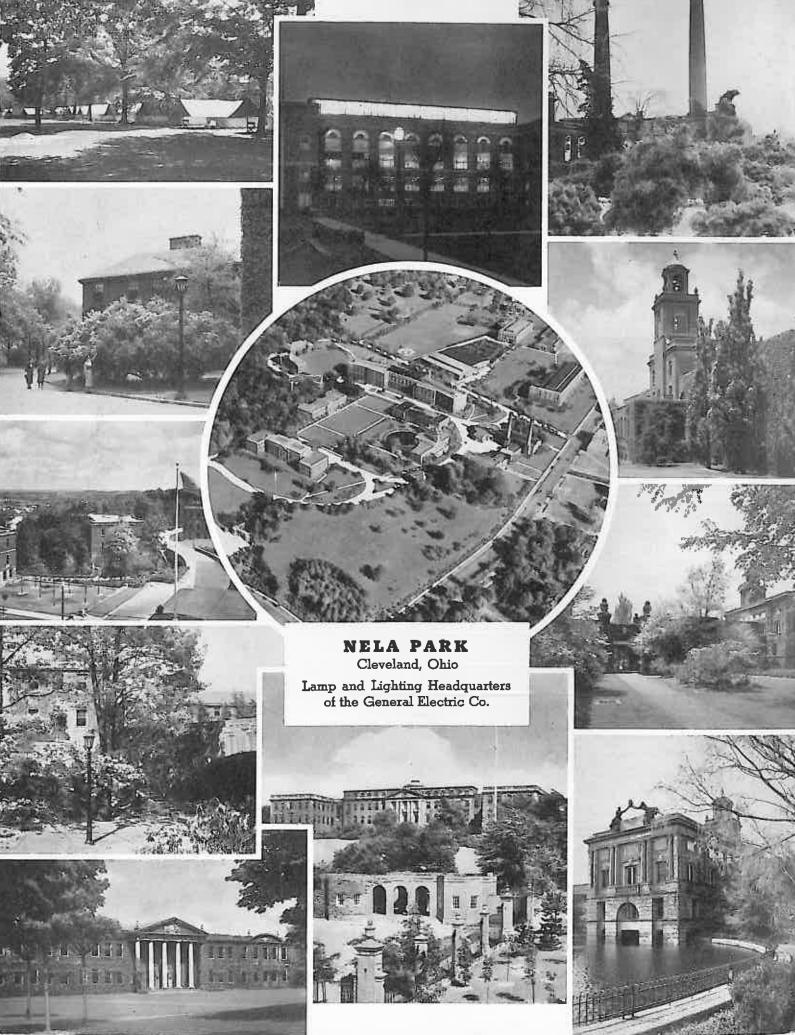


# GENERAL ELECTRIC LARGE MAZDA LAMPS

AND TYPE D LAMPS



## GENERAL ELECTRIC

CATALOG OF

## STANDARD LARGE MAZDA LAMPS

## AND TYPE D LAMPS

OCTOBER 1, 1937

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INCANDESCENT LAMP DEPARTMENT

GENERAL



ELECTRIC

NELA PARK - - - CLEVELAND, O.



