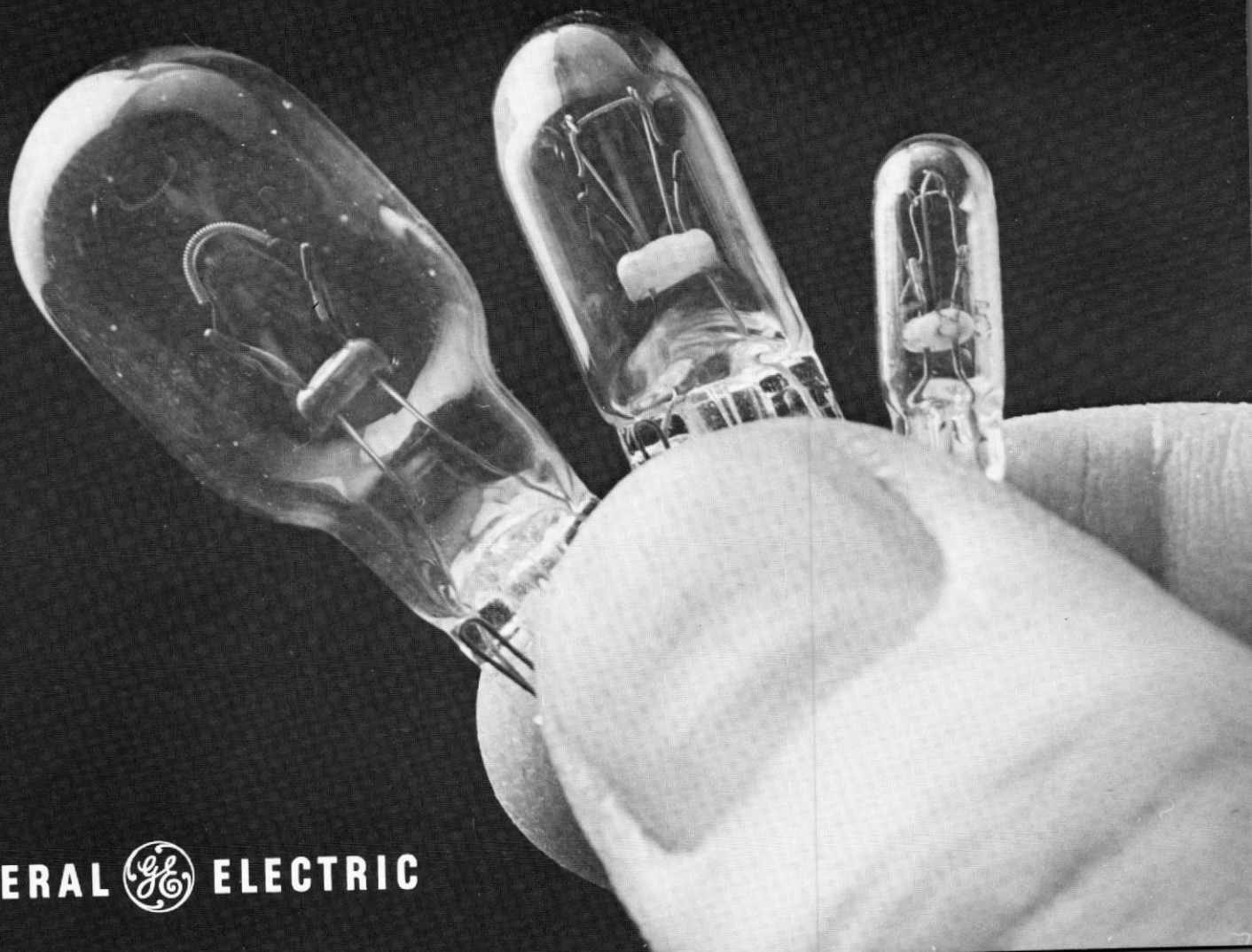




MINIATURE AND SUB-MINIATURE

# All-Glass Wedge Base

INCANDESCENT LAMPS



GENERAL  ELECTRIC

# GE ALL-GLASS WEDGE BASE LAMPS... FOR HELP IN SAVING WEIGHT, SPACE, TIME, AND COST

The most conspicuous feature of all GE all-glass wedge base lamps is their lack of the familiar metal base found on other miniature lamps.

General Electric introduced wedge base lamps in 1959 for automotive, radio, and TV applications, and immediately opened up new avenues of design freedom and a host of user benefits:

- **Lower system cost** than that possible with metal-based lamps and LED's. Wedge base lamps eliminate complicated metal sockets and wiring devices normally used with metal-based lamps. Printed circuits with simple plastic sockets or clips and molded plastic components can be used with wedge base lamps to save weight, space, time, and costs.
- **Ease of assembly and replacement.** Just push to install, pull to remove. No twisting required. Saves time and money in assembly operations. With wedge base lamps, you can design OEM equipment for rear assembly of lamp and socket and still allow accessibility from the front for ease of replacement.

- **Minimized Socket Corrosion.** Most wedge base contact wires are nickle plated to protect them from the severe corrosive environments of automobile service. These nickle plated wires are not easily solderable. For low voltage sub-miniature lamps, (under 12v) or extended lead lamps, dumet is used for lead material. Dumet allows better contact at lower voltage operation and is solderable for a period of 6 months. For assistance, call your local Miniature Lamp sales office listed on the back cover of this bulletin.

- **Uniform filament orientation.** The plane of the filament in every GE wedge base lamp is constant with relation to the way the lamp goes into the socket — a feature that's not practical to incorporate in metal-based lamps. So the light from a wedge base lamp is in the same direction as that of the lamp being replaced.

- **Minimum space requirements,** especially when used with printed circuits. And, since 1972, there's the GE subminiature (6 mm) wedge base lamps that give industrial designers even more latitude where space is at a premium.

- **Proven performance and reliability** — since 1959, under some of the most severe operating conditions, including all the shock, vibration, heat, cold, and moisture to which automobiles are subjected. As a single integrated unit, the GE wedge base lamp has no soldered connections that can corrode or work loose and break. The elimination of soldered connections and cemented metal bases allows most of these lamps to be operated at temperatures up to 230°C (450°F)\* instead of the 175°C (350°F) limit of conventional metal base lamps. They can also withstand more heat from adjacent components or enclosed installations.

- **Full Range of Types and Sizes.** GE wedge base lamps are available in more than 25 types, ranging from 2.5 to 28 volts and from 0.03 to 21 candlepower. Bulb sizes include two miniature diameters — 10 and 15 mm — and one subminiature diameter — 6 mm. A complete listing of available lamps begins on page 6.

\*Light output of lamps No. 70, 74, 168, and 194 will be reduced if operated continuously at 230°C.

Three sizes of GE wedge base lamps



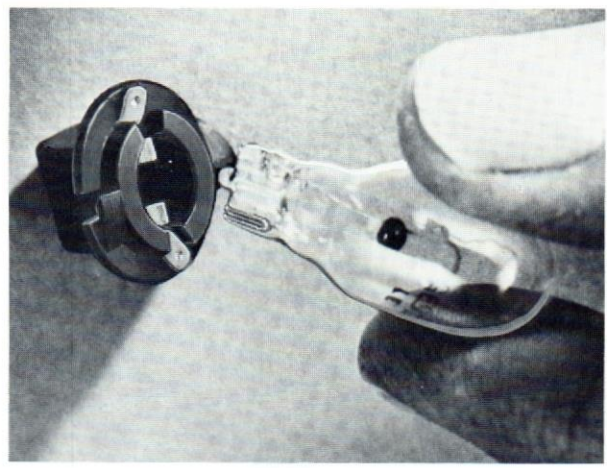
T-1 3/4  
6 mm (1/2 in.)



