	C-9	1000	250	$2\frac{1}{2}$	$3\frac{5}{8}$
30S11DC	30	S-11	D. C. Bay.	64	Marker	120	C	C-7A	500	350	$1\frac{1}{4}$	$2\frac{3}{8}$
50A19/RS	50	A-19	Med.	75	I. F. Train Rough Serv.	120	B	C-9	1000	545	$2\frac{1}{2}$	$3\frac{15}{16}$

LOCOMOTIVE HEADLIGHTING LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Burning Position	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Lumens	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
100A21/3	100	A-21	Med.	32	Base Down to Horiz. ①	120	C	C-5	500	1570	3	$4\frac{7}{16}$
200PAR	200	PAR-56	Screw Term.	30	Horizontal	12	C	CC-8	500	.....	....	$4\frac{1}{2}$
250P25	250	P-25	Med.	32	Base Down to Horiz. ①	60	C	C-5A	500	4500	3	$4\frac{3}{4}$
250P25/22	250	P-25	Med. Pf.	32	Base Down to Horiz. ①	60	C	C-5A	500	4500	$2\frac{3}{16}$	5

① Unsatisfactory lamp operation is likely to occur in burning positions between horizontal and base up, particularly between 45° from base up and base up.

② Heat resistant Glass.

LOCOMOTIVE HEADLIGHTING

The recommended lamp for this service is the 200PAR sealed beam lamp. It incorporates filament, reflector, and cover glass in a single unit. Usually, two lamps are used simultaneously on road locomotives, a single lamp on switching locomotives. When these lamps are used on Diesel-electric locomotives, resistors of the proper value must be connected in series with them to reduce the voltage across the lamps to 12 or 30 volts.

LOCOMOTIVE CAB LIGHTING

The 34-volt lamps are intended for use in steam locomotive cabs. The 75-volt lamps are for use in Diesel-electric locomotives.

The 6S6 lamps are used either as indicators or for instrument lighting. The 25- and 50-watt lamps are for use in the engine compartment as well as for cab lighting.

The 30-watt S-11 lamp is mainly a marker or classification lamp, operated in series with a resistance on Diesel-electric locomotives.

G·E RAILWAY SIGNAL LAMPS

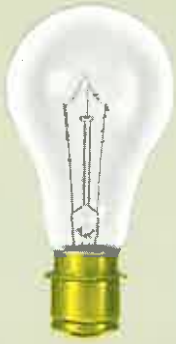
General Electric manufactures a complete line of precision Railway Signal lamps. The 18S11/1SC and 25S11/4SC have recently been developed in cooperation with the Signal Section of AAR. The filament in these lamps is more concentrated, than in the previous lamps. This results in better optical control and therefore in increased signal brightness. The 18/3.5A15/5 (10V) has a two-lug sleeve collar and the 18A15/12 has a three-lug sleeve collar. This type of collaring assures accurate positioning of the light source in the optical system.

Where lamps are subjected to vibration conditions, bayonet-base lamps are usually preferred over screw-base lamps.

RAILWAY SIGNAL LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Std. Pkg. Qty.	Class	Filament	Approx. Hours Life	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
18S11/1SC	18	S-11	S. C. Bay.	10	120	C	CC-6	1000	1¼	2⅜
25S11/4SC	25	S-11	S. C. Bay.	10	120	C	CC-6	1000	1¼	2⅜
18/3.5A15/5	18	A-15	2 Lug Sl.	10	120	C	C-2V, CC-6	1500	2⅛	3¾
18/A15/12	18	A-15	2 Lug Sl.	10	120	C	2C-2V	1500	2⅛	3¾

G E LAMPS FOR AIRPORTS



40A21P
75A21P
100A21P

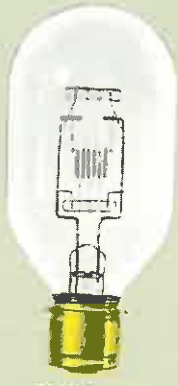
325/66/A21
1020/66/A21

6.6A/T10/1P
6.6A/T10P

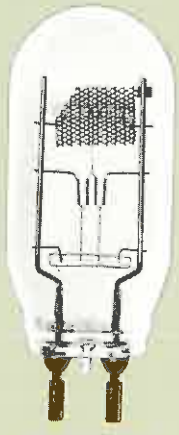
6.6A/T14P

6.6A/PAR56/3
20A/PAR56/2

6.6A/PAR56/2
20A/PAR56

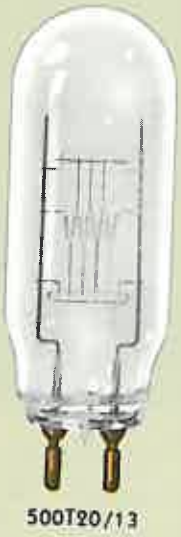


500T20/25

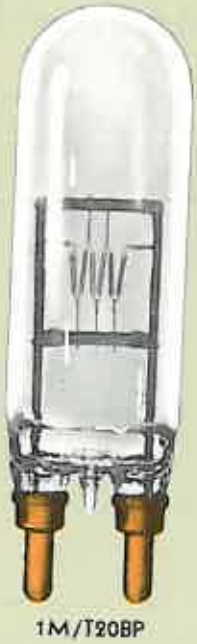


20A/T20/5

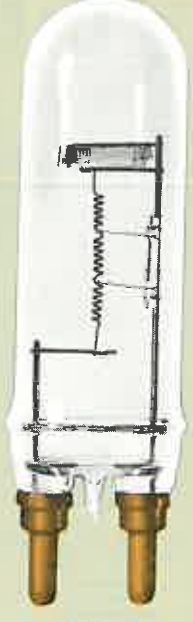
500PS40/45
620PS40/P



500T20/13



1M/T20BP



1200T20

G-E LAMPS FOR AIRPORTS

G-E airport lamps provide vital lighting for safety at the nation's landing fields. Beacons help pilots identify individual airports quickly and accurately. Approach-lighting systems guide aircraft safely from the airways to the runways in adverse weather. On the ground, lamps outline the runways and taxiways for safe travel. Obstruction markers identify possible hazards.

Airport lighting usually requires precise control of light. Most airport lamps must, therefore, have accurately constructed filaments that are accurately positioned by means of bipost or prefocus type bases. For the same reason, precision-made PAR-type lamps having built-in light control are being used more and more extensively on airports.

Code Beacon Lamps are used as obstruction markers on tall structures. The 500PS40/45 rated at 1000 hours is generally used where lamp replacement is easy. The 3000-hour 620PS40P allows the economy of group replacement, especially where maintenance is difficult.

Present approach lighting systems use bars of light arranged in a Centerline Approach pattern on the extended runway centerline at intervals of 100 feet for a distance of 3000 feet out from the runway threshold. Each bar of light is made up of five PAR-56 sealed beam approach lamps mounted side by side and aimed toward the approaching aircraft.

High intensity runway lighting is used in conjunction with the approach lighting system. The T-14 and T-20 lamps are used in high-intensity elevated lights located along the runway edge. The T-10 lamps are used on secondary runways as medium-intensity lights, while the A-21 lamps are used in low-intensity elevated and semi-flush units.

Approach, runway, and taxiway lighting systems are served by two types of power systems. Smaller airports usually use 120-volt lamps on a multiple distribution system. Many commercial airports light their approaches, runways and taxiways from a constant-current series distribution system and use 20-ampere approach lamps and 6.6-ampere runway and taxiway lamps. Most military air bases usually use 6.6-ampere lamps throughout.

New flush types of lighting equipments are being evaluated by both civil and military agencies for use in those critical areas where the very best visual guidance is needed for the landing of aircraft. These include particularly the underrun and touchdown parts of the runway and the taxiway turnoffs. General Electric continues to play a major role in the development of the new lamps so essential to these and other jet-age projects.

Such constant improvement in G-E lamps helps flying safety to keep abreast of aircraft development. An example is the new 1200T20 beacon lamp; its CC-8 filament gives existing airport beacons a greater vertical beam spread; thus pilots of jet aircraft can identify airfields from greater distances at higher altitudes.

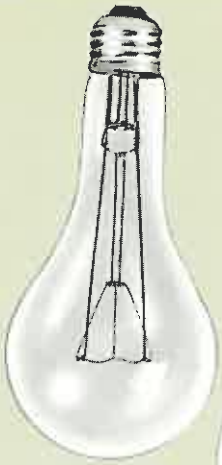
AIRPORT LAMPS

Lamp Ordering Abbreviation	Watts or Amperes	Bulb	Base	Volts Amperes	Principle Uses	Filament	Approx. Hours Life	Initial Lumens	L.C.L. Inches	M.O.L. Inches
325/66/A21	325L	A-21	Med. Pf.	6.6A	Runway-Taxiway	C-8	2000	320	$2\frac{3}{4}$	$5\frac{5}{16}$
1020/66/A21	1020L	A-21	Med. Pf.	6.6A	Runway-Obstruction, Taxiway	C-8	2000	1,000	$2\frac{3}{4}$	$5\frac{5}{16}$
6.6A/PAR56/2	200	PAR-56*	Mog. End Prong	6.6A	Approach①	CC-6	300	.....	....	5
6.6A/PAR56/3	200	PAR-56*	Sc. Term.	6.6A	Flush Runway③	CC-6	300	.....	....	$4\frac{1}{2}$
6.6A/T10/1P	30	T-10	Med. Pf.	6.6A	Runway-Taxiway②	C-2V	1000	420	$1\frac{1}{2}$	$3\frac{13}{16}$
6.6A/T10P	45	T-10	Med. Pf.	6.6A	Runway-Taxiway②	C-2V	1000	740	$1\frac{1}{2}$	$3\frac{13}{16}$
6.6A/T14P	200	T-14	Med. Pf.	6.6A	Runway-Threshold②	C-13	75	4,900	$2\frac{3}{16}$	$5\frac{3}{4}$
20A/PAR56	300	PAR-56*	Mog. End Prong	20A	Approach①	C-6	100	.....	....	5
20A/PAR56/2	300	PAR-56*	Sc. Term.	20A	Flush Approach Threshold③	C-6	100	.....	....	$4\frac{1}{2}$
20A/T20/5	500	T-20*	Med. Bip.	20A	Runway, Threshold④②	C-13	500	11,300	$2\frac{1}{2}$	$6\frac{1}{2}$
40A21P	40	A-21	Med. Pf.	120	Runway, Boundary, Taxiway	CC-2V	2000	365	$2\frac{3}{4}$	$5\frac{5}{16}$
75A21P	75	A-21	Med. Pf.	120	Runway, Threshold, Obstruction③	CC-2V	2000	875	$2\frac{3}{4}$	$5\frac{5}{16}$
100A21P	100	A-21	Med. Pf.	120		CC-2V	2000	1,170	$2\frac{3}{4}$	$5\frac{5}{16}$
500PS40/45	500	PS-40	Prong Mog. Pf.	120	Code Beacon	C-9	1000	9,900	$5\frac{11}{16}$	$10\frac{1}{16}$
620PS40/P	620	PS-40	Mog. Pf.	120	Code Beacon	C-7A	3000	10,800	$5\frac{11}{16}$	$10\frac{1}{16}$
500T20/25	500	T-20*	Med. Pf.	120	Runway, Threshold②	C-13	50	13,000	$2\frac{3}{16}$	$5\frac{3}{4}$
500T20/13	500	T-20*	Med. Bip.	120	Beacon②	C-13B	500	9,500	3	$7\frac{1}{2}$
1M/T20BP	1000	T-20*	Mog. Bip.	120	Beacon②	C-13	500	20,000	4	$9\frac{1}{2}$
1200T20	1200	T-20*	Mog. Bip.	115	Beacon②④	CC-8	750	27,500	4	$9\frac{1}{2}$

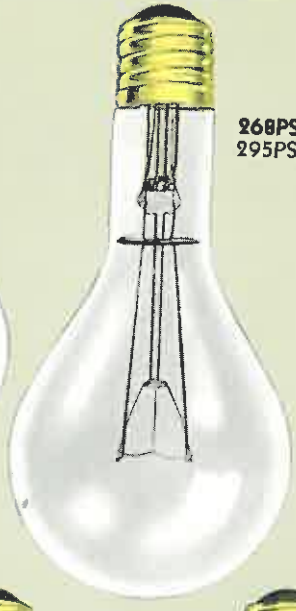
* Indicates that the lamp has a special heat-resistant glass bulb.
① Burning position 45 degrees base down to horizontal.
② Burn Base down.
④ Burn base down to horizontal.
⑤ Collector Grid used in lamp.

G·E STREET LIGHTING LAMPS

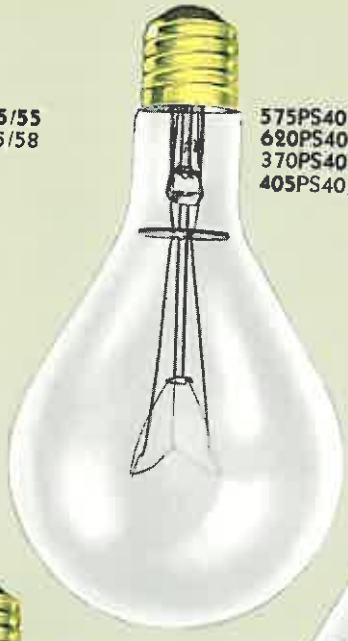
85A23/48
92A23/49



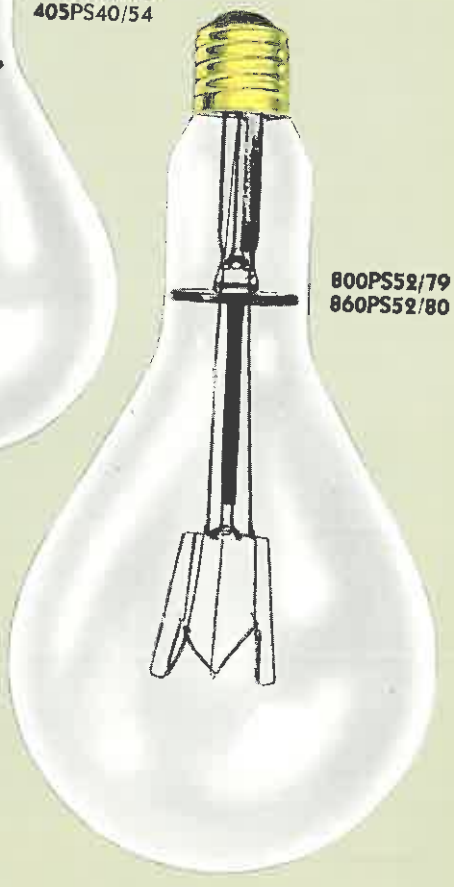
175PS25/63
189PS25/64



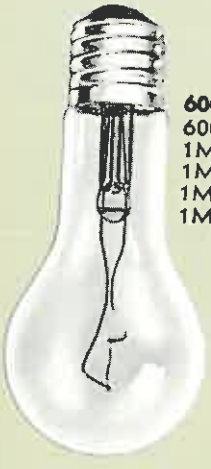
268PS35/55
295PS35/58



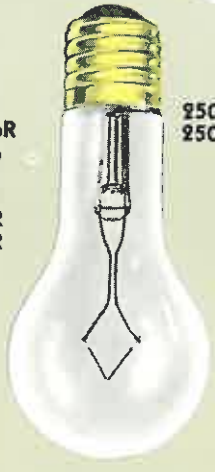
575PS40/51
620PS40/53
370PS40/50
405PS40/54