## **QUALITY LAMPS**

Begin with
TRAINED MEN
and
APPLIED SCIENCE

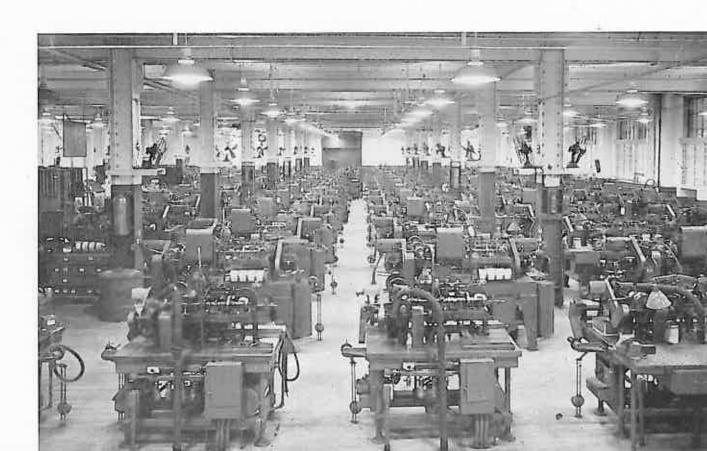
At the Cleveland Wire Works in these tanks you will find "atmosphere" for the inside of MAZDA lamps made by the General Electric Company in its lamp factories all over the country. Without this "atmosphere" our lamps would blacken and burn out prematurely. The filament, heart of the lamp, must burn to create light. The more brightly it burns, the more swiftly the filament evaporates, blackening the inside of the bulb; the more quickly it reduces itself in size toon, in other words, burns out. In MAZDA lamps made by the General Electric Company there is a specific gas which prevents premature bulb blackening and burnouts, regulates the burning of the filament so that the lamp operates always at the highest efficiency as it transforms current into light. These tanks, which will be tapped to fill smaller ones for shipment, are filled with argon gas. Its potency makes scientific accuracy necessary in using infinitesimal amounts of it. So vacuum gauges are used to measure the gas pressure in our lamps to within thirty-billionths of an atmosphere.





As marvelous in its way as what Jack Frost puts on our window panes, is the frosting on the inside of MAZDA lamps recommended for most general lighting purposes. This inside frosting diffuses the light and reduces glare and harsh shadows, yet absorbs practically none of the light output. Quite aside from its good influence on lighting, inside frosting has a good influence on the bulbs themselves, making them smoother and easier to clean than those frosted on the outside. The present tried and true method of frosting lamps on the inside by etching them with one acid, re-etching them with another, was discovered in 1926 by the MAZDA Research Laboratories. This discovery, so important in the history of lighting progress, is here seen in use in the Pitney Glass Works.

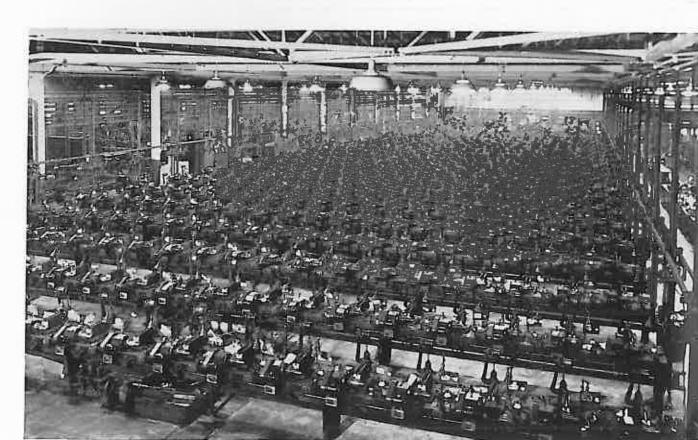
Glance over this floor in the Cleveland Welds Works, where lead-in wires are made for the more-than-five-hundred-million lamps we will manufacture this year. Here you see a well-regulated army of the reasons why our lamps today are much better, and cost less than half as much as they did ten years ago. Probably the lamp-making machinery developed by the General Electric Company during these years has contributed as much as anything to the high grade and low cost of our product. Machines that are miraculous in their ability and unerring accuracy have perfected the quality, increased production and generally cut the costs of manufacture of MAZDA lamps, so that the boon of good lighting is within reach of all.

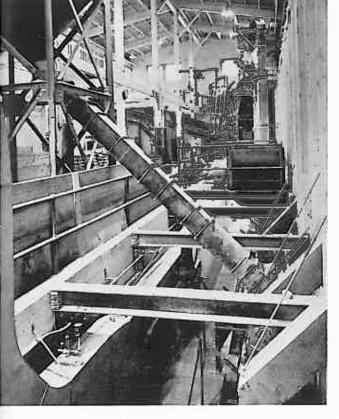




"Years of painstaking research—thousands of dollars worth of equipment—acres of floor space"—These are the phrases in the manufacture of MAZDA lamps that make people realize the great value of the incandescent lamp—make them appreciate the resources of the General Electric Company, which make possible such good light at such low cost. When we say "acres of floor space," it is no idle statement as you may see here. Gas needed in the manufacture of MAZDA lamps is conducted through these pipes into the Cleveland Wire Works which covers over four acres of floor space. This plant supplies our seven Large-Lamp factories and our three Miniature-Lamp factories with wire for lamp filaments. It employs 455 people and is only one of 21 plants in some way engaged in the manufacture of MAZDA lamps bearing the G-E monogram.