T-3 1/4  
10 mm (1 3/32 in.)



T-5  
15 mm (5/8 in.)



# APPLICATIONS

GE all-glass wedge base lamps are excellent for indicator, marker, and general illumination applications in a wide variety of product lines, such as automobiles, trucks, large and small appliances, toys, novelties, aircraft, coin-operated machines, boats, tractors, recreational vehicles, and fiber-optic devices. They're especially useful wherever space is at a premium.

The numerous benefits of GE wedge base lamps have been proved by the automotive industry. In some cars, for example, where wedge base lamp assemblies have been combined with flexible printed circuits in instrument panels, designers have been able to reduce the depth of the panel, making it possible to increase passenger compartment space or provide room for air conditioning ducts. Shallower instrument clusters can also be placed farther away from the driver and thus allow space for safety padding.

Listed below are just a few of the many applications for GE all-glass wedge base lamps. A listing of applications by lamp number is given on page 9. Conventional lamps that you may now be using are also listed on page 9 alongside electrically equivalent GE wedge base lamps. Use all these lists to select a money-saving wedge base lamp for your application!

## Automotive

- Illumination — gages, switches, radio, clock, lighter, PRNDL gear shift, ignition and steering lock, courtesy and map lights, instrument-panel clusters, glove compartment, trunk, engine compartment.
- Indicator — warning lamps (Low Fuel, No Oil, Parking Brake On, Brake Failure, Fasten Seat Belt, Door Ajar), high-beam and turn-signal indicators.
- Marker — side markers, license plates, truck clearance and identification lamps, parking and tail lamps.

- Signal — auxiliary high-mounted stop and turn signals, intermediate side turn signals.

## Appliances

- Clocks — conventional, digital
- Timers — kitchen range
- Radios
- Television — channel selector
- Ranges and ovens
- Washing machines
- Dryers
- Dishwashers
- Compactors

## Novelties, Toys

- Coin-operated dispensing machines
- Pinball machines
- Electric games
- Hobby kits

## Communications, Electronics

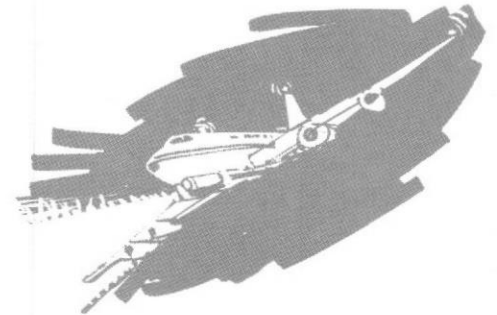
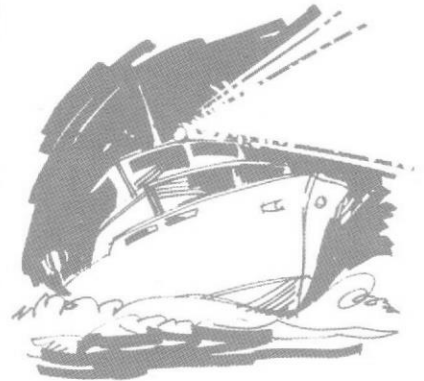
- Telephones, call directors
- Computers
- Annunciators — hotel, hospital, elevator
- Radios — transmitter, scanner
- Meters
- Illuminated pushbuttons — low-voltage control equipment
- Copying machines — indicators

## Aircraft, Aerospace

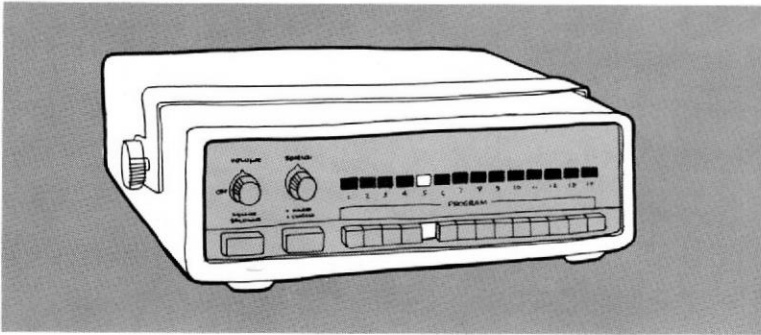
- Instrument-panel illumination
- Aisle illumination
- Warning indicators
- Seat identification
- Markers

## Other Transportation

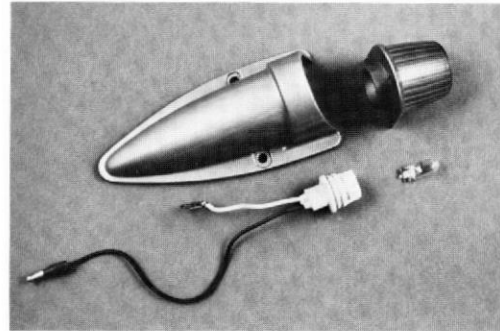
- Boats — indicators, and running, courtesy, instrument, and navigational lights
- Motorcycles — side markers and tail lights
- Tractors — instruments
- Snowmobiles
- Recreational vehicles
- Trailers, campers
- Buses
- Battery chargers



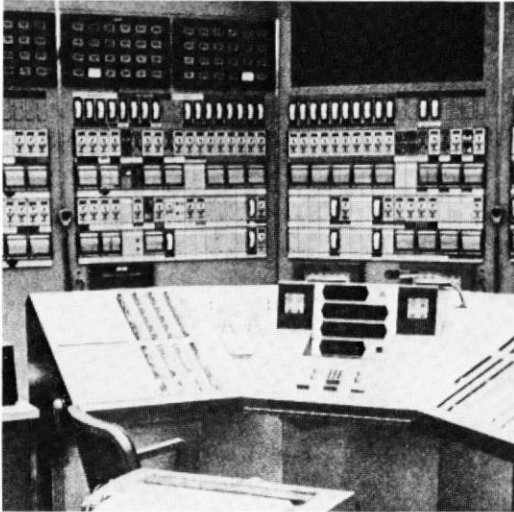
# Use E All-Glass Edge Base Lamps for Indicators, Markers, and General Illumination in a Wide Variety of Products . . .