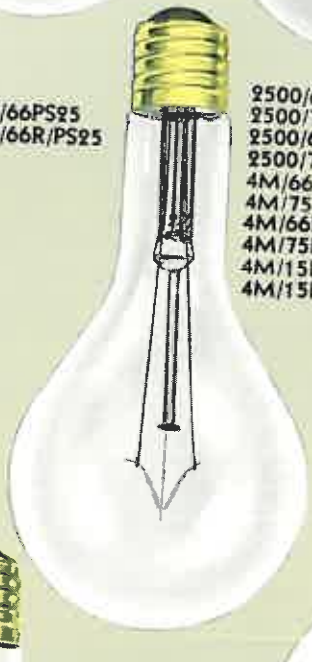
800PS52/79
860PS52/80



600/66R
600/66
1M/66
1M/75
1M/66R
1M/75R

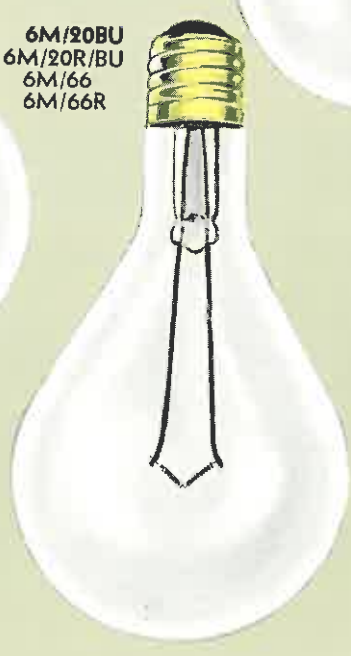


2500/66PS25
2500/66R/PS25

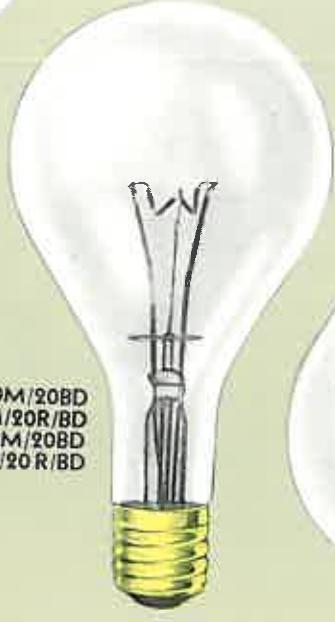


2500/66
2500/75
2500/66R
2500/75R
4M/66
4M/75
4M/66R
4M/75R
4M/15BU
4M/15R/BU

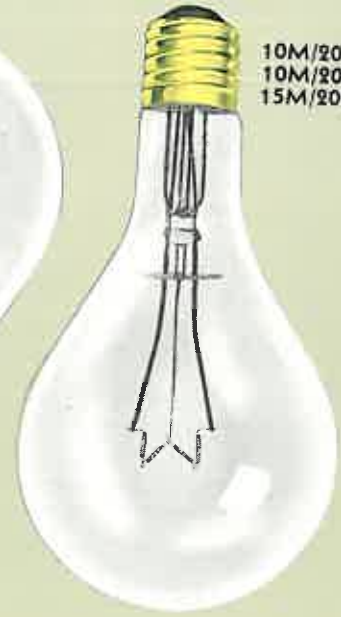
4M/15BD
4M/15R/BD



6M/20BU
6M/20R/BU
6M/66
6M/66R



10M/20BD
10M/20R/BD
6M/20BD
6M/20R/BD



10M/20BU
10M/20R/BU
15M/20BU

G. E. STREET LIGHTING LAMPS

Roadway lighting is best accomplished by proper choice, for the specific application, among filament, mercury vapor, and fluorescent lamps. The appropriate mercury lamps are included in the mercury lamp section on pages 51-55, and the fluorescent lamps on pages 62-63.

Street series lamps, operated on constant-current series circuits, have a slow increase in wattage and filament temperature throughout life. Hence the light output is maintained throughout life at a high percentage of initial value. General Electric series lamps are manufactured to precise dimensions of light-center length. The result is greater uniformity in the light-distribution patterns from street lighting luminaires.

Current variations affect sharply the performance of street series lamps. The current in street series circuits should therefore be adjusted as nearly as possible to rated value. Close-lead construction in the smaller sizes of the low-current G-E series lamps, such as the 2500-lumen PS-25 lamp, virtually eliminates any chance for severe arcing at the time of lamp failure.

The use of multiple lamps in street lighting is steadily increasing. A multiple street lamp having a certain value of *nominal* lumens is designed to deliver the same average light output throughout rated life as the series lamp with the corresponding value for rated *initial* lumens. G-E multiple street lighting lamps give optical performance equal to that of the corresponding series lamps. Multiple lamps are also available in certain combinations of bulb, base and light center length — other than those listed below — to make possible a greater degree of luminaire standardization. An alternative vibration-service design in lower-wattage multiple lamps ensures performance fully the equal of higher-wattage lamps, in especially severe street lighting service conditions.

Bases of lower-wattage series and multiple lamps are normally aluminum. However, brass bases are available to meet unusual service conditions — such as corrosive chemical or salt-laden atmospheres, or older designs of street lighting sockets with sharp-edged lamp grips.

The 3000-hour street lighting lamps are intended for group replacement twice a year. The standard-life (2000-hour series and 1500-hour multiple) street lighting lamps are widely used for group replacement three times a year.

Lamps shown in light-face type on this page have light output less than 2500 lumens, the minimum recommended by the "American Standard Practice for Street & Highway Lighting" for street lighting lamps. For new installations designed to meet these lighting standards, lamps of 2500 lumens or more give the greatest lighting economy.

MULTIPLE STREET LIGHTING LAMPS — REGULAR (a) and GROUP REPLACEMENT (b) All 120 Volts, Gas Filled.

Ordering Abbreviation		Lumens	Watts		Bulb	Base	Std. Pkg. Qty.	Filament	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
Regular (a) 1500 hr. Design	Group Rep. (b) 3000 hr. Design		1500 hr. Design	3000 hr. Design						
	58A19/62	600		58	A-19	Med.	120	C-9	2 7/8	4 1/4
85A23/48	92A23/49	1000	85	92	A-23	Med.	120	C-9	4 3/8	6 1/16
175PS25/63	189PS25/64	2500	175	189	PS-25	Med.	60	C-9	5 1/4	6 15/16
268PS35/55	295PS35/58	4000	268	295	PS-35	Mog.	24	C-9	7	9 3/8
370PS40/50	405PS40/54	6000	370	405	PS-40	Mog.	24	C-9	7	9 3/4
575PS40/51	620PS40/53	10000	575	620	PS-40	Mog.	24	C-7A	7	9 3/4
800PS52/79	860PS52/80	15000	800	860	PS-52	Mog.	6	C-7A	9 1/2	13 1/16

(a) Average laboratory life 1500 hours. (b) Average laboratory life 3000 hours. Burning position any.

SERIES STREET LIGHTING LAMPS — REGULAR (a) and GROUP REPLACEMENT (b) All Mogul Base, Gas Filled.

Lamp Ordering Abbreviation		Rated Initial Lumens	Clear Bulb	Volts		Amps	Burning Position	Std. Pkg. Qty.	Filament	Avg. Light Center Lgth. Inches	Max. Ovrl. Lgth. Inches
Regular (a) 2000 hr. Design	Group Rep. (b) 3000 hr. Design			(a) 2000 hr. Design	(b) 3000 hr. Design						
600/66	600/66R	600	PS-25	6.4	6.7	6.6	Any	60	C-8	5 3/8	7 1/8
1M/66	1M/66R	1000	PS-25	9.5	9.8	6.6	Any	60	C-8	5 3/8	7 1/8
1M/75	1M/75R	1000	PS-25	8.3	8.7	7.5	Any	60	C-8	5 3/8	7 1/8
2500/66PS25	2500/66R/PS25	2500	PS-25	21.5	22.3	6.6	Base Up	60	C-2V	5 3/8	7 1/8
2500/66	2500/66R	2500	PS-35	21.6	22.4	6.6	Any	24	C-2V	7	9 3/8
2500/75	2500/75R	2500	PS-35	19.2	19.8	7.5	Any	24	C-2V	7	9 3/8
4M/66	4M/66R	4000	PS-35	32.8	34.2	6.6	Any	24	C-2V	7	9 3/8
4M/75	4M/75R	4000	PS-35	29.1	30.0	7.5	Any	24	C-2V	7	9 3/8
4M/15BU	4M/15R/BU	4000	PS-35	13.8	14.6	15	Base Up	24	C-2V	7	9 3/8
4M/15BD	4M/15R/BD	4000	PS-35	13.8	14.6	15	Base Down	24	C-2V	6 1/4	9 3/8
6M/66	6M/66R	6000	PS-40	48.4	50.0	6.6	Any	24	C-2V	7	9 3/4
6M/20BU	6M/20R/BU	6000	PS-40	14.9	15.7	20	Base Up	24	C-2V	7	9 3/4
6M/20BD	6M/20R/BD	6000	PS-40	14.9	15.7	20	Base Down	24	C-2V	6 1/4	9 3/4
10M/66	10M/66R	10M	PS-40	79.7	86.6	6.6	Any	24	C-7A	7	9 3/4
10M/20BU	10M/20R/BU	10M	PS-40	24.4	25.3	20	Base Up	24	C-7	7	9 3/4
10M/20BD	10M/20R/BD	10M	PS-40	24.4	25.3	20	Base Down	24	C-7A	6 1/4	9 3/4
15M/20BU	15M/20R/BU	15M	PS-40	35.9	37.5	20	Base Up	24	C-7	7	9 3/4

(a) Average laboratory life: 2000 hours. (b) Average laboratory life 3000 hours.

G·E MERCURY LAMPS

GENERAL ELECTRIC MERCURY LAMPS
Design and Operating Principles

Mercury lamps are compact, versatile, highly efficient light sources. They are much longer lived than most filament lamps.

The source of light is an arc that is maintained between two electrodes in a tube containing mercury vapor. In phosphor-coated lamps the phosphor is an additional source of light. In most mercury lamps, this arc tube is enclosed in an outer bulb. This type is illustrated opposite. Other mercury lamps do not have the outer bulb. The electrodes are mounted at each end of the arc tube.

AUXILIARY EQUIPMENT

The mercury lamp, like any gaseous discharge source, has a "negative resistance" characteristic. This means that some current-limiting device must be used. Otherwise, so much current would be drawn that the lamp would be destroyed. Ballasts, therefore, are used to limit current. They also act as transformers to provide sufficient voltage for lamp starting and operating where the line voltage is insufficient. Regardless of whether the auxiliary equipment serves only to limit current or also to provide adequate voltage, it is here referred to as a "ballast."

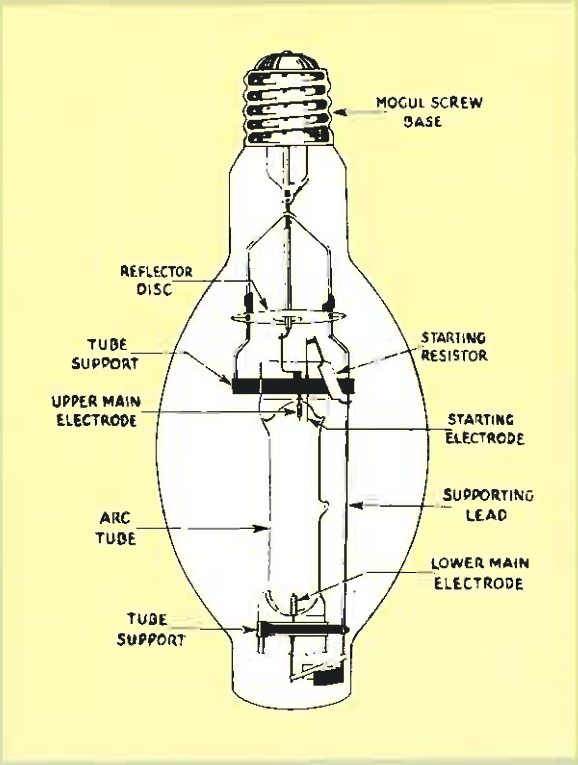
Ballasts, then, are designed to deliver the specific voltages required by the lamp. However, variations in line voltage will affect lamp performance, and the effects will depend on the type of ballast used. With regulator or stabilizing type ballasts, lamp wattage and light output are virtually unaffected by changes in line voltage. With reactor or autotransformer type ballasts, lamp wattage varies about 2% and light output about 3%, for each 1% variation in line voltage. With two-lamp ballasts (except regulator or stabilizing type) one of the lamps will be similarly affected. When using reactor or autotransformer type ballasts, the supply voltage should be within 5% of the nominal primary voltage rating. Undervoltage operation makes starting less reliable and reduces light output. Excessive voltage, with the resulting increased wattage, is likely to raise both lamp and ballast temperatures beyond safe limits.

LOW TEMPERATURE OPERATION

Mercury lamps, like any discharge lamps, require higher than normal starting voltages when the lamps are operated in low temperatures. Under such conditions, care should be taken to select the type of ballast that will provide sufficient voltage for reliable starting at the lowest temperature that is likely to be encountered.

WEATHERPROOF CASES

Weatherproof cases are provided for operation in all types of weather and to —20 degrees F. Moistureproof units are supplied for the same type of weather resistance except that they are recommended for minimum temperatures of 10 degrees F.



Clear glass mercury lamps produce a bluish-white light under which some colors appear distorted. For example, since the mercury spectrum contains almost no red, red surfaces appear brown or black. However, clear lamps are satisfactory for many applications where color rendition is not important.

General Electric Mercury lamps vary in size from 100-watt lamps in PS-25 bulbs, about 7 inches long, to 3000-watt lamps in T-9½ bulbs, 55 inches long. The selection of size and type of Mercury lamps for any specific lighting application is usually made on the basis of wattage and lumen output, color rendition, light control, and, of course, economics.

For convenience, mercury lamps may be grouped into three classifications by wattage and lumen output.

1. Low-Wattage Lamps, 100 to 250 watts.
2. 400-Watt Lamps.
3. High-Wattage Lamps. Above 400 to 3000 watts.


Weatherproof Ballast


Outdoor Ballast

Types and Sizes of Mercury Lamps

COLOR-IMPROVED MERCURY LAMPS

Where, for reasons of appearance or atmosphere, unmodified mercury light is not acceptable, color-improved lamps are recommended. These lamps have special phosphors applied to the inner surface of the bulbs. The phosphors convert the invisible and formerly unused ultraviolet energy into visible light — primarily red light. The resulting color of light from "color improved" lamps is approximately the same as that produced with a combination of equal wattages of clear-glass mercury lamps and filament lamps.

WHITE MERCURY LAMPS

White mercury lamps have an inside bulb coating of a special phosphor which converts ultraviolet energy to a broader band of visible light. These lamps are more efficient than either the clear-glass lamps or the color-improved lamps, and produce a worthwhile degree of color improvement over clear lamps.

REFLECTOR LAMPS

Reflector type lamps have sealed-in reflector coatings instead of phosphor on the inner surface of the bulb. They are made in the 100-watt size in both spot and flood distributions, aluminized reflectors, and in the 400-watt size silvered reflector.

SEMI-REFLECTOR LAMPS

Among "color-improved" and "white" mercury lamps are several in which the phosphor both reflects and transmits light, as well as converting ultraviolet energy to visible light. These "semi-reflector" lamps, as they are called, have excellent light distribution for use in high-mounted industrial lighting installations. They should be used in suitably designed reflectors.

LOW WATTAGE LAMPS

Low wattage mercury lamps are generally used for specialized applications. The 100 and 175 watt lamps are also used for residential street lighting and light traffic roadways.

The 250-watt lamps are used to some extent for general lighting applications, interior and exterior, and lighting of secondary traffic streets.