Tungsten, nearly as heavy as gold and the strongest metal known is grist for this mill—or rather these hundreds of mills in the Cleveland Wire Works. Really they are not mills but dies, and their business is not grinding, but stretching. They make a little go a long way too. A single pound of tungsten that will stretch into 40 miles of that unbelievably-fine, unbelievably-uniform wire from which filaments are made for the General Electric Company's MAZDA lamps. Wire for our regular household variety of lamp, so fine that the hairspring of a watch is coarse beside it. Wire so uniform that variations of six-millionths of an inch are not tolerated. Wire of such strength that it will not sag as the lamp is burned. Non-sag filament wire developed by the MAZDA Research Laboratories made a better MAZDA lamp. It is the "last word" in ductile tungsten, the discovery of which underlies the high efficiency and low cost of today's incandescent lamp.





Trace to its source one of the many elements in the price reduction in lamps, and you may find yourself at Pitney Glass Works. Here 400 people man the great machines that blow bulbs for all our lamps under the 150-watt size. For those who are particular in distinguishing between bulbs and lamps, the bulb is merely the glass "envelope" of the lamp. Bulbs for our industrial and street lighting lamps are made at our Niles Glass Works, Niles, Ohio.



Early in its career, the MAZDA lamp is subjected to rigorous tests and inspections. Even the empty bulb must sometimes pass as many as 15 tests before it is qualified to wear the G-E monogram. Here bulbs are shown at Pitney Glass Works, in Cleveland, undergoing rigid preliminaries, necessary to prove they are "in good shape" to progress to one of our lamp factories and in due course, pass the rest of the 480 tests required of a finished MAZDA lamp.



Over 300,000,000 "bubbles" the great machines at Pitney Glass Works will blow in 1937, if they stick to schedule. Perfect bulbs, too! Let these iron monsters blow too hot or too cold, and their bulbs will immediately tell the tale to eagle-eyed young ladies, just waiting to check up on them. They don't find flaws very often, but when they do—well that bulb is OUT. It simply doesn't count toward the 300,000,000 quota for 1937.

## THE SAFEST GUIDE IN BUYING LAMPS . . .

MAZDA lamps are made to specifications that are more rigid than any others ever set up for lamps, and the safest guide in buying is the trade-mark of a manufacturer whose history, achievements and reputation are outstanding.



## CHEAP LIGHT

Demands

## QUALITY LAMPS

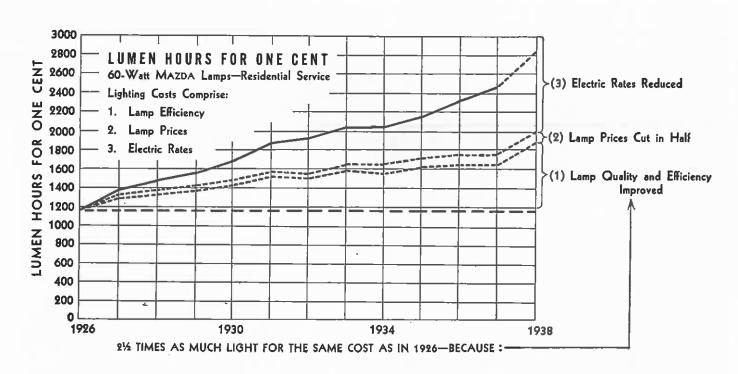
Operated at

## **Proper Voltage**

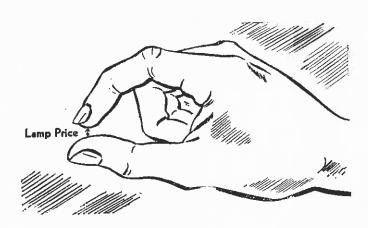
Light Conditioning provides the right amount and the right kind of lighting for seeing, comfort and beauty, wherever eyes are used in work or play . . . in homes, factories, schools, stores, offices and on highways.