• Radio scanners



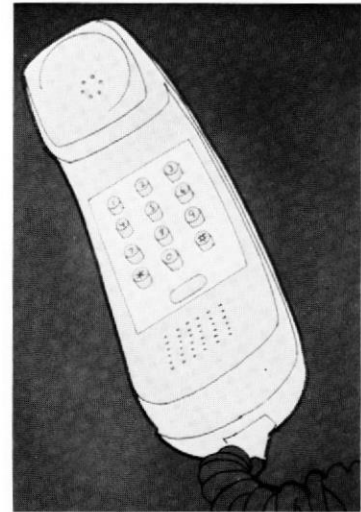
• Truck markers



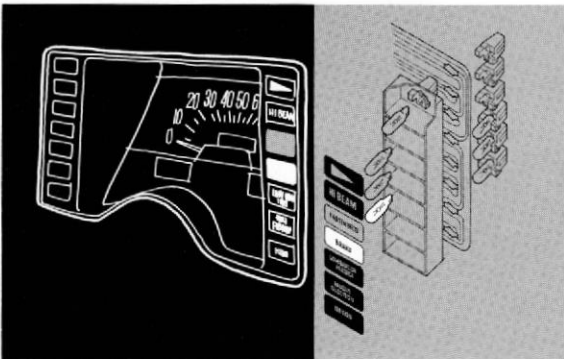
• Pushbutton switches



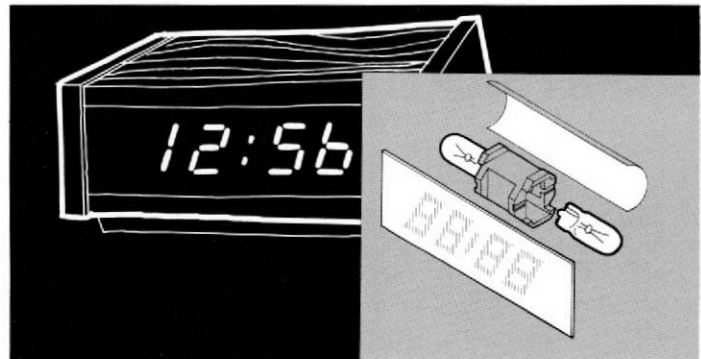
• Organ annunciators



• Telephones



• Instrument clusters



• Clock dials

## OEM Product

### Design Factors

Selection of the proper GE all-glass wedge base lamps for a specific product must be based on certain design factors of that product, such as . . .

- Purpose of lamps (illumination, indicator, marker, warning system, etc.)
- Available voltage and power source
- Available space for lamps
- In-place assembly and/or operating costs of lamps

Once these factors have been determined, use the convenient charts on pages 6-9 of this Selection Guide to find the lamp or lamps that offer the combination of features suitable for the above design factors for your specific application.

## Lamp Mechanical Strength

All GE wedge base lamps are ruggedly built, but some types are made specifically for heavy-duty use. Examples are Lamps No. 161, 168, and 194 (see "Physical Specifications" chart on page 7). These are made with special filaments and two filament supports for added strength to withstand vibration and shock.

For indicator applications in which lamps may be subjected to shock and vibration, lower voltage lamps should be considered. They have relatively shorter, large-diameter filaments, compared to filaments in lamps designed for higher voltage. An example is GE lamp No. 159. With its good strength and long design life, this lamp is excellent for use in radios, televisions, and coin machines. In extreme shock and vibration situations, consult your nearest GE Miniature Lamp sales office listed on the back of this bulletin for technical assistance.

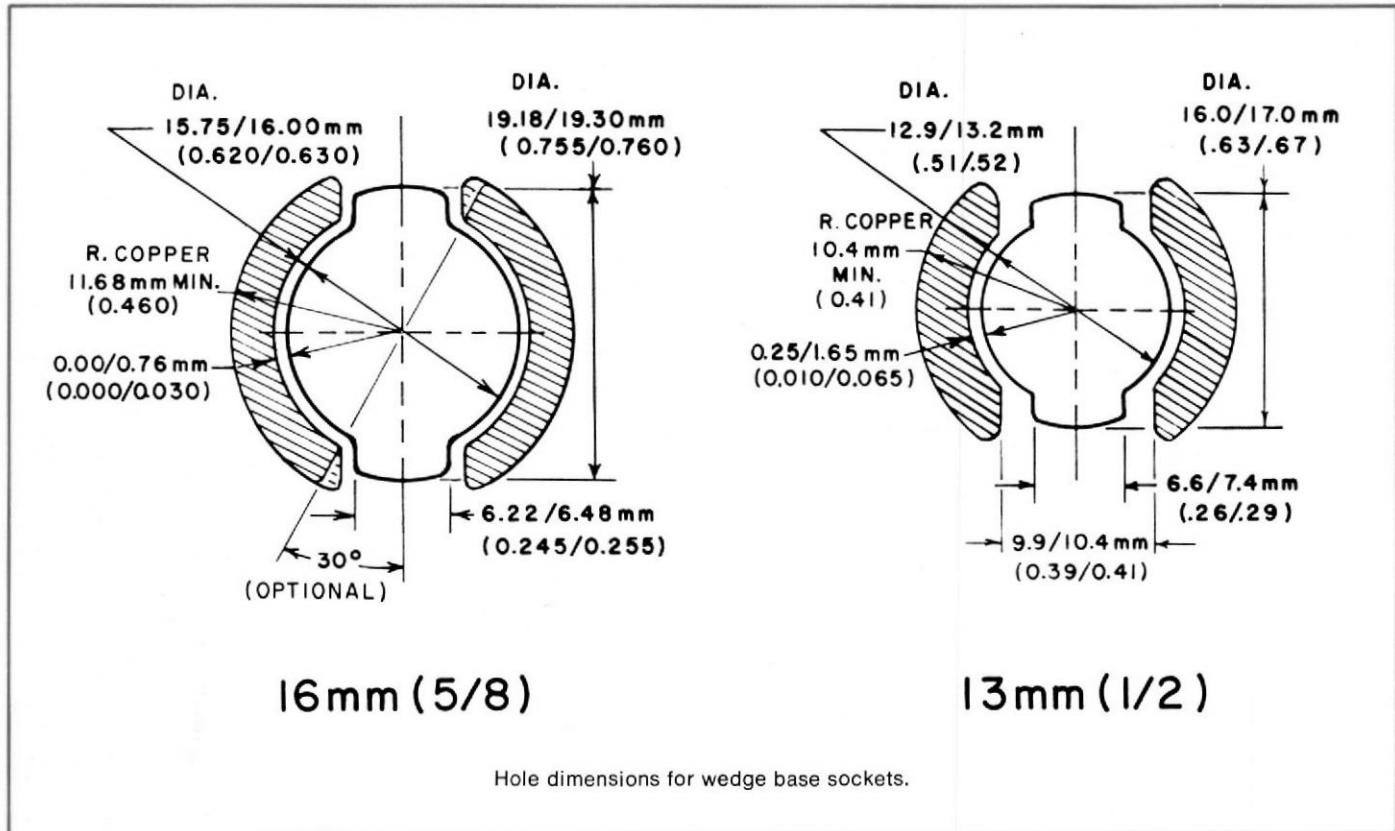
## Lampholders

Wedge base lamps offer new opportunities for designing customized, simplified, one-piece, molded plastic sockets that can be snapped into lighting circuits quickly and easily for cost-saving assembly time.

The sketches below show hole dimensions for 16 mm and 13 mm wedge base sockets, respectively.

Essential socket design dimensions for T-1¼ (6 mm), T-3¼ (10 mm), and T-5 (15 mm) lamps are given on pages 10 and 11.

The requirements and gages to be used in wedge base socket designs are given in Specification SAE J567, **Lamp Bulb Retention Systems.**



# SELECTION GUIDE

## GE All-Glass Wedge Base Lamps

Use these convenient charts to select a lamp that meets a specific design requirement. For example, if electrical factors are the primary consideration, begin with the "Electrical Specifications" chart, which lists lamps according to design volts (column 1) in ascending order. You can then check "Physical Specifications" and "Applications" in the other two charts, which list lamps in numerical order.

For assistance in lamp applications, consult your GE Miniature Lamp

representative listed on the back of this bulletin.

Lamp numbers in the selection charts are those of the American National Standards Institute (ANSI) and are uniform throughout the industry. ANSI lamp numbers are standardized, and they ensure electrical and mechanical interchangeability. But they do not identify quality . . . a good reason for insisting on genuine General Electric wedge base lamps.

### ● Leads Termination

Subminiature wedge base lamps listed here can be supplied with leads extended down, approximately  $\frac{5}{8}$ " long. This feature allows you to use the rugged wedge base lamp in applications where lamps are crimped, welded or soldered into circuits. Consult your nearest GE sales office listed on the back of this bulletin.