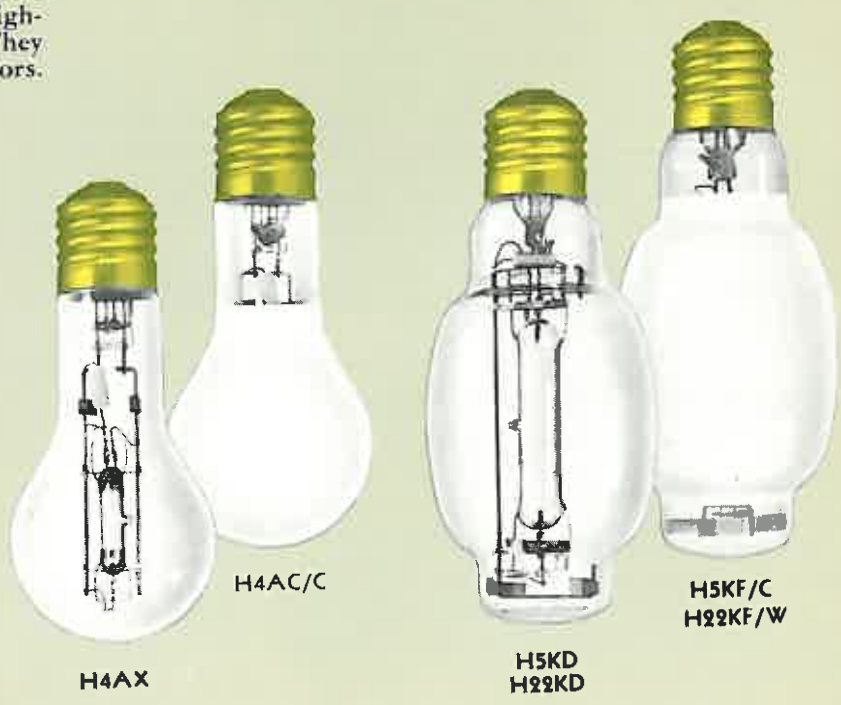
Although the H4GS and H4JM lamps (PAR-38 spots and floods) are made of heat-resistant glass, they may crack if splattered with water, particularly when operated base down or nearly so. A cover glass is suggested in these applications.

STARTING

After starting, a mercury lamp must operate for several minutes before it reaches full brilliance. When the lamp is in operation, a brief interruption in the power supply — as, for example, a sudden large drop in voltage — will extinguish the arc. Restarting does not take place until the vapor pressure in the arc tube becomes low enough to permit the arc to strike again. Where such power interruptions are likely to cause a hazardous temporary blackout of mercury lighting, some filament or fluorescent lamps are usually combined with the mercury system to bridge the period during which the mercury lamps are out — usually 4 to 8 minutes.

ECONOMIC LIFE OF MERCURY LAMPS

Mercury lamps gradually decline in light output throughout life. Some may decline as much as 50 per cent. For this reason, it has been found to be more economical from the cost of light standpoint to replace lamps before burnout than to continue operating them at their reduced output. By replacing lamps at an "economic life," rather than actual life, it is possible to increase the maintained lighting level with a given number of lamps and thus reduce lighting costs. For most operating conditions this economic life has been determined to be approximately 6000 hours. This rating has been applied to all mercury types except the 400-watt Bonus Line which have an economic life rating of 9000 hours.



G·E 400-WATT MERCURY LAMPS

G-E 400-WATT MERCURY LAMPS

The 400-watt lamps are the most popular Mercury lamps for general lighting in industrial plants, and for floodlighting and street lighting.

In street lighting luminaires, lamps are operated horizontally to enable the lamp to deliver its light into roadway lighting patterns most efficiently. The 400-watt lamps are generally used for primary traffic streets, main business streets and shopping centers, and arterial highways. Where long spacing is used, clear lamps are recommended so that precise optical control of the light may be obtained. Where closer spacing is used, phosphor-coated lamps may be used — color-improved for best color rendition, white for greater light output.

The yellow lamp is used for "caution" lighting in such locations as highway intersections, traffic circles, railroad grade crossings and other hazardous locations. It has a yellow ceramic glass coating fired on the outside of the bulb to filter out blue light, and a phosphor coating inside the bulb to produce additional yellow light.

Many existing installations still use the older designs of 400-watt lamps in BT-24 or T-16 bulbs, with glass arc-tubes. Whenever such lamps are operated horizontally the equipment must include an arc-centering magnet to ensure proper lamp life.

The H25DE lamp is recommended as a replacement for the H25HC lamp except for certain fixtures which will not take this newer lamp, BT-24 bulb.

HORIZONTAL OPERATION

The H25HC and H25DE, listed for "base-up" operation, and the H25HJ, "base-down," may nevertheless be burned in a horizontal position if an arc-deflecting magnet is used. Approximate initial lumens at rated lamp watts become 14,500 under these conditions.

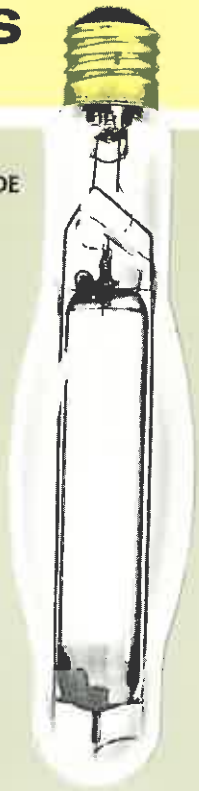
The H1LS, commonly burned horizontal for street lighting, provides approximately 20,000 lumens initially and 17,000 mean lumens. No magnet is required. Depending on the type of ballast used, actual lamp watts and lumens may vary above or below normal values by as much as 4%. Within this range, the approximate average light output is about proportional to lamp watts. The same relationship between light output and lamp watts applies for other mercury lamps when burned in a horizontal position.

WEATHER-RESISTANT LAMPS

Bulb temperatures of mercury lamps in operation are high. Some lamps are therefore susceptible to breakage if rain, snow or even large bugs strike the hot glass. For use in these conditions weather-resistant hard glass lamps are available. This glass has a higher melting point and resists thermal shock better than regular "soft" glass lamps. Otherwise the lamps are identical.

H33-1CD
H1LS
H1BA

H25DE

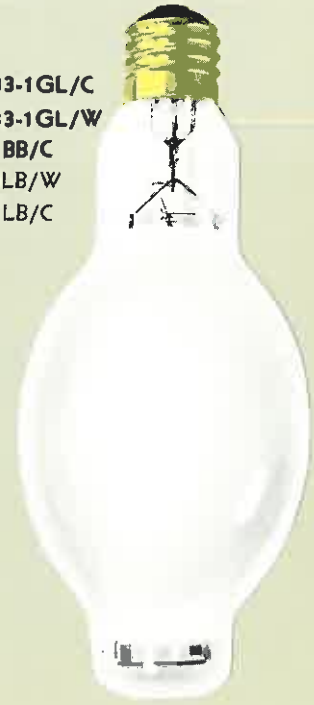


G-E MERCURY LAMPS FOR STREET LIGHTING

The type of street lighting circuit used — series or multiple — usually has no effect upon the choice of lamps, which are generally operated from individual ballasts designed for the supply voltage or current. These ballasts should be designed for outdoor operation, to provide adequate lamp starting at low temperatures. Sometimes, however, mercury lamps are operated on "straight series" street lighting circuits without individual ballasts; for such circuits, the special lamp with internal cutout is recommended, to protect the lamps and sockets from high-voltage effects at the time of lamp burnout, (H1BA or H1BB/C).

H1LB/Y

H33-1GL/C
H33-1GL/W
H1BB/C
H1LB/W
H1LB/C



400-WATT BONUS LINE LAMPS

Bonus Line 400-watt lamps are recommended for all applications. They give up to 20% lower cost of light and up to 28% more light throughout a 50% longer useful life than the regular 400-watt lamps.

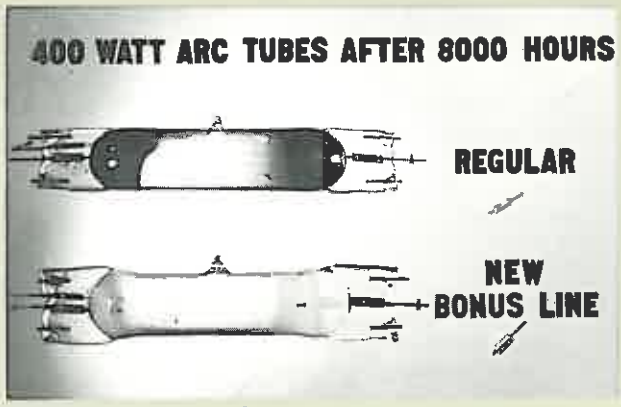
All General Electric 400-watt Bonus Line Mercury Lamps have cathodes of a new design that ends arc-tube blackening and results in increased light output throughout life. For example, after as much as 8000 hours of service, the Bonus Line Lamp, H33-1GL/C, has a 56% greater light output than the H1LB/C, the comparable regular 400-watt lamp. The 8000-hour service period is about equal to two years of two-shift operation. Corresponding increases in average light output throughout life for all Bonus Line Lamps range from 34% to 62%.

Lamp		Per Cent Higher Light Output	
(ASA) Designation	Former Designation	after 4000 hours (about 1 year)	after 8000 hours (about 2 years)
H33-1CD	H400-E1	25%	62%
H33-1GL/C	H400-J1	22%	56%
H33-1GL/W	H400-EW1	24%	64%
H33-1FY	H400-R1	15%	39%
H33-1DN/C	H400-RC1	13%	34%
H33-1DN/W	H400-RW1	14%	38%

Bonus Line lamps start easily at low temperatures. With regular 400-watt ballasts, lamps will start at 0°F or, in many cases, at even lower temperatures.

Because of improved lumen maintenance, Bonus Line Lamps have an economic life of 9000 hours. Being made of weather-resistant glass, they are well protected against the type of lamp failure that can occur with exposure to moisture.

NEW CATHODES AND OTHER IMPROVEMENTS GIVE LONGER, BRIGHTER LIFE



New Tungsten Cathodes are larger, double-wound, coated with a new electron-emissive mix. They insure longer and brighter lamp life. They operate cleaner—black deposits do not form on the inner walls of the arc tubes as the lamps age.

New, strong, simplified mount structure is designed for the least light interception—has 9 instead of 15 parts, and is silvered for high reflectance.

Improved rugged resistor is designed to withstand high voltage under high-temperature conditions. During hot restarts it protects against the combination of high temperature and high voltage that jeopardizes the life of lamps less well protected.

Protective light-reflecting nickel disk is polished to a jeweler's finish, reflects the light that would otherwise be trapped in the bulb neck and base. It also keeps sockets and lamp housings cooler by reflecting heat away from them.

400-WATT SEMI-REFLECTOR TYPE MERCURY LAMPS

The 400-watt Semi-Reflector lamps are available with either color-improved phosphor or "white" phosphor.

In these lamps, the phosphor serves as a producer, transmitter, and reflector of visible light. It also acts as a diffuser, and allows approximately one-third of the light to be transmitted upward through the coating.

400-WATT REFLECTOR TYPE MERCURY LAMPS

Silvered reflector lamps are used where color rendition is not important, and particularly where dust and dirt collection is severe. They not only control light but reduce the need for maintenance since their output is relatively unaffected by dirt and dust. To a lesser degree, this is true of phosphor-coated reflector lamps as well.

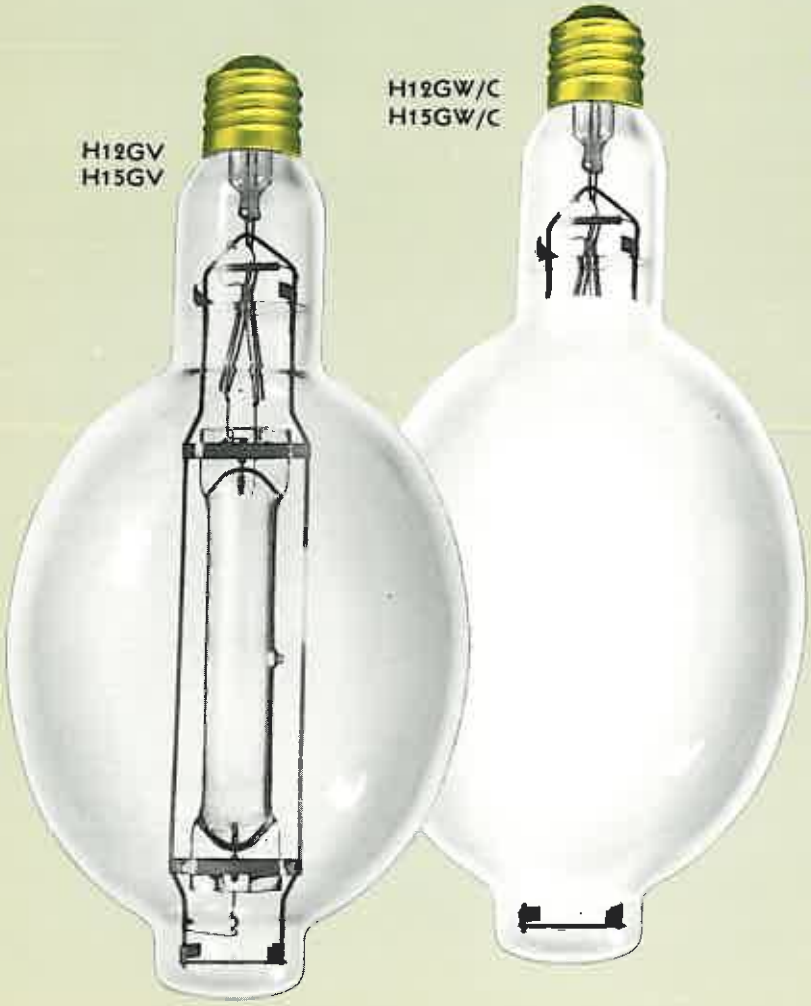
G·E 1000-WATT MERCURY LAMPS

The 1000-watt lamps are recommended for use at their rated wattage where larger amounts of light are needed for industrial and street lighting applications. The H-12 lamps are the 240-volt versions of the popular 480-volt H-15 types — both rated at 1000 watts. They are *not* interchangeable.

In the 1000-watt semi-reflector lamps, the base half of the outer jacket is coated on the inside with color-improved phosphor. Light distribution from these lamps is similar to that from the 400-watt semi-reflector lamps.

The 1000-watt lamp has a dual-wattage rating; it may be operated also at 700 watts. When so operated, the 1000-watt lamp shows excellent lumen-maintenance and life performance, so that its total "cost of light" is equal to or less than that for the 700-watt lamp on the same ballast.

H12KY/C
H15KY/C



H12GV
H15GV

H12GW/C
H15GW/C

NEW MERCURY LAMP DESIGNATIONS

The American Standards Association, working with manufacturers of mercury lamps, has formulated a new system of designating mercury lamps. Both the old and the new designations are listed in the table on the opposite page.

The new designation consists of the letter H, followed by a number and two letters. The number represents the transformer type. These are generally the same as the transformer numbers in the present system. The two letters following the number define the physical lamp characteristics. *Choice of these letters is strictly arbitrary. They are not abbreviations.* The A.S.A. system does not distinguish between various types of phosphor coated lamps. Therefore, General Electric uses a /C following the A.S.A. code to indicate color improved lamps, /W to indicate white lamps, and /Y to indicate the caution yellow color.