Everybody who buys lamps does so for the sole purpose of getting light. Buying light bulbs is somewhat like buying gas for the car—the actual cost, however, is expressed not in "miles per gallon" but in "Lumen hours

for one cent." This takes into account not only (1) the cost of lamps, and (2) the cost of current, but (3)—the most important—how efficiently the lamps convert electrical energy into light. Edison's early lamps produced light, but at present prices and current rates the cost of light using these inefficient lamps would be over five times what it is with modern MAZDA lamps. Lamp quality is the most important factor in lowering the cost of light.



# RELATIVE IMPORTANCE OF LAMP PRICE AND LAMP EFFICIENCY ON COST OF LIGHT

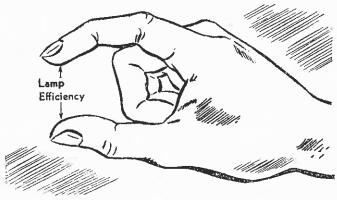


The most economical lamp may not be the lowest in price nor live the longest, but is the one that produces light at the lowest over-all cost. The mark "MAZDA" on a lamp is the mark of a research service, and it is your guarantee of the best lamp it is possible for modern science and technology to make.

To make certain that every factory making MAZDA lamps maintains the high standards of quality set for them, the Electrical Testing Laboratories, the foremost independent electrical testing organization in the country, have for years been employed to make continuous inspections and tests of each factory's output of MAZDA lamps. This audit of manufacture, a function of MAZDA Service, is carried on by inspectors stationed in each MAZDA lamp factory, and every package of MAZDA lamps, after it has passed the factory's rigid quality tests, is subject to their sampling and inspection before it may be shipped.

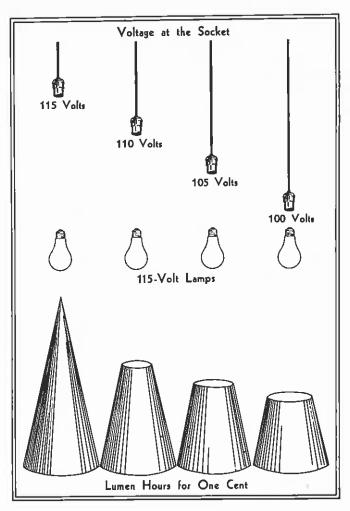
# AT PROPER VOLTAGE— Deliver All the Light You Pay For

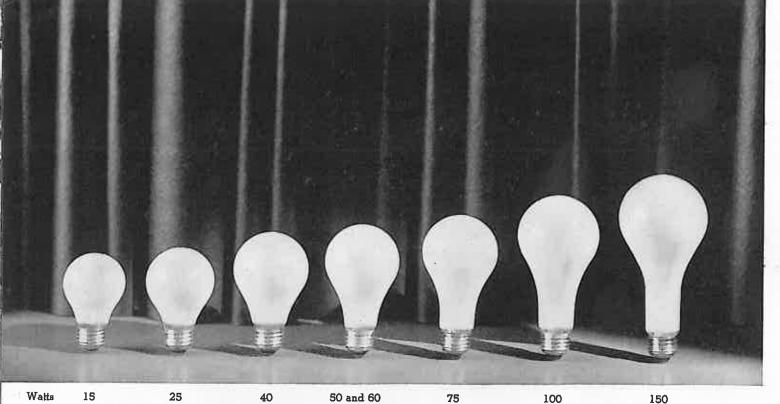
When you burn lamps under their rated voltage, you waste useful electrical energy. Undervoltage burning has the same effect as a reduction in the efficiency of a lamp. Years of patient research have been spent to raise the efficiency of MAZDA lamps to their present high levels, and any lamp user who knowingly burns lamps under-



voltage sacrifices this gain in efficiency and raises his own cost of light.

Undervoltage burning makes you pay for light you do not get. Make certain you get all the light you pay for by using lamps of the proper voltage.