### ELECTRICAL SPECIFICATIONS

Design volts	Design amps.	Candlepower (approx.)	Rated Avg. lab life	GE lamp No.
2.5	0.20	0.20	1,000	11 <sup>130</sup>
5	0.115	0.15	20,000 <sup>79</sup>	56 <sup>130</sup>
6	0.20	0.60	1,000 <sup>79</sup>	79 <sup>130</sup>
6.3	0.04	0.03	20,000 <sup>79</sup>	84 <sup>130</sup>
6.3	0.15	0.34	5,000 <sup>75</sup>	16 <sup>130</sup>
6.3	0.15	0.34	5,000+ <sup>44</sup>	159
6.3	0.20	0.40	20,000 <sup>75 79</sup>	86
6.3	0.20	0.40	20,000 <sup>75 79</sup>	86E <sup>122 129</sup>
6.3	0.25	0.65	5,000+ <sup>44</sup>	259
7	0.43	2.0	1,500	147
12.8	1.00	12.0	1,000	912
12.8	1.40	21.0	1,000 <sup>75</sup>	921 <sup>121</sup>
13	0.33	—	500	558 <sup>68</sup>
13	0.33	3.0	1,000	192
13	0.69	6.0	1,000	906
13.5	0.69	4.0	5,000	904
14.0	0.04	0.13	5,000 <sup>75</sup>	18
14	0.08	0.3	15,000 <sup>79</sup>	73
14	0.08	0.3	15,000 <sup>79</sup>	73E <sup>122 129</sup>
14	0.08	0.31	15,000 <sup>43</sup>	658
14	0.09	0.5	1,500 <sup>79</sup>	37
14	0.09	0.5	1,500 <sup>79</sup>	37E <sup>122 129</sup>
14	0.10	0.7	500 <sup>79</sup>	74
14	0.19	1.0	4,000	161
14	0.15	1.5	100	70 <sup>14 126</sup>
14	0.24	2.0	500	158
14	0.27	2.0	2,500	194
14	0.35	3.0	1,500	168
28	0.04	0.30	7,000 <sup>79</sup>	85
28	0.06	0.62	2,500	656
28	0.06	0.65	5,000 <sup>75</sup>	17
28	0.08	0.62	7,500 <sup>43</sup>	657
28	0.10	1.6	1,000	400
28	0.17	3.0	1,500	464

<sup>14</sup> This lamp is specially designed for a particular purchaser and may not be suitable for other uses because of its excessive wattage requirements for the bulb size. Consult nearest Sales Office for application information.

<sup>43</sup> Design life is 50,000 hrs.

<sup>44</sup> At 6.6 volts.

<sup>68</sup> Uses lens-end TL-3 $\frac{1}{4}$  bulb. Provides 7,000 to 11,000 footcandles in a  $\frac{1}{4}$ " diameter spot at  $\frac{1}{8}$ " from end of bulb.

<sup>75</sup> Estimated. Based on limited test information.

<sup>79</sup> Life shown is A.C. volts only. D.C. operation life will be approx. 50% of A.C.

<sup>121</sup> To minimize the possible adverse effects on lamp life due to excessive wattage in relationship to bulb size; BURN BASE DOWN TO BASE 45° ABOVE HORIZONTAL. Regardless of burning position, this excessive wattage will abnormally decrease light output during lamp life.

<sup>122</sup> This is a wire terminal lamp. The glass-to-metal seal and tip, where applicable are susceptible to damage by thermal shock and soldering within  $\frac{1}{8}$ " of the glass should be avoided as glass cracks and air leaks may develop.

<sup>123</sup> Lead length  $\frac{5}{8}$ " min.

<sup>126</sup> Intermittent service only.

<sup>129</sup> Leads cleaned and solderable.

<sup>130</sup> Subminiature wedge base lamps under 12 volts have copper clad outer lead wires to decrease contact resistance at the expense of corrosion resistance in severe environments.

PHYSICAL SPECIFICATIONS

GE lamp No.	Description	Dimensions				Filament type	Fig. No. (Page 8)
		Light center length		Max. overall length			
		mm	in.	mm	in.		

T-1 3/4 BULB (6 mm, 7/32 in. diam)

11	Subminiature, 2.5 V	10.2	0.40	20.3	0.80	C-2R	1, A
16	Subminiature, 6.3 V	10.2	0.40	20.3	0.80	C-2F	1, A
17	Subminiature, 28 V	10.2	0.40	20.3	0.80	C-2F	1, A
18	Subminiature, 14 V	10.2	0.40	20.3	0.80	C-2F	1, A
37	Subminiature, 14 V	10.2	0.40	20.3	0.80	C-2F	1, A
37E	Subminiature, 14 V Leads Extended	10.2	0.40	20.3	0.80	C-2F	1, X <sup>123</sup>
56	Subminiature, 5 V	10.2	0.40	20.3	0.80	C-2R	1, C
70	Subminiature, 14 V	10.2	0.40	20.3	0.80	C-2F	1, A
73	Subminiature, 14 V	10.2	0.40	20.3	0.80	C-2F	1, A
73E	Subminiature, 14 V Leads Extended	10.2	0.40	20.3	0.80	C-2F	1, X
74	Subminiature, 14 V	10.2	0.40	20.3	0.80	C-2F	1, A
79	Subminiature, 6 V	10.2	0.40	20.3	0.80	C-2R	1, C
84	Subminiature, 6.3 V	10.2	0.40	20.3	0.80	C-2V	1, B
85	Subminiature, 28 V	10.2	0.40	20.3	0.80	C-2F	1, A
86	Subminiature, 6.3 V	10.2	0.40	20.3	0.80	C-2F	1, A
86E	Subminiature, 6.3 V Leads Extended	10.2	0.40	20.3	0.80	C-2F	1, X

T-3 3/4 BULB (10 mm, 13/32 in. diam)

147	7 V, 2 cd	14.2	0.56	27.0	1 1/16	C-2R	2, C
158	14 V, 2 cd	14.2	0.56	27.0	1 1/16	C-2V	2, B
159	Miniature, 6.3 V	12.7	0.50	27.0	1 1/16	C-2R	2, C
161	Heavy-duty, 14 V	14.2	0.56	27.0	1 1/16	C-2F	2, A
168	Heavy-duty, 14 V	14.2	0.56	27.0	1 1/16	C-2F	2, A
192	Miniature, 13 V	14.2	0.56	27.0	1 1/16	C-2V	2, B
194	Heavy-duty, 14 V	14.2	0.56	27.0	1 1/16	C-2F	2, A
259	Miniature, 6.3 V	17.5	0.69	27.0	1 1/16	C-2R	2, C
400	Miniature, 28 V	14.2	0.56	27.0	1 1/16	C-2F	2, A
464	Miniature, 28 V	14.2	0.56	27.0	1 1/16	C-2F	2, A
558	Lens end, 13 V	—	—	27.0	1 1/16	C-2V	3, B
656	Miniature, 28 V	14.2	0.56	27.0	1 1/16	C-2F	2, A
657	Miniature, 28 V	14.2	0.56	27.0	1 1/16	C-2F	2, A
658	Miniature, 14 V	14.2	0.56	27.0	1 1/16	C-2F	2, A

T-5 BULB (15 mm, 5/8 in. diam)

904	Heavy-duty, gas-filled, 4 cd, 13.5 V	20.6	0.81	37.9	1.49	C-2F	4, A
906	Heavy-duty, gas-filled, 6 cd, 13 V	20.6	0.81	37.9	1.49	C-2F	4, A
912	Heavy-duty, gas-filled, 12 cd, 12.8 V	20.6	0.81	37.9	1.49	C-2R	4, C
921	Heavy-duty, gas-filled, 21 cd, 12.8 V	20.6	0.81	37.9	1.49	C-2R	4, C

# ENGINEERING SPECIFICATIONS

Dimensions in parentheses—(nearest equivalent inches)  
lamp currently gaged to English dimensions.