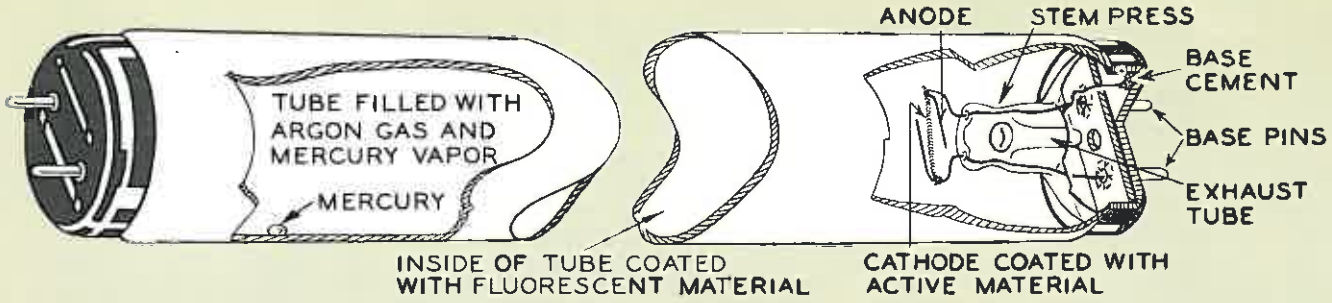
H9FJ
3000 watts

Lamp Ordering Abbreviation (ASA Code)	Old Lamp Ordering Abbreviation	Watts	Bulb	Base	Description (See Footnote No.)	Std. Pkg. Qty.	Approx. Hours Life ③	Approx. Initial Lumens	Max. Over-all Length Inches	Light Center Length Inches
H4GS	H100-SP4	100	PAR-38	Admed. Skt.	★Black Light (Spot)—Use separate filter (4)	12	6000③	2300	5 7/16	....
4JM	H100-FL4				★Black Light (Flood)—Use separate filter (4)	12	6000③	2300	5 7/16	....
H4AX	H100-L4	100	PS-25	Mog.	General & Street Lighting (8, 9)	24	6000③	3500(A)	7 1/8	5
H4AC/C	H100-M4				General and Street Lighting Color Improved (8, 8, 9)	24	6000③	3300(B)	7 1/8	5
H4AC/W	H-100-LW4				General & Street Ltg. White (8, 9)	24	6000③	3850(C)	7 1/8	5
H4AB	H100-A4	100	T-10	Admed.	★General Lighting; Black Light Use separate filter (6)	12	6000③	3500	5 3/8	3 1/16
H4AG	H100-BL4	100	T-16	Admed.	★Black Light—Integral filter (6)	12	1000	.....	5 1/2	3 1/16
H22KD	H175-A22	175	BT-28	Mog.	General and Street Lighting, Black Light—Use separate filter (8, 9,)	12	6000③	7000(D)	8 1/4	5
H22KF/W	H175-AW22	175	BT-28	Mog.	General & Street Ltg.—White (8, 9)	12	6000③	7700(E)	8 1/2	5
H5KD	H250-A5	250	BT-28	Mog.	Black Light—Use separate filter; General & Street Ltg. (8, 9)	12	6000③	11500(F)	8 1/4	5
H5KF/C	H250J5				General and Street Lighting Color Improved (8, 9)	12	6000③	11000(G)	8 1/4	5
H25DE	H400-A1	400	BT-24⑦	Mog.	★Gen. & St. Ltg. Base Up (10, 11)	12	6000③	15500(H)	13	8 1/8
H25HJ	H400-B1	400	T-16	Mog.	★General and Street Lighting Base Down (11, 12)	12	6000③	15500(H)	13	7 3/4
H1LS	H400-E1	400	BT-37	Mog.	General and St. Ltg. Black Lt.—Use separate filter (8, 9)	6	6000③	21000(I)	11 1/2	7
H1LB/W	H400-EW1				Gen. & Street Ltg. White (8, 9)	6	6000③	23000(J)	11 1/2	7
H1LB/C	H400-J1				General and Street Lighting Color Improved (8, 9)	6	6000③	20500(K)	11 1/2	7
H1LB/Y	H400-JY1	400	BT-37	Mog.	Street Ltg.—Caution Yellow (8, 9)	6	6000③	12000	11 1/2	7
H1BK	H400-R1	400	R-52	Mog.	Reflector High Bay I. F. (9)	6	6000③	18500(L)	11 3/4	....
H1LK/W	H400-RW1				Semi-Refl. High Bay White (9)	6	6000③	22500(M)	11 3/4	....
H1LK/C	H400-RC1				Semi-Refl. High Bay Color improved (9)	6	6000③	20500(N)	11 3/4	....
H33-1CD	New	400	BT-37	Mog.	★General and Street Lighting (8)	6	9000①	20500(O)	11 1/2	7
H33-1GL/C	New				★General and Street Lighting Color Improved (8)	6	9000①	20000(P)	11 1/2	7
H33-1GL/W	New				★General & Street Ltg. White (8)	6	9000①	22500(Q)	11 1/2	7
H33-1FY	New	400	R-52	Mog.	★High Bay	6	9000①	18000(K)	11 3/4	
H33-1DN/C	New				★Semi-Refl. High Bay—Color Improved	6	9000①	20000(S)	11 3/4	
H33-1DN/W	New				★Semi-Refl. High Bay—White	6	9000①	22000(T)	11 3/4	
H1BA	New	400	BT-37	Mog.	★Street Series, Internal Cutout (2, 8)	6	6000③	21000	11 1/2	7
H1BB/C	New				★Street Series, Internal Cutout Color improved (2, 8)	6	6000③	20500	11 1/2	7
H18NA	H700-A18/WR	700	BT-46	Mog.	★General & St. Ltg. (8)	6	6600③	36500(U)	14 5/16	9 1/2
H18ND/C	H700-C18/WR				★General and Street Lighting Color Improved (8)	6	6000③	34500(V)	14 5/16	9 1/2
H12GV	H1000-A12	1000	BT-56	Mog.	★General Lighting	6	6000③	54000(W)	15 1/16	9 3/8
H12GW/C	H1000-C12				★General Ltg. Color Improved	6	6000③	51500(X)	15 1/16	9 3/8
H12KY/C	H1000-RC12				★Semi-Reflector High Bay—Color Improved	6	6000③	53000(Y)	15 1/16	9 3/8
H15GV	H1000-A15	1000	BT-56	Mog.	★Gen. Street & Industrial Ltg. (8, 13)	6	6000③	54000(W)	15 1/16	9 3/8
H15GW/C	H1000-C15				★General St. & Industrial Ltg. Color Improved (8, 13)	6	6000③	51500(X)	15 1/16	9 3/8
H15KY/C	H1000-RC15				★Semi-Reflector High Bay—Color Improved (13)	6	6000③	53000(Y)	15 1/16	9 3/8
H9FJ	H3000-A9	3000	T-9½	S. C. Term.	★High Bay Industrial Ltg.	1	6000③	132000(Z)	55	...

★ Weather-resistant bulb.
① Economic life.
② Burning Position-Base down to horizontal.
③ Economic life under typical conditions of operation. Under standard test conditions of 5 or more burning hours per start, average life will exceed this figure by 50% or more.
④ Opaque coating on reflecting section of bulb.
⑤ When H4AB lamps are operated on direct current a polarity reversing switch should be installed to avoid the possibility of electrolysis in the lamps.
⑥ Designed for service other than illumination.
⑦ Also available in T-16 bulb — A.S.A. Code H25HC.
⑧ Horizontal burning approved with or without magnet; so operated, published life ratings apply but watts and lumens are reduced.
⑨ May not give satisfactory performance if any accessory equipment is attached to, or touches the glass bulb, should be shielded against moisture falling on the bulb.
⑩ Burning position within 10° of vertical base up.
⑪ Horizontal burning approved with magnet holding arc approximately centered; so operated, published life ratings apply but watts and lumens are reduced.
⑫ Burning position must be within 10° of vertical base down.
⑬ The 1000-watt H-15 lamps will operate satisfactorily on 700-watt ballasts in street and industrial applications.

Approx. Mean Lumens: (A) 2900, (B) 2750, (C) 3040, (D) 6000, (E) 6400, (F) 9900, (G) 9350, (H) 13,600, (I) 16,400, (J) 17,200, (K) 16,000, (L) 15,300, (M) 18,000, (N) 17,000, (O) 18,600, (P) 17,800, (Q) 19,300, (R) 16,400, (S) 17,800, (T) 18,900, (U) 27,400, (V) 25,800, (W) 40,500, (X) 36,000, (Y) 38,000, (Z) 108,000.

G·E FLUORESCENT LAMPS



The fluorescent lamp is one form of "electric discharge" source. It differs radically from the filament lamp, in which electricity flows through a tungsten wire and thus heats it to incandescence. In a fluorescent lamp, the two electrodes between which the current flows are separated from each other at opposite ends of a glass tube. In the operating lamp, current is conducted by the gas (vaporized mercury) inside the lamp. Light is given off by the phosphors, which are "excited" by the energy produced in the process.

TYPES OF FLUORESCENT LAMPS AND STARTING SYSTEMS

Fluorescent lamps can be divided into two general types:

(a) Lamps using starters and sometimes called Preheat or Switch-Start lamps, and

(b) Lamps not using starters.

In lamps using starters, the cathodes of the fluorescent lamp are "pre-heated" by means of a small switching device — a manual type for such fixtures as desk lamps and portable lamps, or an automatic type for fixtures controlled from a wall switch. These switches, or starters, as they are called, are available in a number of sizes, depending on the lamp or lamps used. Relatively inexpensive ballasts can be used with starter-type lamps.

In lamps not using starters, the ballasts are the only auxiliary equipment used to provide the necessary voltage and current to the lamps. These lamps can be divided into the following types:

Slimline lamps,
Instant Start (IS) lamps,
Rapid Start lamps,
Preheat-Rapid Start lamps,
High Output lamps,
Power Groove lamps,
Circline lamps.

With Slimline lamps, high-voltage ballasts are used so that the lamps can be started instantaneously by "brute force." The cathodes are specially designed to withstand this initial high voltage.

Though often applied to the Slimline lamp, the phrase "Instant Start" generally refers to the bipin-based lamps that requires no starter. This is the 40-watt lamp in the T-12 and T-17 bulb size. The cathode leads inside these lamps are short-circuited; so preheat circuits cannot be used to operate the lamp. Like Slimline lamps, Instant Start lamps require ballasts that provide a relatively high starting voltage.

Rapid Start lamps have their cathodes continuously heated by the ballast circuit during starting and operation. As a result the rapid start circuit provides essentially instant starting with less ballast voltage.

Preheat-Rapid Start lamps can be used either with or without starters, that is, on either preheat or rapid start circuits. They replace the former 40-watt Preheat lamp and the 40-watt Rapid Start lamps. The 40-watt Premium 3 is a new, more efficient Preheat-Rapid Start lamp.

High Output lamps operate on the rapid start principle, but at relatively high currents. The recessed double-contact base was developed for this lamp.

Power Groove lamps, which also operate on the Rapid Start principle, are the most powerful fluorescent lamps made. These lamps have the characteristic grooves on both sides of the lamp. The grooves force the arc stream inside the lamp to travel in a wavy path. In the eight-foot lamp, the result is the equivalent of an arc from a nine-foot straight lamp. Other features of this unique design combine to make this lamp the popular choice where high footcandle levels and low cost of light are wanted. This lamp also has the recessed double-contact base. In addition to the eight-foot size, it is available in the 48- and 72-inch sizes.

Circline lamps have 4-pin bases and use the Rapid Start principle of operation.

TRIGGER START

The 14-, 15- and 20-watt Preheat fluorescent lamps may be operated on what is called the Trigger Start circuit. This method of operation requires no starters because Trigger Start ballasts supply the necessary preheat current and starting voltage. These lamps have a Dry-Film coating to assure starting under high humidity conditions.

FLUORESCENT LAMP OPERATING SYSTEMS

CATHODES

Two cathodes, one at each end of the fluorescent lamp, are the source of current-carrying electrons. They are manufactured under the same kind of rigid specifications that apply to filaments for incandescent lamps. For fluorescent lamps, however, there are two general types of cathodes — the triple-coil cathode and the coiled-coil cathode.

Triple-coil Cathodes

The triple-coil cathode is used in the starterless types of lamps — the Slimline lamp, the Instant Start lamp, and lamps using the Rapid Start principle, including the Power Groove and the High Output lamps. This type of cathode, developed by General Electric, holds much more emission material than the coiled-coil type.

Coiled-coil Cathodes

Coiled-coil cathodes are used with Preheat type lamps, which require starters (except when used in Trigger Start circuits).

Triple-Coil

Coiled-Coil

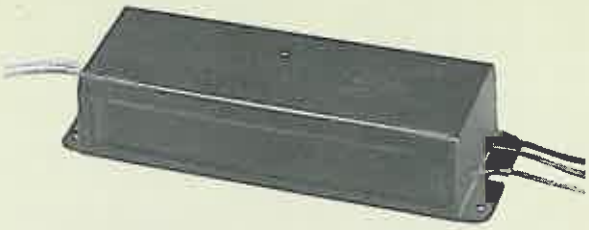
LAMP LIFE AND LUMEN OUTPUT

All life ratings of fluorescent lamps are based on the assumption that the lamps are lighted for intervals of three hours — that is, three hours per start. Longer periods of burning increase average life.

Like most lamps, fluorescent lamps gradually decrease in light output during life. The amount of decrease depends on time, the frequency of starting, and, of course, the type of lamp. The lumen output at 40% of average rated life serves as an approximate average of lumen output throughout life. This value is important in calculating cost of light for planned lighting installations.

The initial lumen output and efficiency values are established at the end of 100 hours of lamp operation, where measured at 77°F ambient temperature and under specified test conditions.

BALLASTS



A fluorescent lamp would draw so much current that it would quickly be destroyed, if it were simply connected to the conventional power supply. For this reason, a current-limiting device must be connected between the lamp and the power supply. This device is known as a "ballast." For longer length lamps, the ballast also provides the increased voltage needed for starting.

Life and output ratings of fluorescent lamps are based on their use with ballasts that provide the proper voltages and currents. Ballasts that do not provide proper electrical values may substantially reduce either lamp life or light output, or both.

Ballasts certified as having been manufactured according to the specifications adopted by the Certified Ballast Manufacturers (CBM) do provide values that meet or exceed minimum requirements. With this certification, the user can be assured, without individual testing, that the lamps will operate at values close to their ratings.

STARTERS

The function of the preheat lamp starter is to complete, and then open, a circuit through the cathodes of the lamp. When the starter switch is closed, current flows through the cathodes, heating them and causing them to emit electrons. This electron emission makes it possible for the arc inside the lamp to strike at a much lower voltage than that needed with unheated cathodes. When the starter switch is opened, the resulting inductive "kick" from the ballast starts the lamp.

Starters are available in either standard or in "no-blink" types. The latter are available in either the manual reset (Watch Dog) type or in automatic reset designs. The Watch Dog design is recommended for most installations because it eliminates flashing or blinking at the end of lamp life.

G·E FLUORESCENT LAMP COLORS

G-E Fluorescent Lamps are available in a range of strong colors and in several different "whites." The saturated colors — red, pink, gold, green, blue, and deep blue — are used for decorative effects while the whites serve for both decorative and general lighting purposes. All fluorescent lamps except gold, red and deep blue are white when unlighted. Different phosphors produce different colors when lamps are lighted.

White fluorescent lamps are designed to combine three elements important in lighting effects — (1) efficiency — most light per dollar; (2) color-rendering properties — the ability to bring out the natural color of objects and (3) "whiteness" — their appearance in relation to familiar white light sources, such as natural daylight or filament lamps.

The choice among fluorescent "whites" always involves compromise among these three elements. Obtaining best color rendering properties necessitates reduction in efficiency. Choice of whiteness affects both efficiency and color rendering properties. The descriptions and table below outline the effects obtained from the most popular whites.

Cool White combines high efficiency with reasonably good color rendition. It is the most widely used fluorescent lamp color in factories, offices and schools. It blends well with natural daylight.

Warm White provides the highest efficiency in white fluorescent lamps. It emphasizes orange, yellow and yellow-green, and is generally used where highest efficiency is more important than color rendition.

De Luxe Cool White most closely simulates the appearance and color-rendering properties of natural daylight. It is widely used in stores, factories and offices where excellent color rendition simulating natural daylight is needed.

Home-line (formerly De Luxe Warm White) simulates the warm, friendly effects of filament lighting in both "whiteness" and color rendering. Usually first choice where "homelike" lighting effects are wanted.

Daylight, Soft White, and White are still available for replacement purposes in existing installations and for new installations where their appearance or color-rendering properties are particularly suitable.

Cool Green lamps are sometimes used in work areas where users consider the blue-green tint of light desirable.

Vegetable Green lamps have a yellowish-green tint; they are sometimes used in produce departments of food stores.