## GENERAL LIGHTING SERVICE—110, 115 and 120 Volts

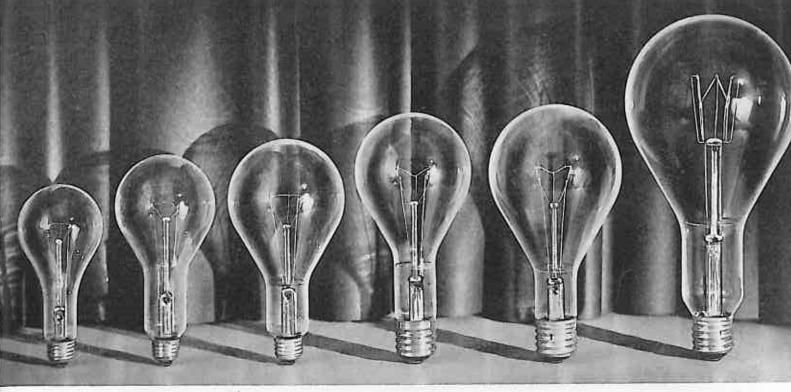
**GENERAL LIGHTING SERVICE** lamps fulfill 65 per cent of the lamp requirements for ordinary uses in homes, stores, offices, schools, factories and the like. These lamps will operate in any position of burning, but the light maintenance, particularly in lamps of higher wattage sizes, is best when lamps are burned vertically base up. The data on light (lumen) maintenance given in the technical summary apply to this burning position only.

**INSIDE-FROSTED FINISH**—The light absorbed by inside frosting is so negligible (the lumen output is rated the same as for clear lamps) that these lamps are recommended for most general lighting purposes to provide added diffusion and, in the case of indirect lighting equipment, to eliminate striations and harsh shadow effects.

**CLEAR FINISH**—Clear bulb lamps are satisfactory for use in adequately shielded reflectors or diffusing equipment which protect the eyes from the irritating effects and inefficiency which glare produces. They are used also in floodlighting and miscellaneous special applications requiring reasonably accurate control of light.

white bowl lamps is approximately 3 per cent less than that of clear or inside-frosted lamps. They should be burned base up only and are recommended for use in open-type equipment such as the RLM Dome reflector to improve the quality of illumination by minimizing direct glare, reflected glare and deep shadows. These factors, as well as adequate amount of light, determine the effectiveness of the illumination.

Watte	Bulb	Approximate Lumens	Screw Base	Standard Package	List Price
				Quantity	Inside Frosted
15 25 40 50	A-17 A-19 A-19 A-21	141 260 444 650	Medium Medium Medium Medium	120 120 120 120 120	\$0.15 .15 .15 .15
60 75 100 150	A-21 A-21 A-23 A-25	828 1073 1560 2580	Medium Medium Medium Medium	120 60 60 60	.15 ,20 .20 .25



150

200

300 (Medium) 300 (Mogul)

500

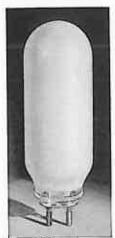
750, 1000 and 1500

## GENERAL LIGHTING SERVICE-110, 115 and 120 Volts

**OUTDOOR SERVICE**—Lamps of 40 watts and above are gas-filled and because of the bulb temperature should be protected from rain and snow when used out-of-doors. See page 12 for outdoor exposed applications.

**VIBRATION AND ROUGH SERVICE**—Where lamps are subjected to vibration and shocks, attention should be given to the use of vibration and shockabsorbing devices, or to a type of system or better location of lighting equipment to avoid these conditions. Where such conditions are inherent, lamps of special design for both vibration and rough service are available and are listed on page 17.

BIPOST BASE LAMPS—This type represents a radically new lamp for general lighting service. Made of hard glass in a small bulb, it is rugged and resistant to bulb failure resulting from contact with rain or snow. It permits effective light control by reflector equipment of smaller size. The interior construction incorporates a gauze screen which collects filament evaporation normally deposited on the inside of the bulb, thus giving exceptionally high maintenance of light output throughout life.