Fig. 1 — T-1 $\frac{3}{4}$  Subminiature wedge base lamp.

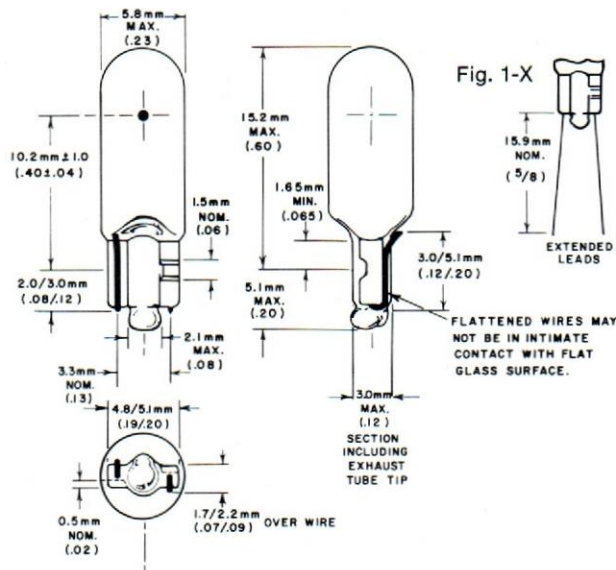


Fig. 3 — TL-3 $\frac{3}{4}$  Miniature lens-end wedge base lamp No. 558.

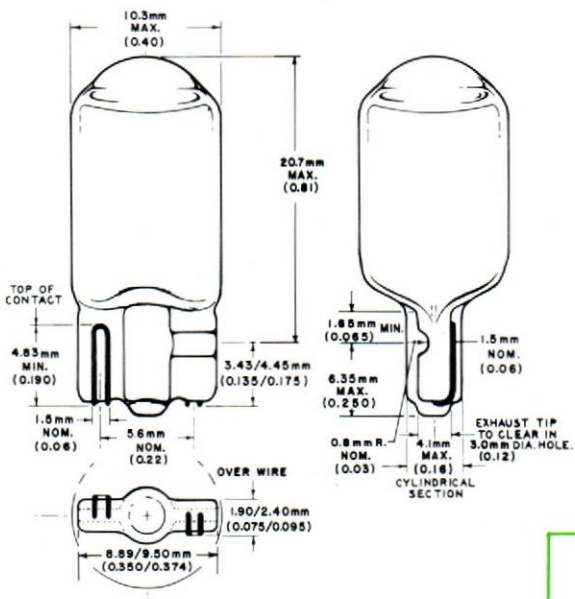


Fig 2 — T-3 $\frac{3}{4}$  Miniature wedge base lamp.

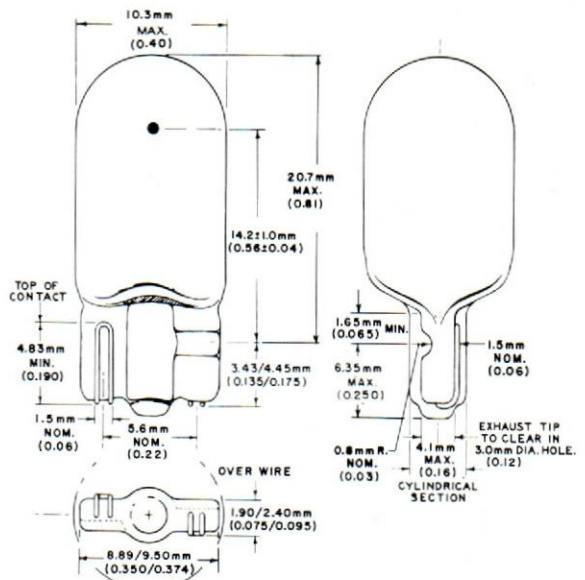
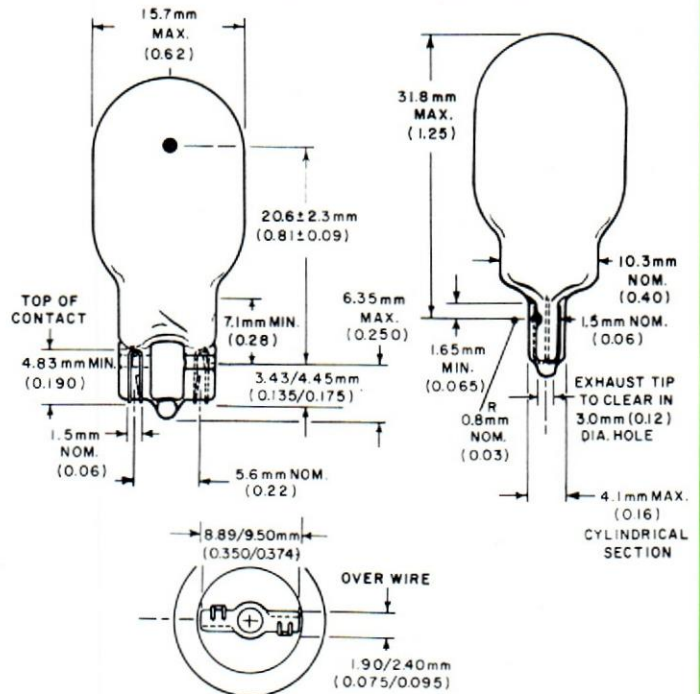


Fig. 4 — T-5 Miniature wedge base lamp.



## FILAMENTS



Fig. A — C-2F filament.



Fig. B — C-2V filament.

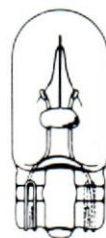


Fig. C — C-2R filament.