COLOR EFFECTS OF WHITE FLUORESCENT LAMPS

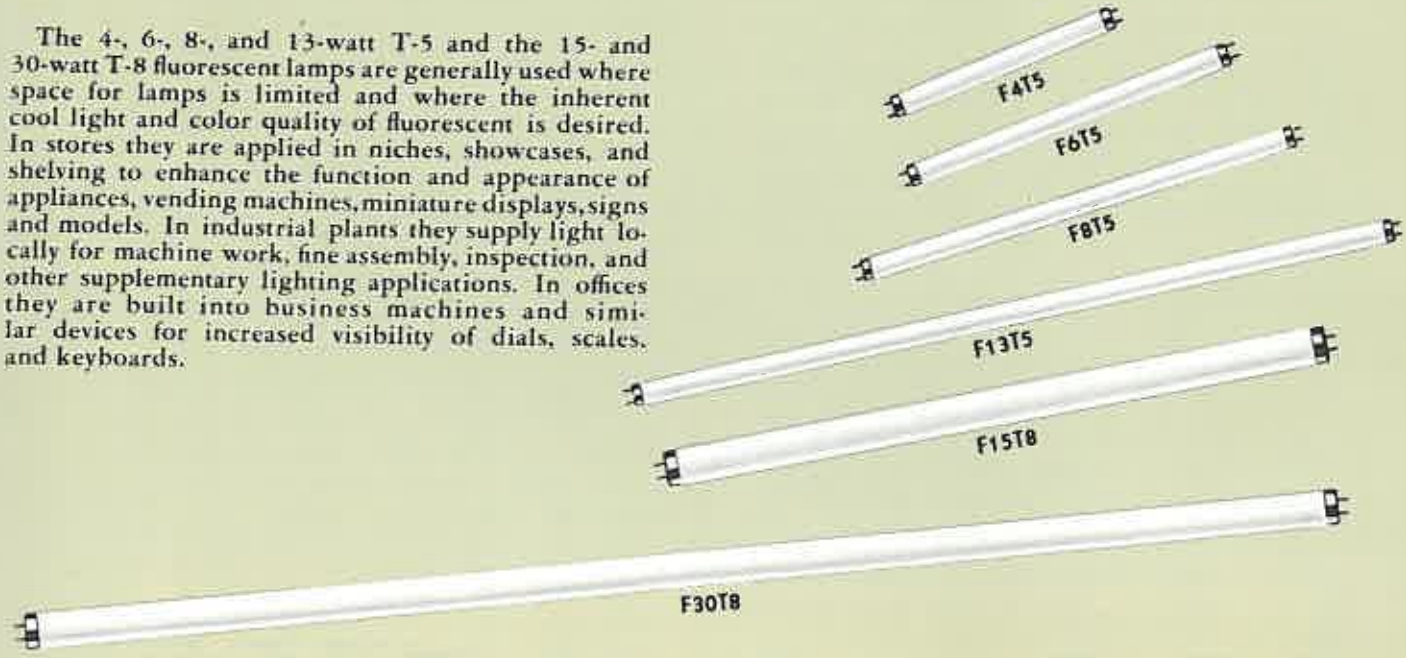
	Cool White	Deluxe Cool White	Warm White	Home-line	Daylight	White	Soft White
Lamp appearance, effect on neutral surfaces	White	White	Yellowish white	Yellowish white	Bluish white	Pale yellowish white	Pinkish white
Effect on "atmosphere"	Neutral to moderately cool	Neutral to moderately cool	Warm	Warm	Very cool	Moderately warm	Warm pinkish
Colors strengthened	Orange, yellow, blue	All nearly equal	Orange, yellow	Red, orange, yellow, green	Green, blue	Orange, yellow	Red, orange
Colors grayed	Red	None appreciably	Red, green, blue	Blue	Red, orange	Red, green, blue	Green, blue
Remarks	Blends with natural daylight	Best over-all color rendition, simulates natural daylight	Blends with incandescent light	Excellent color rendition, simulates incandescent light	Usually replaceable with CW	Usually replaceable with CW or WW	Usually replaceable with CWX or WWX

APPROXIMATE COLORS OF LIGHTED FLUORESCENT LAMPS

G-E FLUORESCENT LAMPS
(For use with starters)

All G-E Fluorescent lamps should be used only with auxiliary equipment designed to produce proper electrical values. Unless otherwise noted, ratings apply to operation in A. C. circuits. Lamps may be burned in any position.

The 4-, 6-, 8-, and 13-watt T-5 and the 15- and 30-watt T-8 fluorescent lamps are generally used where space for lamps is limited and where the inherent cool light and color quality of fluorescent is desired. In stores they are applied in niches, showcases, and shelving to enhance the function and appearance of appliances, vending machines, miniature displays, signs and models. In industrial plants they supply light locally for machine work, fine assembly, inspection, and other supplementary lighting applications. In offices they are built into business machines and similar devices for increased visibility of dials, scales, and keyboards.



FLUORESCENT LAMPS (FOR USE WITH STARTERS)

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Description	Standard Package Quantity	Approx. Hours Life ①	Approx. Initial Lumens ②	Approx. Lumens at 40% Rtd. Ave Life
F4T5/CW	4	T-5	6	Min. Bip.	Cool White	24	4000	108	60
F6T5/CW	6	T-5	9	Min. Bip.	Cool White	24	6000	210	150
F6T5/W	6	T-5	9	Min. Bip.	White	24	6000	220	155
F8T5/CW	8	T-5	12	Min. Bip.	Cool White	24	6000	330	240
F8T5/W	8	T-5	12	Min. Bip.	White	24	6000	340	250
F13T5/CW	13	T-5	21	Min. Bip.	Cool White	24	6000	700	545
F15T8/CW	15	T-8	18	Med. Bip.	Cool White	24	7500	750	620
F15T8/CWX	15	T-8	18	Med. Bip.	De Luxe Cool White	24	7500	530	395
F15T8/WWX	15	T-8	18	Med. Bip.	Home-line	24	7500	530	395
F15T8/D	15	T-8	18	Med. Bip.	Daylight	24	7500	680	565
F15T8/W	15	T-8	18	Med. Bip.	White	24	7500	785	650
F15T8/WW	15	T-8	18	Med. Bip.	Warm White	24	7500	785	650
F15T8/SW	15	T-8	18	Med. Bip.	Soft White	24	7500	.....	.....
F15T8/B	15	T-8	18	Med. Bip.	Blue	24	7500	.....	.....
F15T8/G	15	T-8	18	Med. Bip.	Green	24	7500	.....	.....
F15T8/GO	15	T-8	18	Med. Bip.	Gold	24	7500	.....	.....
F15T8/PK	15	T-8	18	Med. Bip.	Pink	24	7500	.....	.....
F15T8/R	15	T-8	18	Med. Bip.	Red	24	7500	.....	.....
F30T8/CW	30	T-8	36	Med. Bip.	Cool White	24	7500	1900	1600
F30T8/CWX	30	T-8	36	Med. Bip.	De Luxe Cool White	24	7500	1350	1000
F30T8/WWX	30	T-8	36	Med. Bip.	Home-line	24	7500	1350	1000
F30T8/D	30	T-8	36	Med. Bip.	Daylight	24	7500	1740	1640
F30T8/W	30	T-8	36	Med. Bip.	White	24	7500	1950	1640
F30T8/WW	30	T-8	36	Med. Bip.	Warm White	24	7500	1950	1640
F30T8/SW	30	T-8	36	Med. Bip.	Soft White	24	7500	.....	.....
F30T8/B	30	T-8	36	Med. Bip.	Blue	24	7500	.....	.....
F30T8/G	30	T-8	36	Med. Bip.	Green	24	7500	.....	.....
F30T8/GO	30	T-8	36	Med. Bip.	Gold	24	7500	.....	.....
F30T8/PK	30	T-8	36	Med. Bip.	Pink	24	7500	.....	.....
F30T8/R	30	T-8	36	Med. Bip.	Red	24	7500	.....	.....

① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours.

② Approximate initial lumens after 100 hours operation.

G-E FLUORESCENT LAMPS
(For use with starters)

The 14, 15, and 20-watt T-12 lamps are widely used in home fixtures for lighting in kitchens, bathrooms, basements, and recreation rooms, in window valances and under shelving and cupboards for decorative and appliance lighting. They are also used to light closets, washrooms, and small areas and for supplementary lighting in offices and factories.

These lamps may be operated without starters on Trigger Start Ballasts in applications where quick starting is desired.

The 15-watt T-12 lamp is preferred over the 15-watt T-8 if used without shielding for bathroom mirror lighting and other applications. Its many uses parallel those of the 15-watt T-8.

The 14-watt T-12 lamp is also used in portable lamps using a low-wattage filament lamp for a ballast.

The 25-watt T-12 lamp is used principally in homes, either in general lighting fixtures or built into window valances and kitchen work spaces.

The 90-watt T-17 lamps produce more light per foot than any other preheat lamps. The 90-watt lamp is used mostly in industry for general lighting.

FLUORESCENT LAMPS (FOR USE WITH STARTERS)

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Description	Standard Package Quantity	Approx. Hours Life ①	Approx. Initial Lumens ②	Approx. Lumens At 40% Rtd. Ave. Life
F14T12/CW	14	T-12	15	Med. Bip.	Cool White	24	6000	575	460
F14T12/CWX	14	T-12	15	Med. Bip.	De Luxe Cool White	24	6000	425	305
F14T12/WWX	14	T-12	15	Med. Bip.	Home-line	24	6000	425	305
F14T12/D	14	T-12	15	Med. Bip.	Daylight	24	6000	520	415
F14T12/W	14	T-12	15	Med. Bip.	White	24	6000	590	470
F14T12/WW	14	T-12	15	Med. Bip.	Warm White	24	6000	590	470
F14T12/W/1	14	T-12	15	Med. Bip.	White③	24	6000	590	470
F15T12/CW	15	T-12	18	Med. Bip.	Cool White	24	7500	680	580
F15T12/CWX	15	T-12	18	Med. Bip.	De Luxe Cool White	24	7500	505	385
F15T12/WWX	15	T-12	18	Med. Bip.	Home-line	24	7500	505	385
F15T12/D	15	T-12	18	Med. Bip.	Daylight	24	7500	610	520
F15T12/W	15	T-12	18	Med. Bip.	White	24	7500	700	595
F15T12/WW	15	T-12	18	Med. Bip.	Warm White	24	7500	700	595
F20T12/CW	20	T-12	24	Med. Bip.	Cool White	24	7500	1030	875
F20T12/CWX	20	T-12	24	Med. Bip.	De Luxe Cool White	24	7500	740	605
F20T12/WWX	20	T-12	24	Med. Bip.	Home-line	24	7500	740	605
F20T12/D	20	T-12	24	Med. Bip.	Daylight	24	7500	920	780
F20T12/W	20	T-12	24	Med. Bip.	White	24	7500	1060	900
F20T12/WW	20	T-12	24	Med. Bip.	Warm White	24	7500	1060	900
F20T12/SW	20	T-12	24	Med. Bip.	Soft White	24	7500	....	.....
F20T12/B	20	T-12	24	Med. Bip.	Blue	24	7500	....	.....
F20T12/G	20	T-12	24	Med. Bip.	Green	24	7500	....	.....
F20T12/GO	20	T-12	24	Med. Bip.	Gold	24	7500	....	.....
F20T12/PK	20	T-12	24	Med. Bip.	Pink	24	7500	....	.....
F20T12/R	20	T-12	24	Med. Bip.	Red	24	7500	....	.....
F20T12/CW/1	20	T-12	24	Med. Bip.	Cool White③	24	7500	950	850
F20T12/D/1	20	T-12	24	Med. Bip.	Daylight③	24	....	....	.....
F25T12/CW/33	25	T-12	33	Med. Bip.	Cool White	24	7500	1600	1380
F25T12/WWX/33	25	T-12	33	Med. Bip.	Home-line	24	7500	1180	970
F25T12/D/33	25	T-12	33	Med. Bip.	Daylight	24	7500	1420	1210
F90T17/CW	90	T-17	60	Mog. Bip.	Cool White	12	7500	5200	4350
F90T17/D	90	T-17	60	Mog. Bip.	Daylight	12	7500	4800	4000
F90T17/W	90	T-17	60	Mog. Bip.	White	12	7500	5350	4500

① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours.

② Approximate initial lumens after 100 hours operation.

③ D. C. Operation.

G·E PRE-HEAT RAPID START FLUORESCENT LAMPS

F40 F40/3

PREHEAT-RAPID START LAMPS

The 40-watt Preheat-Rapid Start lamp takes the place of the Preheat F40T12 and the F40T12/RS. At the same time, because of refinements in lamp design, light output (in Cool White) has been increased from 2650 to 2800 lumens. Though basically of Rapid Start design, this dual service lamp will deliver rated life and initial light output on existing preheat circuits. The mean lumen output on preheat circuits is 1% – 2% lower than the values shown below for Rapid Start operation.

Premium 3 lamps (F40CW/3 and F40W/3) are far superior to any other 40-watt fluorescent lamp in lumen output, cost of light, and adaptability. They deliver around 10% more light than even the highly efficient F-40 Preheat Rapid Start lamps.

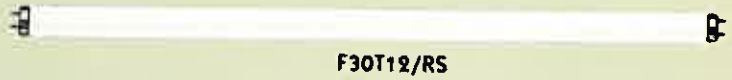
Both of these lamps can be used for general lighting in every type of installation. It is interesting to note that the 40-watt lamp size is the most popular of all fluorescent lamp sizes.

PREHEAT RAPID START FLUORESCENT LAMPS (NO STARTERS USED)

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Description	Std. Package Qty.	Approximate Hours Life ①	Approximate Initial Lumens ②	Approximate Lumens at 40% Rtd. Avg. Life
F40CW	40	T-12	48	Med. Bipin	Cool White	24	7500	2800	2520
F40CWX	40	T-12	48	Med. Bipin	De Luxe Cool White	24	7500	2050	1780
F40WWX	40	T-12	48	Med. Bipin	De Luxe Warm White	24	7500	2050	1780
F40D	40	T-12	48	Med. Bipin	Daylight	24	7500	2350	2100
F40W	40	T-12	48	Med. Bipin	White	24	7500	2900	2600
F40WW	40	T-12	48	Med. Bipin	Warm White	24	7500	2900	2600
F40SW	40	T-12	48	Med. Bipin	Soft White	24	7500	1900	1550
F40B	40	T-12	48	Med. Bipin	Blue	24	7500	1160	.....
F40G	40	T-12	48	Med. Bipin	Green	24	7500	3600	.....
F40GO	40	T-12	48	Med. Bipin	Gold	24	7500	2060	.....
F40PK	40	T-12	48	Med. Bipin	Pink	24	7500	1160	.....
F40R	40	T-12	48	Med. Bipin	Red	24	7500	155	.....
F40CG	40	T-12	48	Med. Bipin	Cool Green	24	7500	2550	.....
F40VG	40	T-12	48	Med. Bipin	Vegetable Green	24	7500	2500	.....
F40DB	40	T-12	48	Med. Bipin	Deep Blue	24	7500	.....	.....
F40CW/3	40	T-12	48	Med. Bipin	Cool White	24	7500*	3100	2720
F40W/3	40	T-12	48	Med. Bipin	White	24	7500*	3250	.....

* On Rapid Start Circuits.
① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours.
② Approximate initial lumens after 100 hours operation.

RAPID START LAMPS



F30T12/RS

The 30-watt Rapid Start lamps are used alone for many lighting purposes, or together with lamps of longer sizes to fill in short spaces — for example, in valance lighting, in modules, over windows, in kitchen cabinets, and in architectural elements.

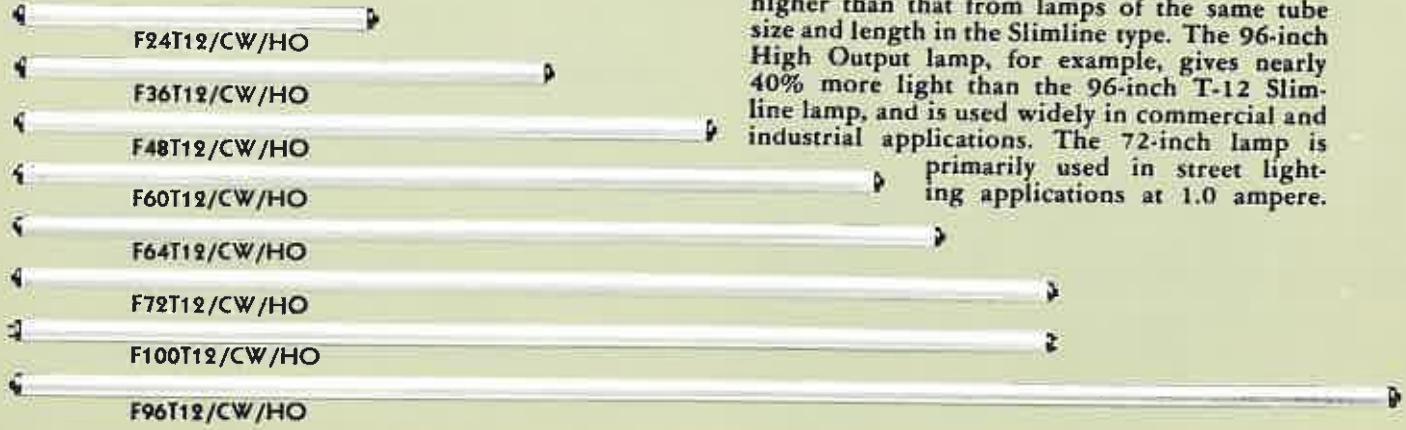
RAPID START LAMPS

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Description	Std. Package Qty.	Approximate Hours Life ①	Approximate Initial Lumens ②	Approximate Lumens at 40% Rtd. Avg. Life (Cool White)
F30T12/CW/RS	30	T-12	36	Med. Bipin	Cool White	24	7500	1850	1630
F30T12/CWX/RS	30	T-12	36	Med. Bipin	De Luxe Cool White	24	7500	1420	.....
F30T12/WW/RS	30	T-12	36	Med. Bipin	Warm White	24	7500	1900	.....
F30T12/WWX/RS	30	T-12	36	Med. Bipin	Home-Line	24	7500	1420	.....
F30T12/W/RS	30	T-12	36	Med. Bipin	White	24	7500	1900	.....

① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours.
② Approximate initial lumens after 100 hours operation.

G·E HIGH OUTPUT FLUORESCENT LAMPS

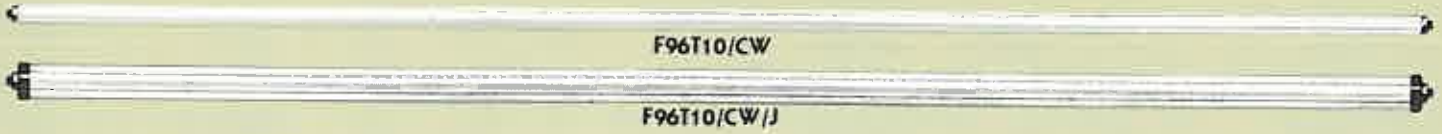
High Output lamps were developed to meet the increasing need for more light, both in indoor and outdoor applications, without changing conventional diameters and cross-sections.



These lamps operate on the Rapid Start principle, usually at 800 ma., and have recessed double-contact bases.

Light output from the High Output lamps is higher than that from lamps of the same tube size and length in the Slimline type. The 96-inch High Output lamp, for example, gives nearly 40% more light than the 96-inch T-12 Slimline lamp, and is used widely in commercial and industrial applications. The 72-inch lamp is primarily used in street lighting applications at 1.0 ampere.

G·E OUT DOOR FLUORESCENT LAMPS



General Electric outdoor fluorescent lamps are the first to be designed specifically for use over a wide range of temperature conditions in all kinds of outdoor lighting applications. These include lighting for poster panels and bulletins, electric signs, building floodlighting, service stations, drive-in restaurants, shopping centers, store fronts, street lighting, parking lots, loading docks, shipyards and airports.

The T-10 lamp is primarily for use in enclosed single-lamp housings. The T-10J lamp is basically a T-10 lamp with a rubber-sealed glass jacket (1¾" diameter) enclosing the lighted length of the lamp. The purpose of the jacket is to help control the cooling effect of air currents. This lamp is practical for use in open lighting units.

HIGH OUTPUT FLUORESCENT LAMPS (NO STARTERS USED)

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Description	Standard Package Quantity	Approx. Hours Life ①	Approx. Initial Lumens ②	Approx. Lumens at 40 % Rtd. Avg. Life
F24T12/CW/HO	30	T-12	24	Double Cont. Recessed	Cool White	24	7500	1450(A)	1230
F36T12/CW/HO	45	T-12	36		Cool White	24	7500	2450	2080
F48T12/CW/HO	60	T-12	48		Cool White	24	7500	3600(B)	2980
F48T12/WW/HO	60	T-12	48		Warm White	24	7500	2980	3060
F60T12/CW/HO	70	T-12	60		Cool White	24	7500	4500	3820
F64T12/CW/HO	75	T-12	64		Cool White	24	7500	4850	4100
F72T12/CW/HO	85	T-12	72		Cool White	12	7500	5550(C)	4700
F72T12/WW/HO	85	T-12	72		Warm White	12	7500	5700	4850
F100T12/CW/HO	100	T-12	72	Mog. Bipin	Cool White④	12	7500	6050	4850
F96T12/CW/HO	105	T-12	96	Recessed Double Cont.	Cool White	12	7500	7600	6450
F96T12/WW/HO	105	T-12	96		Warm White	12	7500	7800	6650
F96T12/CWX/HO	105	T-12	96		De Luxe Cool White	12	7500	5700	4550
F96T12/WWX/HO	105	T-12	96		Home-line	12	7500	5700	4550

Approx. Lumens at 1.0 Amps. (A) 1650 Initial, 1320 Mean, (B) 3850 Initial, 3080 Mean, (C) 6050 Initial, 4850 Mean

OUTDOOR FLUORESCENT LAMPS (NO STARTERS USED)

F96T10/CW	200③	T-10	96	Recessed D. C.	Cool White	12	7500	13000(B)	.....
F96T10J/CW	200③	T-14	96		Cool White	8	7500	12900(B)	.....

① Life under specified test conditions with lamps turned off and restarted no oftener than once every three burning hours. Economic life for Outdoor lamps is 5000 lumens.

② Approximate initial lumens after 100 hours operation. ③ Peak value

④ Replacement lamp for existing fluorescent street lighting and outdoor installations. For new installation the F72T12/CW/HO lamp is recommended.

G·E POWER GROOVE FLUORESCENT LAMPS

F48PG17

F72PG17

F96PG17

GENERAL ELECTRIC IMPROVED POWER GROOVE LAMPS

Shortly after its introduction, the revolutionary Power Groove lamp, with its characteristic grooves along one side, became a popular choice in industrial and commercial applications as an efficient, high-intensity source of light. Recently General Electric extended the Power Groove principle by developing a lamp having grooves on both sides. The result is a still more powerful, more efficient lamp.

Light output is increased to 15,000 lumens — 70 lumens per watt. Lamp efficiency is up 8%, wattage 7%, with no reduction in lumen maintenance. Weight of the new lamp is 25% less than for the same length in the older design. This makes it easier to handle; yet it is structurally as strong as ever.

In this improved lamp, the bulb shape forces the arc stream to travel in a wavy path. The result is the equivalent of an arc from a nine-foot straight lamp in an eight-foot tube.

For control of mercury vapor pressure, the improved lamp has one specially constructed groove on each side of the tube. By providing cooling pockets, these two grooves regulate pressure, regardless of their orientation.

Among other features that are continued in the improved lamp is a minimum of end-blackening. To reduce end-blackening, the cathode is shielded by two small nickel plates. These plates collect particles that would otherwise land on the glass wall. The net result is that these lamps stay bright over their full length — for their full life.

The cathode, too, is specially designed to give long service with a minimum of early burnouts. Economic lamp life continues to be 5,000 hours, with actual life being the same as that of other popular General Electric fluorescent lamps — 7,500 hours at three hours per start.

The new improved Power Groove lamp will provide more economical lighting than possible before in many applications for general lighting in stores, offices and industrial areas. Much higher lighting levels can be reached with the same number of fixtures, and at considerably lower initial cost per footcandle. Many high-bay areas, now using filament or mercury, can gain the advantages of fluorescent at favorable maintenance costs. With the improved Power Groove lamps, present lighting levels can be greatly increased in coves and other architectural elements where the maximum light is needed — but where only a limited number of lamps can be used.

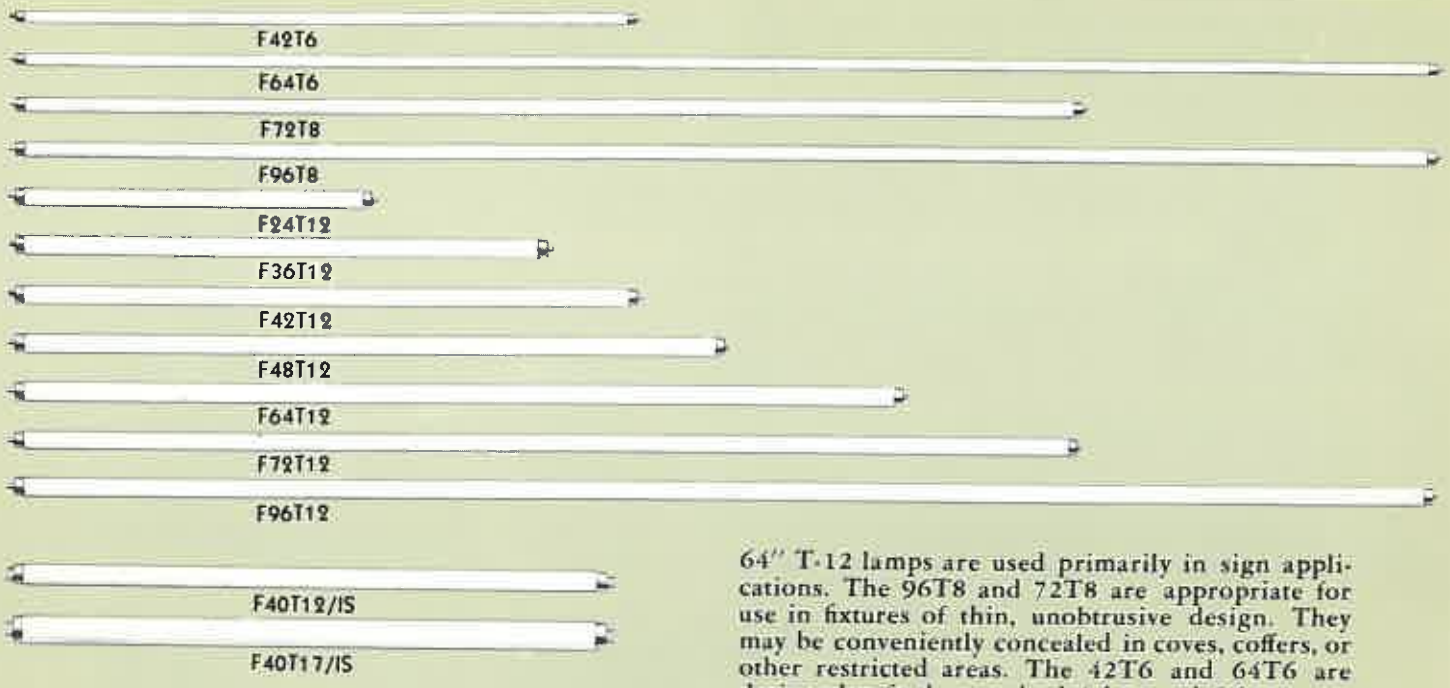
The new lamp will start reliably and operate on all existing Power Groove ballasts; hence it may be used in all existing Power Groove fixtures. When so used, the grooves will be oriented in the same position as before — up and down, for the most part. Highest bare lamp light output is obtained with the grooves oriented sideways. However, highest fixture light output may not always be obtained with the lamp in this position. Fixture manufacturers should determine which lamp orientation provides best overall results with each fixture design.

POWER GROOVE FLUORESCENT LAMPS (NO STARTERS USED)

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Description	Std. Package Qty.	Approx. Hours Life ①	Approx. Initial Lumens ②	Approx. Lumens at 40% Economic Life
F48PG17/CW	110	PG-17	48	Recessed D. C.	Cool White	12	7500	6900	5500
F72PG17/CW	160	PG-17	72	Recessed D. C.	Cool White	8	7500	10900	8700
F96PG17/CW	215	PG-17	96	Recessed D. C.	Cool White	8	7500	15000	12000

① Life under specified test conditions and restarted no oftener than every three burning hours. Economic life is 5000 hours.
② Approximate initial lumens after 100 hours operation.

G·E SLIMLINE AND INSTANT START FLUORESCENT LAMPS



Slimline lamps are a family of lamps that are instant-starting and have rugged, single-pin bases. The simplicity of wiring required, variety of sizes available, and the high efficiency of these lamps combine to make them popular in many lighting applications. The range of lengths and diameters fits many general and supplementary lighting needs. The 96T12 is the most popular Slimline lamp for general lighting service. The 72T12 and 48T12 are 6- and 4-foot companions, respectively, of the 96T12, which permit finishing out the ends of continuous rows where the 8-foot lamp is used. These lamps are also used for general lighting where shorter fixture lengths are desired for scale or to fit an architectural module. The 24", 36", 42", and 64" T-12 lamps are used primarily in sign applications. The 96T8 and 72T8 are appropriate for use in fixtures of thin, unobtrusive design. They may be conveniently concealed in coves, coffers, or other restricted areas. The 42T6 and 64T6 are designed to fit the standard 4-foot and 6-foot store showcases. Their ¾-inch diameter means minimum visual obstruction for all types of displays. The small diameter also permits accurate control with polished, concentrating reflectors for wallcase, show window, cove, wall or mural lighting and many other specialized applications.

INSTANT START LAMPS

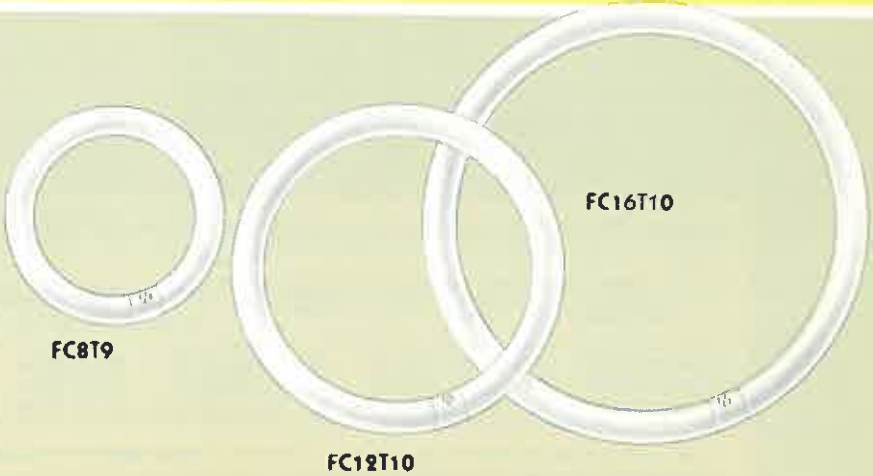
The 40-watt Instant Start lamps operate on 48 inch T-12 Slimline ballasts.

The T-17 lamp has a compartively low surface brightness. It is used for high-quality lighting installations in schools and offices and for special industry applications where it is important to minimize direct and reflected glare.

G·E CIRCLINE FLUORESCENT LAMPS

CIRCLINE LAMPS

Circline fluorescent lamps are Rapid Start type. Available in three diameters, they are widely used in home lighting fixtures and for decorative lighting in restaurants, theatres, lobbies, lounges, and other commercial areas. They are also adapted to some inspection processes in industry.