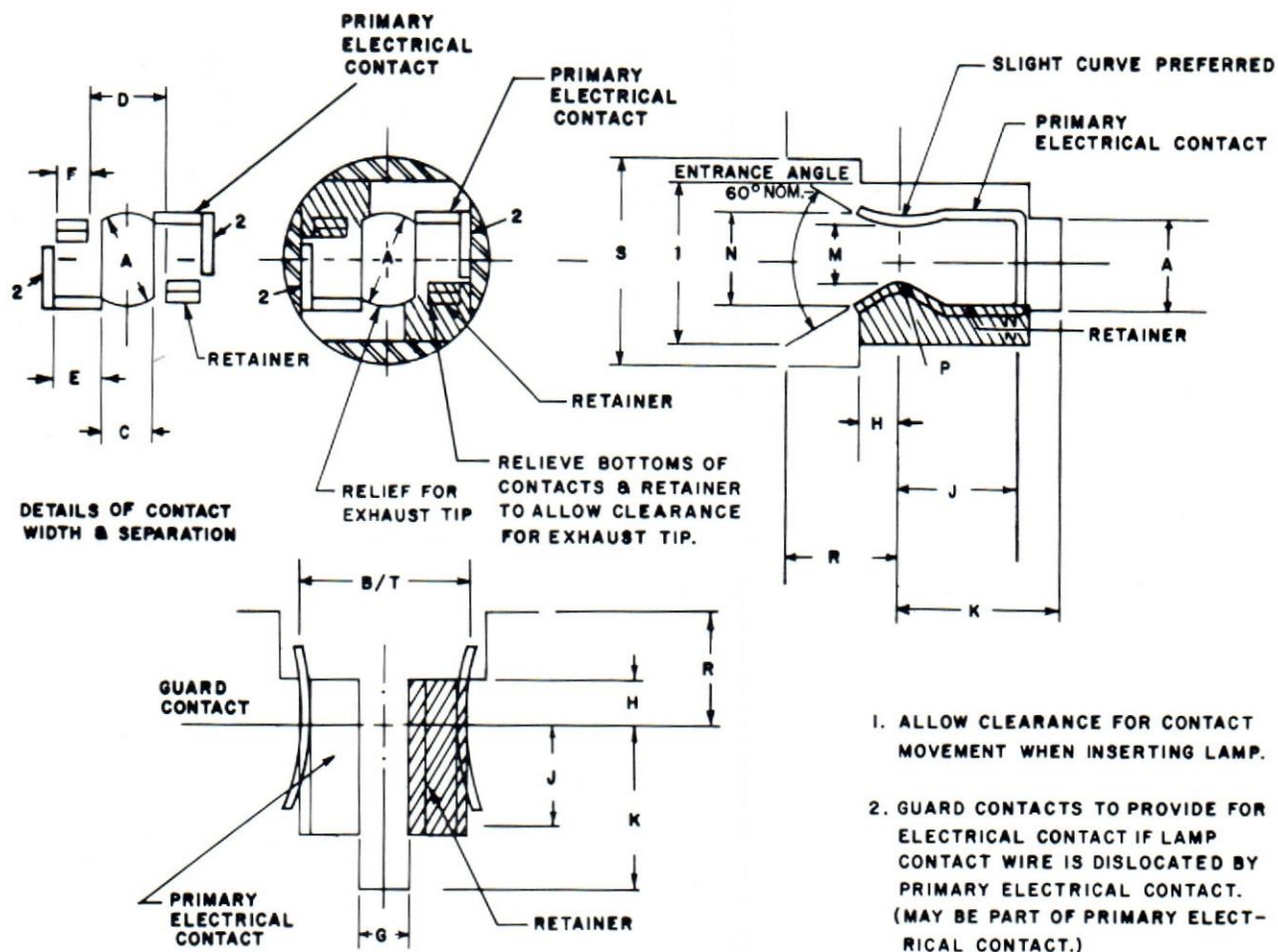
# Conventional Lamps You Can Replace by Designing For GE ■■I-Glass Wedge ■■se Lamps

Use GE wedge base lamp No.	Instead of conventional lamps No.	Use GE wedge base lamp No.	Instead of conventional lamps No.
11	1769	158	57, 57X, 1891, 1895
16	350	159	47, 1847
17	7341, 8361	161	53, 53X, 1445, 1892
18	394, 2174	168	1816
37	2162	192	1816
37E	2162	194	57, 57X, 1891, 1893, 1895
56	7335	259	44, 1866
70	57, 57X, 161, 194, 1891, 1893, 1895	400	1820
73	330, 336, 373, 382, 2182, 7382	464	313, 1864
73E	330, 336, 373, 383, 2182, 7382	558	All 12 Volt non-lens-end types.
74	330, 2162	656	1829
79	328, 337, 1768, 1784, 7328	657	757, 1829
84	380, 2179, 2180, 7380	658	756
85	387, 388, 2187, 7387	904	67, 68, 97, 214-2, 563, 1095, 1155, 1178, 1232, 1247
86	378, 379, 381, 2181, 7381	906	89, 90, 212, 212-1, 212-2, 562, 631
86E	378, 379, 381, 2181, 7381	912	93, 94, 104, 105, 211, 211-1, 211-2, 561, 1003, 1004
147	1888	921	1141, 1142, 1152, 1161, 1171

## APPLICATIONS

GE lamp No.	Primary	Examples/Suggestions	GE lamp No.	Primary	Examples/Suggestions
11 16 37 37E 56 70 73 73E 74	Instrument and Indicator/Radio	Clocks, timers, radios, toys, novelties, hobbies, automotive	192	Automotive instrument, indicator	Panel lighting, warning lights
17 18 56 79 84 85 86 86E	Indicator	Pushbutton switches, gage illumination, stereo indicators, aircraft legend, panels, televisions, timers	194	Automotive instrument, marker, indicator	Radios, televisions, appliances, electronic equipment
147 158	Automotive instrument, marker, indicator	Radios, televisions, appliances	259 400 464	Indicator	Pilot lights, telephones, timers, clocks, toys, appliances, novelties
159 161	Indicator	Coin machines, appliances, radios, televisions	558	Indicator	Automobile PRNDL illumination, cigar lighter, warning lights, radio dials, fiber-optic devices
168	Automotive instrument, marker, indicator	Radios, televisions, appliances	656 657 658	Indicator	Appliances, control panels, annunciators, clocks, radios, televisions
			904 906 912 921	Heavy-duty instrument, indicator, marker, area lighting	Automobiles, trucks, boats, tractors, RV's, appliances, pinball machines, vacuum cleaners, low-voltage lighting

## T-1¼ (6 mm) Subminiature Wedge Base Lamps



1. ALLOW CLEARANCE FOR CONTACT MOVEMENT WHEN INSERTING LAMP.
2. GUARD CONTACTS TO PROVIDE FOR ELECTRICAL CONTACT IF LAMP CONTACT WIRE IS DISLOCATED BY PRIMARY ELECTRICAL CONTACT. (MAY BE PART OF PRIMARY ELECTRICAL CONTACT.)

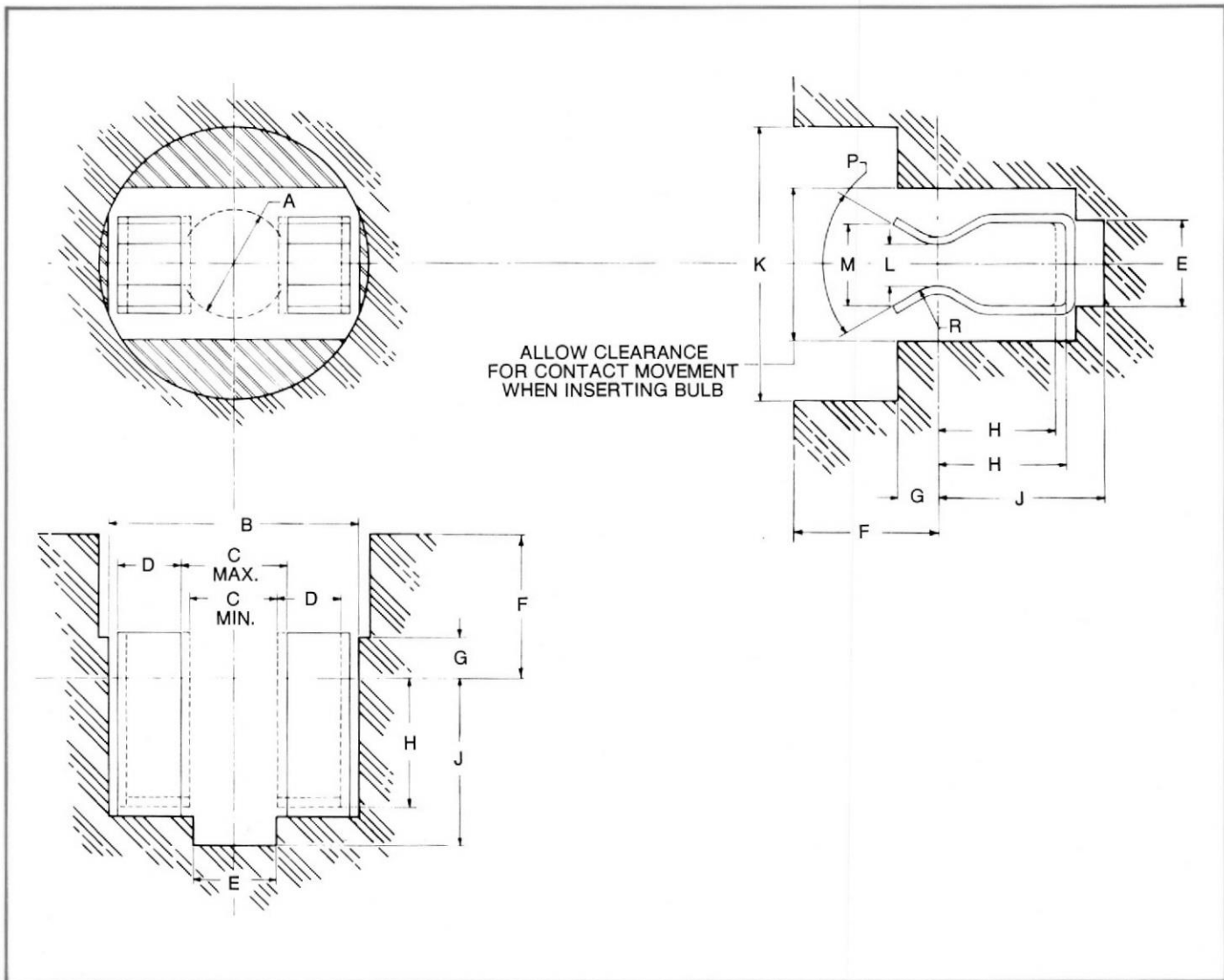
### SLASHED AREAS:

THE RETAINER MAY TAKE THE FORM OF SEPARATE METAL SPRING CLIPS OR BE AN INTEGRAL PART OF THE PLASTIC SOCKET BODY.

DIMENSION*	PURPOSE	DIMENSION*	PURPOSE
A 3.0 mm min. (0.12)	Clearance of cylindrical section of wedge and exhaust tip.	H 1.5 mm max. (0.06)	Bulb shoulder clearance.
B 5.1 mm min. (0.20)	Proper clearance for wedge width. If over about 5.3 mm, a wire entrapment feature should be provided to capture lamp contact wire in cases where the socket contacts force wires out of their normal position. Guard contacts or entrapment features may infringe in this area to provide more secure retention of wedge by the socket if they are flexible and do not interfere with lamp insertion. See T, below.	J 3.0 mm min. (0.12) 3.2 mm max. (0.13)	Insertion limit to ensure electrical contact even if lamp is bottomed out in socket. Unless some means is provided to limit bulb insertion over-travel, an unreliable retention condition may result.
C 1.85 mm min. (0.073) 2.10 mm max. (0.083)	Limits for contact separation to ensure proper electrical contact.	K 5.3 mm min. (0.21)	Bulb exhaust tip clearance.
D 2.4 mm min. (0.09) 2.9 mm max. (0.11)	Limits for retainer separation to ensure proper holding.	M 0.9 mm max. (0.04) 2.2 mm min. (0.09)	Contact position at rest (to supply contact pressure). Contact position when fully opened (for lamp entrance).
E 1.6 mm min. (0.06)	Min. contact width to ensure reliable electrical contact.	N 3.0 mm min. (0.12)	Lead-in entrance for bulb.
F 1.0 mm max. (0.04)	Max. retainer width. Avoid interference with guard contact.	P 1.0—1.3 mm R (0.04—0.05)	Recommended to provide stable retention.
G 2.1 mm min. (0.08)	Clearance for exhaust tip. Relieve bottoms of contacts and retainers to allow for exhaust tip clearance during insertion.	R 3.8 mm min. (0.15)	Min. bulb stabilizer height.
		S 5.8 mm max. (0.23)	Bulb stabilizer must accommodate bulb diameter range of 5.1 to 5.8 mm.
		T 4.9—5.6 mm (0.19—0.22)	Guard contacts must be functional within this range. Use of guard contacts is recommended for electrical reliability.

\*Values in parentheses are nearest equivalent inches.

# T-3¼ (10 mm) and T-5 (15 mm) Miniature Edge Base Lamps



## DIMENSION\*

- A 4.1 mm min. (0.16)  
 B 9.50 mm min. (0.374)  
 C 3.30–4.06 mm (0.130–0.160)  
 D 2.40 mm min. (0.095)  
 E 3.2 mm min. (0.13)  
 F 5.6–7.1 mm (0.22–0.28)  
 G 1.5 mm max. (0.06)  
 H 4.45–4.83 mm (0.175–0.190)

## PURPOSE

- Clearance for the 4.1 mm max. cylindrical glass section on wedge.  
 Clearance for wedge width. If over 9.65 mm, a side entrapment feature should be provided to capture lamp contact wires should the socket contacts or handling force them out of their normal position.  
 Clearance for cylindrical section of wedge. Also limits contact separation to ensure proper electrical contact between lamp and socket.  
 Min. contact width to ensure proper contact, considering tolerances listed in C, above.  
 Clearance for exhaust tip at bottom of socket.  
 Clearance and bulb neck support without interfering with bulb configurations larger than T-3¼.  
 Bulb shoulder clearance.  
 Insertion limit to ensure electrical contact even if lamp is bottomed

\*Values in parentheses are nearest equivalent inches.

## DIMENSION\*

- J 6.7 mm min. (0.26)  
 K 10.3 mm min. (0.40)  
 L 1.5 mm max. (0.06)  
 M 3.0 mm min. (0.12)  
 P 60° nom.  
 R 1.0–1.5 mm R (0.04–0.06)

## PURPOSE

- out in socket. Unless some means is provided to limit bulb insertion over-travel, an unreliable retention condition may result.  
 Exhaust tip clearance.  
 Max. bulb clearance. May be smaller than 10.3 mm if expansion features, such as fingers, are used to accommodate the max. bulb diameter of 10.3 mm.  
 Contact "at rest" spacing to provide adequate contact pressure on lamp wires. Some manufacturers specify that this dimension must not exceed 1.5 mm after the insertion of a 2.5 mm thick gage.  
 Adequate entrance target for mechanized insertion.  
 Entrance angle for insertion ease.  
 Proper "bridging" fit with the 0.8 mm radius notch in wedge. This type of fit gives optimum holding because it eliminates rocking and looseness.