SLIMLINE FLUORESCENT LAMPS (INSTANT START) T-6 Approx. ¾" Diameter

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Description	Standard Package Quantity	Approx. Hours Life ①	Approx. Initial Lumens ②③	Approx. Lumens at 40% Rtd. Ave. Life
F42T6/CW	17.5–32.5	T-6	42	Single Pin	Cool White	24	7500	1600	1330
F42T6/CWX	17.5–32.5	T-6	42	Single Pin	De Luxe Cool White	24	7500	1230	....
F42T6/WWX	17.5–32.5	T-6	42	Single Pin	Home-line	24	7500	1230	....
F42T6/W	17.5–32.5	T-6	42	Single Pin	White	24	7500	1650	1370
F42T6/WW	17.5–32.5	T-6	42	Single Pin	Warm White	24	7500	1650	1370
F42T6/SW	17.5–32.5	T-6	42	Single Pin	Soft White	24	7500	1180	....
F64T6/CW	25.5–48	T-6	64	Single Pin	Cool White	24	7500	2540	2140
F64T6/CWX	25.5–48	T-6	64	Single Pin	De Luxe Cool White	24	7500	1950	....
F64T6/WWX	25.5–48	T-6	64	Single Pin	Home-line	24	7500	1950	....
F64T6/W	25.5–48	T-6	64	Single Pin	White	24	7500	2620	2200
F64T6/WW	25.5–48	T-6	64	Single Pin	Warm White	24	7500	2620	2200
F64T6/SW	25.5–48	T-6	64	Single Pin	Soft White	24	7500	1880	....
T-8 Approx. 1" Diameter									
F72T8/CW	24.5–48.5	T-8	72	Single Pin	Cool White	24	7500	2550	2250
F72T8/CWX	24.5–48.5	T-8	72	Single Pin	De Luxe Cool White	24	7500	1910	....
F72T8/WWX	24.5–48.5	T-8	72	Single Pin	Home-line	24	7500	1910	....
F72T8/W	24.5–48.5	T-8	72	Single Pin	White	24	7500	2620	2300
F72T8/WW	24.5–48.5	T-8	72	Single Pin	Warm White	24	7500	2620	2300
F96T8/CW	32–65	T-8	96	Single Pin	Cool White	24	7500	3550	3150
F96T8/CWX	32–65	T-8	96	Single Pin	De Luxe Cool White	24	7500	2740	2320
F96T8/WWX	32–65	T-8	96	Single Pin	Home-line	24	7500	2740	2320
F96T8/W	32–65	T-8	96	Single Pin	White	24	7500	3650	3200
F96T8/WW	32–65	T-8	96	Single Pin	Warm White	24	7500	3650	3200
F96T8/D	32–65	T-8	96	Single Pin	Daylight	24	7500	3250	2900
T-12 Approx. 1½" Diameter									
F24T12/CW	22	T-12	24	Single Pin	Cool White	24	7500	1000	860
F36T12/CW	30	T-12	36	Single Pin	Cool White	24	7500	1700	1480
F42T12/CW	35	T-12	42	Single Pin	Cool White	24	7500	2050	1780
F48T12/CW	38	T-12	48	Single Pin	Cool White	24	7500	2600	2280
F48T12/CWX	38	T-12	48	Single Pin	De Luxe Cool White	24	7500	1850	1570
F48T12/WWX	38	T-12	48	Single Pin	Home-line	24	7500	1850	1570
F48T12/W	38	T-12	48	Single Pin	White	24	7500	2700	2380
F48T12/WW	38	T-12	48	Single Pin	Warm White	24	7500	2700	2380
F48T12/D	38	T-12	48	Single Pin	Daylight	24	7500	2150	1890
F64T12/CW	50	T-12	64	Single Pin	Cool White	24	7500	3350	2940
F72T12/CW	55	T-12	72	Single Pin	Cool White	12	7500	4100	3640
F72T12/CWX	55	T-12	72	Single Pin	De Luxe Cool White	12	7500	2920	2500
F72T12/WWX	55	T-12	72	Single Pin	Home-line	12	7500	2920	2500
F72T12/W	55	T-12	72	Single Pin	White	12	7500	4200	3740
F72T12/WW	55	T-12	72	Single Pin	Warm White	12	7500	4200	3740
F96T12/CW	74	T-12	96	Single Pin	Cool White	12	7500	5600	5050
F96T12/CWX	74	T-12	96	Single Pin	De Luxe Cool White	12	7500	4000	3480
F96T12/WWX	74	T-12	96	Single Pin	Home-line	12	7500	4000	3480
F96T12/W	74	T-12	96	Single Pin	White	12	7500	5700	5150
F96T12/WW	74	T-12	96	Single Pin	Warm White	12	7500	5700	5150
F96T12/SW	74	T-12	96	Single Pin	Soft White	12	7500	3800	3120
F96T12/D	74	T-12	96	Single Pin	Daylight	12	7500	4650	4200

INSTANT START FLUORESCENT LAMPS (NO STARTERS USED)④

F40T12/CW/IS	40	T-12	48	Med. Bip.	Cool White	24	7500	2650	2350
F40T17/CW/IS	40	T-17	60	Mog. Bip.	Cool White	12	7500	2650	2400

FLUORESCENT CIRCLINE LAMPS (RAPID START*)

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Description	Standard Package Quantity	Approx. Hours Life ①	Approx. Initial Lumens ②	Approx. Lumens at 40% Rtd. Ave. Life
FC8T9/CW	22	T-9	Outside	4-Pin	Cool White	12	7500	930	710
FC8T9/WWX	22	T-9	Dia. 8¼"	4-Pin	Home-line	12	7500	715	515
FC12T10/CW	22	T-10	Outside	4-Pin	Cool White	12	7500	1550	1250
FC12T10/WWX	32	T-10	Dia. 12"	4-Pin	Home-line	12	7500	1190	915
FC16T10/CW	40	T-10	Outside	4-Pin	Cool White	12	7500	2200	1850
FC16T10/WWX	40	T-10	Dia. 16"	4-Pin	Home-line	12	7500	1690	1350

* In addition to rapid start operation, these lamps will give fully as good performance in any present circuit as the previous lamps did.

① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours.

② Approximate initial lumens after 100 hours operation.

③ Approximate initial lumens for F42T6, F64T6 and F72T8 lamps are for operation at 200 ma.

④ The pins of these lamps are short circuited inside the end caps and lamp will not operate on preheat ballast circuits.

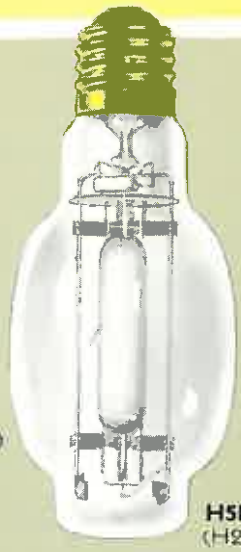
G·E BLACK LIGHT LAMPS


H4GS
(100-SP4)


H4JM
(H100-F4)


H4AB
(H100-A4)


H4AG
(H100-BL4)


H5KD
(H250-A


F40/BL


F40/BLB

"Black Light" is a popular name for near ultraviolet energy in the 3200A-4000A band. These invisible rays cause many materials to glow. The process is used for stage and decorative effects, industrial inspection and production, detective work, mineral exploration, advertising, medical and many other applications.

To be effective visible light emitted by the source must be absorbed by a filter. In the H4AG, the lamp bulb itself is the filter made of dark glass which absorbs nearly all the visible light and transmits a high percentage of black light. The other lamps require separate filters for most applications.

Reflectors are desirable with all lamps (except the H4GS and H4JM which have built-in reflectors) to direct the energy effectively.

Fluorescent Black Light Lamps are more efficient than Mercury types but require more space. The BL types require external filters; the BLB types have tubes made of a special filter glass.

Other sizes of Mercury and Fluorescent lamps are available for Black Light applications.

MERCURY BLACK LIGHT LAMPS

ASA Code	Old Lamp Ordering Abbreviation	Watts	Bulb	Base	Std. Pkg. Qty.	Approx. Hours Life	Approx. Florens *	Light Cntr. Lgth. Inches	Max. Ovrl. Lgth. Inches
H4GS	H100-SP4	100	PAR-38②③	Admed. Skt.	12	6000①	1440	....	$5\frac{7}{16}$
H4JM	H100-FL4	100	PAR-38②③	Admed. Skt.	12	6000①	1440	....	$5\frac{7}{16}$
H4AB	H100-A4	100	T-10②	Admed.	12	6000①	5030	$3\frac{7}{16}$	$5\frac{5}{8}$
H4AG	H100-BL4	100	T-16②	Admed.	12	1000	690	$3\frac{3}{16}$	$5\frac{1}{2}$
H5KD	H250-A5	250	BT-28	Mog.	12	6000①	9000	5	$8\frac{1}{4}$
HILS	H400-E1	400	BT-37	Mog.	6	6000①	22.250	7	$11\frac{1}{2}$

* 1 milliwatt of energy between 3200 and 4000A°. ① Economic life. ② Heat-resistant Bulbs. ③ Opaque coating on reflecting section of bulb.

FLUORESCENT BLACK LIGHT LAMPS

Lamp Ordering Abbreviation	Nominal Lamp Watts	Bulb	Length, Inches	Base	Standard Package Quantity	Hrs. Life ②	Approx. * Florens
F4T5/BL	6	T-5	6	Min. Bipin	24	4000	270
F4T5/BLB	6	T-5	6	Min. Bipin	24	4000	225
F15T8/BL	15	T-8	18	Med. Bipin	24	7500	1950
F15T8/BLB①	15	T-8	18	Med. Bipin	24	7500	1650
F20T12/BL	20	T-12	24	Med. Bipin	24	7500	3500
F30T8/BL	30	T-8	36	Med. Bipin	24	7500	5100
F40/BL	40	T-12	48	Med. Bipin	24	7500	8100
F40/BLB①	40	T-12	48	Med. Bipin	24	7500	6900
F48T12/BL/HO	60	T-12	48	Recessed Double Cont.	24	7500	10000

① Integral filter.
② Life under specified conditions with lamps turned off and restarted no oftener than once every 3 burning hours.
* 1 milliwatt of energy between 3200 and 4000 A°.

G·E SUN LAMPS AND GERMICIDAL LAMPS

RS■

G8T5

G4S11

G15T8 G25T8

G4T4/1

G30T8

The G-E RS sunlamp is an effective producer of skin-tanning ultraviolet energy. Regular exposure to such energy will produce tanning of the skin in most individuals. The RS sunlamp also produces radiant heat which helps provide the proper atmosphere of warmth for sun bathing and relaxation.

The RS sunlamp is particularly convenient because it provides its own reflector and filament ballast as an integral part of its design. It can be operated without external accessories from any standard household socket supplying 115-125-volt, 50- or 60-cycle alternating current. Its convenience and effectiveness are responsible for its great popularity.

A "Sun and Fun" room equipped with heat and sunlamps can provide summer conditions the year 'round.

G-E Germicidal lamps are an effective means of destroying molds and bacteria and have application in those areas where it it important to keep airborne infection at a minimum. Such areas are hospital nurseries, contagious disease wards, surgeries and post-operative recovery rooms.

In the product protection field these lamps are also widely used, for example, to help prevent contamination of vaccines, antibiotics, serums, baked goods, cheese, meat, pickles, cherries, sauerkraut, olives, sugar, soft drinks, and wine.

The G4S11 lamp is effective in maintaining sanitary storage conditions in cabinets of ½ cubic foot or less but its principal use is in the home to combat unpleasant odors occurring in kitchens, bathrooms, and closets or other small areas. Odors arising from mildew and dampness are also affected by the use of this lamp. Humidity, ventilation, and the nature of the odor affect the rapidity and degree of the lamp's action.

RS SUNLAMP

Lamp Ordering Abbreviation	Watts	Bulb	Base	Volts	Description	Std. Pkg. Qty.	Approx. Hours Life	Max. Ovrl. Lgth. Inches	Light Center Length Inches
RS■	275	R-40	Med.	110–125	*Refl. Sunlamp—I. F.	6	1000①	7	. . .

① Useful life in home applications averages about 600 applications when used for short burning periods.

GERMICIDAL LAMPS

Lamp Ordering Abbreviation	Watts	Bulb	Base	Description	Std. Pkg. Qty.	Max. Ovrl. Lgth. Inches	Approx. Hours Life
G4S11	4	S-11	Inter.	Ozone Producer ①	120	2½	6000
G4T4/1	4	T-4	Oval Small 4-Pin	Bent Tube (2a) Construction	24	5⅜	7500
G8T5	8	T-5	Min. Bipin	(2b)	24	12	7500
G15T8	15	T-8	Med. Bipin	(2b)	24	18	7500
G25T8	25	T-8	Med. Bipin	(2b)	24	18	7500
G30T8	30	T-8	Med. Bipin	(2b)	24	36	7500

① Approx. life under specified test conditions with continuous burning.

② Life under specified test conditions with lamps turned off and restarted no oftener than (a) once every three burning hours, (b) once every eight burning hours.

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75A/CL	11
75A/W	14
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75A21P	47
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75K32/DPR	"
75PAR/FL	24
75PAR/SP	"
75R30/SP	27
75R30/FL	"
75T10/45	40
94P25	43
100A/1Y	34
100A	13
100A	48
100A/Coloramic	17
100A/CL	11
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100A21P	47
100A21/3	44
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125G30	35
125R40	"
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150PAR/FL	"
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150PAR/3SP	"
150PAR46	42
150PAR46/1	"
150PAR46/3	42

Lamp Order Abbreviation	Listed On Page
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150A/Coloramic	17
150A/CL	11
150A/W	14
150P25/15	47
150P25/10	41
150	13
150/CL	11
150/WB	29
150/DCL	34
150/D	"
150/SB	28
150PS25/Y	34
150/PS25	29
150/RS	33
150/VS	"
150/400	41
150R/SP	26
150R/FL	"
150R/W	14
150R/B	27
150R/BW	"
150R/G	"
150R/PK	"
150R/R	"
150R/Y	"
150T8/2SC	40
150HL	23
200PAR	44
200PAR46/3NSP	24
200PAR46/3MFL	"
200	11
200/IF	13
200A	"
200A/CL	11
200/WB	29
200/D	34
200/SBIF	28
200/SBIF/1	"
200PS30/24	33
200PS30/23	"
200PS30/12	11
200 (H.V.)	29
200IF	"
200	42
250G/SP	30
250G/FL	32
250G30	35
250P25	44
250P25/22	"
250R40/1	35
250R40/4	"
250PS30/33	35
250R40/10	"
300M	11
300M/IF	13
300MS/SBIF	28

Lamp Order Abbreviation	Listed On Page
300MS (H.V.)	29
300	11
300	29
300/IF	"
300/IF	13
300/WB	29
300PAR56/NSP	24
300PAR56/MFL	"
300PAR56/WFL	"
300/SBIF	28
300/SBIF/1	"
300R/SP	26
300R/SP/1	"
300R/FL	"
300R/FL/1	"
300/RS	33
300R/SP/1	26
300R/3SP	"
300R/3FL	"
300/3FL/MS	"
300HL	23
325/66/A21	47
375G30	35
375R40/1	"
375R40	"
375R40/10	"
375T3	37
400G/SP	30
400G/FL	32
500G30/1	35
500G/FL	32
500G/SP	30
500	11
500/IF	13
500PAR64/NSP	24
500PAR64/MFL	"
500PAR64/WFL	"
500/SBIF	28
500SBIF/1	"
500/RS	33
500PS40/45	47
500 (H.V.)	29
500/IF	"
500R/3SP	26
500R/3FL	"
500R52	"
500T3	37
500T3Q/CL	"
500T20/64	30
500T20/13	47
500T12/8	30
500T12/9	"
500T14/8	30
500T14/7	"
500T20/25	47
500T20/45	30
620PS40/P	47

Lamp Order Abbreviation	Listed On Page
750	11
750/7	32
750/IF	13
750/SBIF	28
750 (H.V.)	29
750/IF	"
750R52	26
750T12/9	30
750T12/34	41
750T14	30
750T24	13
750T24/5	30
750T24/13	"
750T24/16	"
1M/G25	42
1M/G40SP4¼	30
1M/G40/23	"
1M/G40PSP	"
1M/G40FL	32
1000	11
1000/IF	13
1000/SBIF	28
1000 (H.V.)	29
1000/7	32
1M/PS52/44	11
1MPS52/44	32
1M/T20/5	42
1M/T20BP	47
1M/RB52	26
1M/T24/5	30
1M/T24	13
1M/T3	37
1M/T40/3	"
1M/G48/11	30
1020/66/A21	47
1200T20	"
1500G48/6	32
1500PS52/46	11
1500/PS52/46	32
1500	11
1500	32
1500/IF	13
1500 (H.V.)	29
1500T3Q/CL	37
1500T24/6	30
1600T3	37
2M/G48/14	30
2M/G48/17	"
2M/G48/18	"
2M/T30/1	"
2500T3	37
3800T3	37
5M/G48	42
5M/T64/1	30
5M/G64/3	"
5M/G64/7	"
10KG96	30

G·E PACKAGING FOR YOUR CONVENIENCE

General Electric lamps are available in different size packages. The number of lamps in each package is determined by the preferred unit of purchase, size of the lamp bulb, etc. Whether you need a few lamps of a special type or a large number of popular types at one time, order them in the most practical and convenient quantities. For more information, see your regular G-E lamp representative.

STANDARD PACKAGE

Most General Electric lamps are packed 12, 24, 60, or 120 lamps to standard packages. A few larger sizes are packed in standard packages of less than a dozen lamps, usually 4, 6, or 8 lamps. Standard package quantities of each lamp are shown in this catalog.

CARTONS

Standard packages contain lamps packed in cartons containing from one to six or more lamps. These smaller units are of interest if your requirements are for less than a standard package quantity at one time. Following is a list of carton quantities in which different types of lamps are packed.

Lamp		Bulbs per Carton
"A" Line:	15- to 100-watt Inside Frost or White	4
	60- and 100-watt Yellow	4
	Other than above General Ltg. Lamps	6
"F" Line:	F-10 and F-15	6
"G" Line:	G-11, G-16, G-19, G-25	6
"C" Line:	C-7 Indicator and Night Lights	6
	C-7 Display Pack (2 bulbs per card)	24
"B" Line:	B-9½	6
"R" Line:	R-20	6
	Other "R" Lamps	Single pack
"S" Line:	S-6 Indicator (high voltage)	6
	S-6 Indicator	6
	S-11 and S-14	6
"T" Line:	T-6½ and T-10	Single pack
	T-8	Paper band around 6

12-LAMP PACK

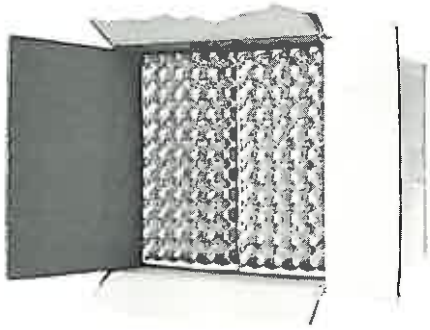
Smaller, with die-cut hand holds. For RS-52, R-52 and RB-52. Easy to handle.

SPECIALTY PACKAGES

Many household size lamps are available in specialty 24-lamp packs. Most three-way lamps are available in 12-lamp specialty packs; popular sizes of fluorescent lamps in 6-lamp specialty packs only.

Specialty packs facilitate stocking, handling and shipping less than standard package quantities of lamps for distributors and retailers. Most incandescent lamps in specialty packs are priced-marked; fluorescent lamps are not.

BULK PACKING



General Electric lamps are also available in bulk packing at no extra charge. A bulk package is a single box containing a larger quantity than a standard package of lamps. It contains a minimum of protective packing to dispose of and can be handled easily by one person. The number of lamps in a bulk package varies from 1000 of the small night-lite or indicator type lamps to 18 of the large PAR-56 or PAR-64 lamps.

PALLETS

Some fluorescent types are now available on disposable pallets at no extra charge. Where quantities of 500–1000 lamps are ordered at a time for new installations or for relamping, you save valuable handling time and trouble.

HOW TO ORDER LAMPS

Purchasers are urged to order in standard packages to expedite service and to assure best discount.

Quantity desired of each type of lamp should be specified.

Lamps should be ordered by the Lamp Ordering Abbreviations provided in this Schedule for each type. Each abbreviation is complete for ordering without any other specifications, except that the correct voltage must be specified.

Abbreviations which are complete without voltage include the series lamps listed in lumens and amperes, fluorescent lamps, and the lamp numbers for General Electric Sunlamps and General Electric Mercury Lamps.

Orders for lamps not specifically listed herein will require the complete specifications, as follows:

For Example:

Specification	Multiple Lamps	Series Lamps
Size	150 watts	2500 lumens
Volts or Amps.	120 volts	15 amperes
Bulb	A-19, PS-30, G-25, etc.	PS-25, PS-35, etc.
Base	Medium screw, mogul screw, candelabra screw, etc.	
Finish	Clear, inside frosted, daylight, etc.	
Service	Projection, Train, etc.	Street Lighting

DISCOUNT SCHEDULE TO PURCHASERS FOR THEIR OWN USE

Effective February 1, 1960

TO PURCHASERS WITHOUT CONTRACT

	Discount
Order For Less Than $10.00 List	0%
Order for $10.00 List or More*	Not to Exceed 32%

* Except in the case of RS lamps (Six or more lamps must be purchased for a discount to apply)

TO PURCHASERS UNDER ANNUAL CONTRACT

General Electric Large Lamps may be purchased under a Form E Contract by purchasers for their own consumption. For information concerning discounts available under a Form E Contract, consult your G-E lamp supplier or your G-E Large Lamp Sales or Service District Office listed on the back page of this catalog.

ADVANTAGES OF G-E LAMP FORM E PURCHASE CONTRACT

Saves you time and ordering expense because you get all Large Lamps from one supply source.

You get maximum earned discounts.

Discount applies to entire year's purchases. If your requirements increase, your discount rate may increase retroactively to the beginning of the contract.

All of your company properties may buy on this single contract, regardless of where they are located in the United States.

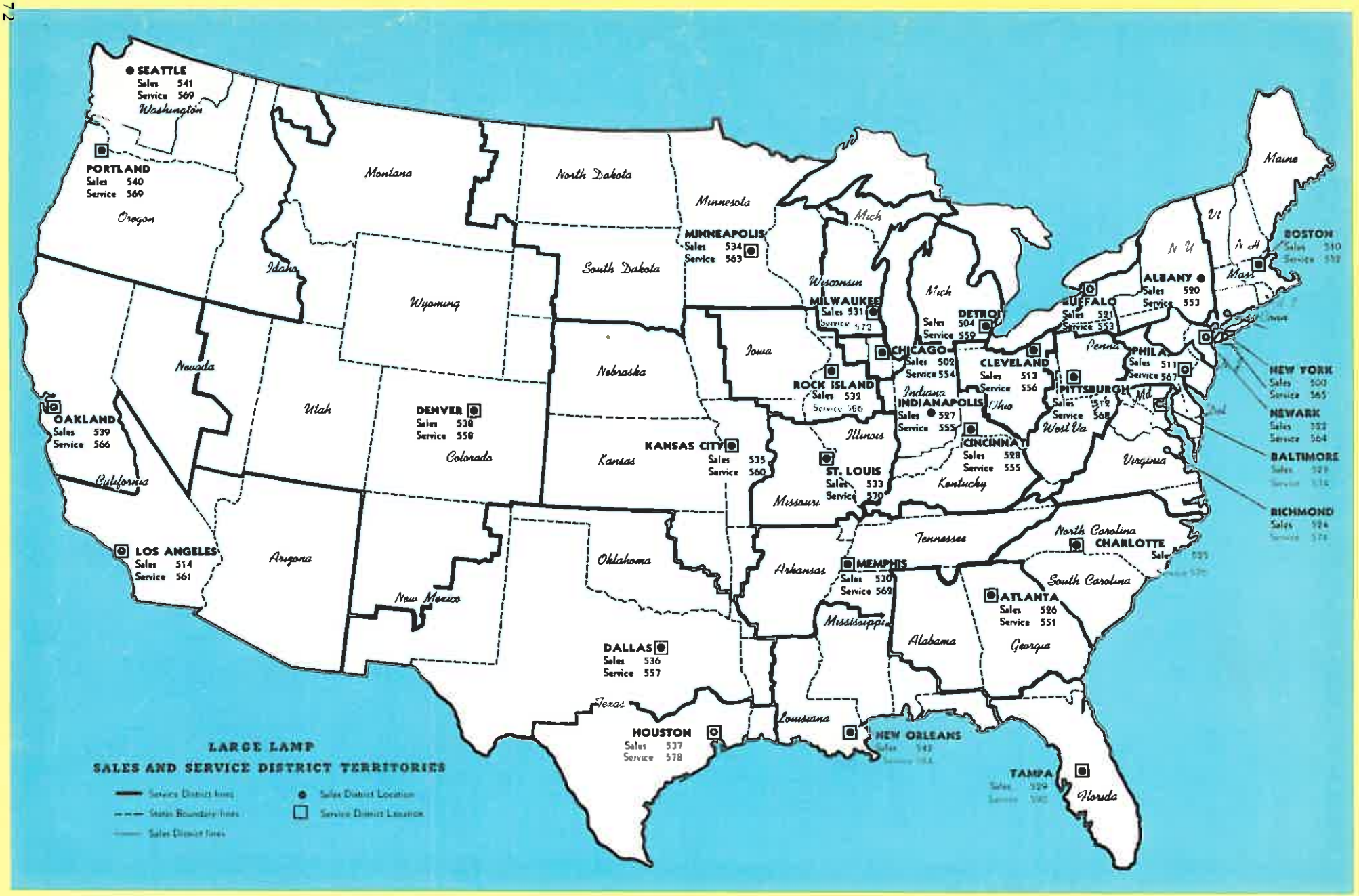
You get immediate benefit of all price reductions.

You hear promptly of all latest lamp and lighting developments.

You get local lighting and lamp consulting service as a part of your contract. Both your Serving Agent and General Electric place their entire organizations at your service.

For quick local delivery your supplier will stock all lamp types you normally use.

General Electric Lamp salesmen are resident in many towns and cities throughout the country. Consult your local telephone directory under General Electric Company Lamp Division.



Sales representatives in 32 Districts and Service representatives in 26 Districts provide customers with every cooperative assistance in obtaining lamps needed.

Warehouse stocks of many millions of lamps are maintained at strategic locations throughout the country to assure prompt availability of all types of lamps.

Engineers in each of the 32 Districts offer extensive application engineering services.

General Electric Large Lamp Sales and Service District Offices

CITY	SALES DISTRICTS (To Obtain Sales and Technical Information)	Zone		SERVICE DISTRICTS (To Order Lamps and to Obtain Shipping Information. Local Warehouse Stocks maintained at these Points)	Zone	
ALBANY, N.Y.	879 Madison Ave.	8	IVanhoe 2-3345	Buffalo Serv. Dist., 98 Hydraulic St., Buffalo 10, N.Y.		
ATLANTA, GA.	361 E. Paces Ferry Rd., N.E.	5	CEdar 3-5418	680 Murphy Ave. S. W.	10	PLaza 5-3736
BALTIMORE, MD.	1401 Parker Rd.	27	CIrcle 2-5700	1401 Parker Rd.	27	CIrcle 2-5700
BUFFALO, N.Y.	438 Delaware Ave.	2	GArfield 7381	98 Hydraulic St.	10	MOhawk 0800
CHARLOTTE, N. C.	1001 Tuckaseegee Rd.	8	FRanklin 6-6585	1001 Tuckaseegee Rd.	8	FRanklin 6-6585
CHICAGO, ILL.	165 No. Canal St.	6	DEarborn 2-4712	4201 So. Pulaski Rd.	32	CLiffside 4-6161
CINCINNATI, OHIO	990 Nassau St.	6	WOodburn 1-4343	49 Central Ave.	2	GArfield 1-6810
CLEVELAND, OHIO	12910 Taft Ave.	8	LIberty 1-1700	12910 Taft Ave	8	LIberty 1-1700
DALLAS, TEXAS	6500 Cedar Springs Rd.	35	FLeetwood 1-3725	6500 Cedar Springs Rd.	35	FLeetwood 1-3725
DENVER, COLO.	6501 E. 44th Ave.	16	DUdley 8-4611	6501 E. 44th Ave.	16	DUdley 8-4611
DETROIT, MICH.	1400 Book Tower	26	WOodward 3-6910	1448 Wabash Ave.	16	WOodward 2-9650
HOUSTON, TEXAS	4219 Richmond Ave.	27	MOhawk 7-7595	5534 Armour Dr.	20	WAlnut 3-2549
INDIANAPOLIS, IND.	3333 N. Meridian St.	8	WAlnut 4-5638	Cincinnati Serv. Dist., 49 Central Ave., Cincinnati 2, Ohio		
N. KANSAS CITY, MO.	200 East 16th Ave.	16	GRand 1-3568	200 East 16th Ave.	16	GRand 1-3568
LOS ANGELES, CALIF.	2747 South Malt Ave.	22	RAymond 3-2541	2747 South Malt Ave.	22	RAymond 3-2541
MEMPHIS, TENN.	1179 Morehead St.	7	JAckson 3-1441	1179 Morehead St.	7	JAckson 3-1441
MILWAUKEE, WIS.	5300 N. Sherman Blvd.	9	HOpkins 2-3860	5300 N. Sherman Blvd.	9	HOpkins 2-3860
MINNEAPOLIS, MINN.	500 Stinson Blvd.	13	STerling 9-7286	500 Stinson Blvd.	13	STerling 9-7286
NEWARK, N. J.	744 Broad St., Room 606	2	MArket 3-3953	133 Boyd St.	3	BIgelow 3-4500
NEW HAVEN, CONN.	135 College St.	10	LOcust 2-9828	N. Y. Serv. Dist., 75-11 Woodhaven Blvd., Glendale 27, N. Y.		
NEW ORLEANS, LA.	4800 River Rd.	21	VErnon 5-6421	4800 River Rd.	21	VErnon 5-6421
NEWTON UPPER FALLS, MASS.	50 Industrial Place	64	DEcatur 2-6200	50 Industrial Place	64	DEcatur 2-6200
NEW YORK, N.Y.	570 Lexington Ave.	22	PLaza 1-1311	N. Y. Serv. Dist., 75-11 Woodhaven Blvd., GLendale 27, N. Y.		
OAKLAND, CALIF.	999 – 98th Ave.	3	LOckhaven 9-3422	999 – 98th Ave.	3	LOckhaven 9-3422
PHILADELPHIA, PA.	3 Penn Center Plaza	2	LOcust 4-4870	Rt. 202 at Expressway, Box 525, King of Prussia, Pa.	—	MUrray 8-5900
PITTSBURGH, PA.	238 W. Carson St.	19	GRant 1-9050	238 W. Carson St.	19	GRant 1-9050
PORTLAND, ORE.	2800 N. W. Nela St.	10	CApitol 3-2101	2800 N.W. Nela St.	10	CApitol 3-2101
RICHMOND, VA.	1004 N. Thompson St.	30	ELgin 8-2385	Baltimore Serv. Dist., P.O. Box 7427, Baltimore 27, Md.		
ROCK ISLAND, ILL.	111 Fourth Ave.	—	8-3405	111 Fourth Ave.	—	8-3405
SEATTLE, WASH.	10 W. Connecticut St.	4	MAin 2-8081	Portland Serv. Dist., 2800 N.W. Nela St., Portland 10, Ore.		
ST. LOUIS, MO.	800 N. Twelfth Blvd.	1	CHestnut 1-8920	800 N. Twelfth Blvd.	1	CHestnut 1-8920
TAMPA, FLA.	505 Twiggs St.	2	2-0115	815 North 26th St.	1	TAmpa 4-4174

In addition to the Sales District Headquarters cities listed above, G-E Lamp Salesmen are resident in 89 other cities. Consult your telephone directory under General Electric Company Lamp Division.

General Offices: Nela Park, Cleveland 12, Ohio

LARGE LAMP DEPARTMENT

GENERAL ELECTRIC

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