# General Electric Miniature Lamp Products Department Sales and Distribution Centers

## SALES OFFICES (To Obtain Sales and Technical Information)

## DISTRIBUTION CENTERS (To Order Lamps and to Obtain Shipping Information, Local Warehouse Stocks maintained at these Points)

	Address	ZIP	Telephone
ANCHORAGE, ALASKA	517 West Northern Lights	99503	272-1211
ATLANTA, GA.	120 Ottley Drive, N.E.—P.O. Box 13469	30324	897-6250
BALTIMORE, MD.	1401 Parker Rd. Mail: P.O. Box 7427, Baltimore, Md.	21227	242-5700
BOSTON, MASS.	50 Industrial Place, Newton Upper Falls, Mass.	02164	332-6200
CHARLOTTE, N.C.	Mail: P.O. Box 2144	28201	376-6585
CHICAGO, ILL.	4333 Trans World Road, Schiller Park, Ill.	60176	671-6390
CINCINNATI, OHIO	49 Central Ave.	45202	559-3607
CLEVELAND, OHIO	1705 Noble Rd.—P.O. Box 2514	44112	266-4337
COLUMBUS, OHIO	800 Northwest Blvd.	43212	294-4115
DALLAS, TEXAS	6500 Cedar Springs Road	75235	358-5321
DENVER, COLO.	6501 Stapleton Dr., North	80216	320-3598
DETROIT, MICH.	15135 Hamilton Ave.	48203	956-0200
HONOLULU, HAWAII	Marine Finance Bldg., Room 413, 1109 Bethel St.	96813	537-3280
HOUSTON, TEXAS	5615 Lyubar Drive	77096	644-3264
INDIANAPOLIS, IND.	2511-O-2 East 46 St.	46205	547-5511
JACKSONVILLE, FLA.	4077 Woodcock Drive—Suite 222	32207	399-5566
N. KANSAS CITY, MO.	535 East 14th Ave.	64116	471-0123
LOS ANGELES, CA.	2747 S. Malt Ave.	90040	723-2541
MEMPHIS, TENN.	2021 S. Latham St.	38109	774-9045
MIAMI, FLA.	3655 N.W. 71st Street—P.O. Box 470857	33147	693-3811
MILWAUKEE, WIS.	8100 West Florist Ave., Mail: P.O. Box 299	53201	462-3860
MINNEAPOLIS, MINN.	8501 54th Avenue, No., New Hope, Minn.	55428	535-5151
NEWARK, N.J.	P.O. Box 439	07101	622-8000
NEW ORLEANS, LA.	Mail: Box 10236, Jefferson, La.	70181	733-9200
NEW YORK, N.Y.	1285 Boston Ave., Bldg. 26 ES, Bridgeport, Conn.	06602	334-1012
OAKLAND, CA.	999-98th Avenue, P.O. Box 24354	94623	436-9447
OKLAHOMA CITY, OKLA.	Executive Terrace Bldg., 2809 N.W. Expressway	73112	842-4028
PALO ALTO, CA.	1801 Page Mill Rd.—Suite 223	94303	493-0652
PHILADELPHIA, PA.	1000 Continental Rd.—P.O. Box 299, King of Prussia, Pa.	19406	688-5900
PITTSBURGH, PA.	575 Epsilon Dr.—P.O. Box 2801	15230	665-3764
PORTLAND, OREGON	2800 N.W. Nela Street	97210	221-5120
RICHMOND, VA.	2015 Staples Mill Rd.	23230	355-3289
ROCHESTER, N.Y.	120 Allen's Creek Rd.	14618	461-5900
SALT LAKE CITY, UTAH	6501 Stapleton Drive, N., Denver, Colorado	80216	320-3598
SEATTLE, WASH.	4930 Third Avenue South, Seattle, Wash., P.O. Box 3877	98124	292-6831
ST. LOUIS, MO.	1530 Fairview Ave.	63132	997-8420
TAMPA, FLA.	11101 N. 46th St.—P.O. Box 16626	33617	988-7351
UTICA, N.Y.	1900 Bleeker St.—P.O. Box 175	13501	733-0922

	Address	ZIP	Telephone
	4930 Third Avenue South, Seattle, Wash.	98134	763-2870
	120 Ottley Drive, N.E.—P.O. Box 13469	30324	897-6360
	1401 Parker Road, Arbutus, Md.	21227	242-5700
	50 Industrial Place, Newton Upper Falls, Mass.	02164	332-6200
	1001 Tuckaseegee Rd.	28208	376-6585
	4201 So. Pulaski Rd.	60632	254-6161
	49 Central Ave.	45202	559-3600
	1705 Noble Rd.	44112	266-4404
	Cleveland Distr. Ctr., 1705 Noble Rd., Cleveland Ohio	44112	266-4404
	6500 Cedar Springs Rd., Mail: P.O. Box 35425	75235	358-5321
	6501 Stapleton Dr., North	80216	320-3597
	15135 Hamilton Ave.	48203	956-0200
	Oakland Dist. Ctr., 999—98th Ave., Oakland, Calif.	94603	569-3422
	7402 Neuhaus Ave.—P.O. Box 12911	77017	644-3264
	Cincinnati Distr. Ctr., 49 Central Ave., Cincinnati, O.	45202	559-3600
	Tampa Distr. Ctr. 11101 N. 46 St., P.O. Box 16626	33617	988-7351
	Tampa, Fla.	33617	988-7351
	535 East 14th Ave.	64116	471-0123
	2747 S. Malt Ave.	90040	723-2541
	2021 S. Latham St.	38109	774-9045
	3655 N.W. 71st Street—P.O. Box 470857	33147	693-3811
	8100 West Florist Ave.—P.O. Box 299	53201	462-3860
	8501 54th Avenue, No., P.O. Box 1278	55440	535-5151
	P.O. Box 439, Newark, N.J.	07101	622-8000
	Mail: P.O. Box 10236, Jefferson, La.	70181	733-9200
	75-11 Woodhaven Blvd., Glendale, N.Y.	11227	896-6000
	999-98th Ave.—P.O. Box 24354	94623	436-9000
	Dallas Distr. Ctr., 6500 Cedar Springs Road, Dallas, Texas	75235	358-5321
	999-98th Ave., P.O. Box 24354, Oakland, Calif.	94623	436-9000
	1000 Continental Rd.—P.O. Box 299, King of Prussia, Pa.	19406	688-5900
	575 Epsilon Dr.—P.O. Box 2801	15230	665-3750
	2800 N.W. Nela Street	97210	221-5120
	Baltimore Distr. Ctr., 1401 Parker Rd., Arbutus, Md.	21227	242-5700
	Buffalo Distr. Ctr., 770 Riverview Blvd., Tonawanda, N.Y.	14150	874-5180
	Salt Lake City Distr. Ctr., 1775 West 1500 South, Salt Lake City, Utah	84104	972-5606
	4930 Third Avenue South, Seattle, Wash., P.O. Box 3877	98124	292-6831
	1530 Fairview Ave.	63132	997-8413
	11101 N. 46th St.—P.O. Box 16626, Tampa, Fla.	33617	988-7351
	Buffalo Distr. Ctr., 770 Riverview Blvd., Tonawanda, N.Y.	14150	874-5180

## IMPORTANT NOTICE

This catalog contains data which are correct as of March 1977. However, it is not possible to have at any given time all conceivable information with respect to a lamp or its performance. Through continuing research and testing, new data and information are constantly being obtained. This is particularly true of newer lamps. General Electric Company reserves the right to avail itself of new data to make changes at any time in any product in order to improve design and to supply the best possible product.

When any equipment design is contemplated, communicate with your General Electric lamp representative for the latest design information.

The data and recommendations in this catalog, as well as any additional data or recommendations our representatives may furnish, are for purposes of general information only. They should not be received as representations or warranties as to the suitability of any lamp for any particular application or use, or as to its performance in any particular use or conditions of use. Applications and conditions of use can be many and varied. These applications and conditions are beyond General Electric's control, and it cannot possibly have full knowledge with respect to all of them. It is up to the purchaser to make his own determination as to the suitability of a lamp product for his contemplated use, and to assume the responsibility for that determination.

The wedge base lamp devices and applications suggested herein may be covered by Patents of General Electric Company or others. Neither the suggestions herein nor the sale of wedge base lamp devices by General Electric Company conveys any license under patent claims covering combinations of wedge base lamp devices with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the wedge base lamp devices with other devices or elements by any purchasers of wedge base lamp devices or by others.

GENERAL ELECTRIC COMPANY  
MINIATURE LAMP PRODUCTS DEPARTMENT

GE  ELECTRIC