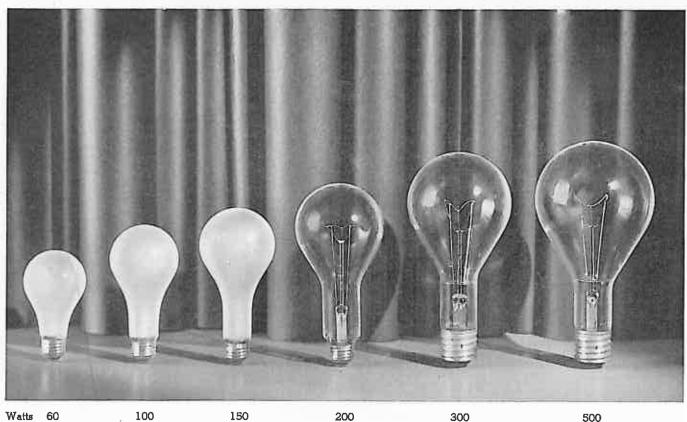


1000-watt Bipost

	Watts	Bulb	Approximate	Screw Base	Standard Package	List Price			
-	vv atts	ing build	Lumens Screw Base		Quantity	Clear	Inside Frosted	White Bowl	
	150 200 300	A-25 PS-30 PS-35	2580 3640 5910	Medium Medium Medium	60 24 24	\$0.25 .35 .60	\$0.35 .65	\$0.30 .40 .65	
	300 500 750	PS-35 PS-40 PS-52	5760 10050 14550	Mogul Mogul Mogul	24 12 6	.75 1.40 3.75	.80 1.50	.80 1.50 3.95	
	1000 1000 1500	T-24 PS-52 PS-52	19600 20700 32550	Medium Bipost Mogul Mogul	6 6	4.00 5.75	3.75	4.20 5.95	

**SPORTS LIGHTING SERVICE**—For lighting baseball, football and softball fields and other similar large recreational areas employing 1000 and 1500-watt lamps, it is recommended that circuit voltage be adjusted to operate these standard lamps 10% overvoltage. While the life will be reduced to about 300 hours,

a gain of 35% light with only a 16% increase in wattage is obtained. This permits lower initial equipment investment and makes for high operating efficiency for sports lighting installations where the system is in use only 100 or 200 hours each season.



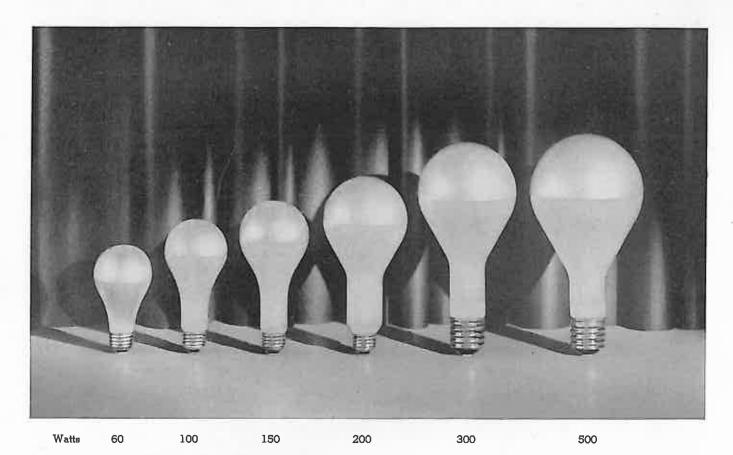
## MAZDA DAYLIGHT LAMPS—110, 115 and 120 Volts

■ MAZDA Daylight lamps are supplied with blue bulbs and emit a whiter light which is a partial step toward natural daylight. In many instances of color rendition their use gives sufficient color correction to be of considerable advantage over the warmer tones of unmodified light. For example, they are used in many industrial applications, particularly in local lighting units for sewing machines and for special assembly and inspection processes. Again, the light blends well with natural daylight; in fact, in many cases it is about the same color as the day-

light which one gets indoors, taking into account the prevalence of warm tones in window shades, walls and hangings. For this reason the use of daylight lamps in offices, stores and other commercial interiors will be found to correct an unsatisfactory mixture of ordinary artificial light and inadequate daylight.

The next larger size of lamp will be required to produce approximately the same illumination value as computed for a clear or inside-frosted lamp of a given size. MAZDA Daylight lamps are used in all common types of equipment.

Watta	Bulb	Approx.	Screw Base	Standard Package	Lie	Price
		Lumens		Quantity	Clear	Inside Frosted
60	A-21	500	Medium	120	* * * * *	\$0.30
100	A-23	1010	Medium	60		.35
150	A-25	1680	Medium	60	\$0.50	.55
200	PS-30	2270	Medium	24	.80	.85
300	PS-35	3740	Mogul	24	1.20	1.30
500	PS-40	6530	Mogul	12	2.15	2.30



## SILVERED BOWL MAZDA LAMPS—110, 115 and 120 Volts

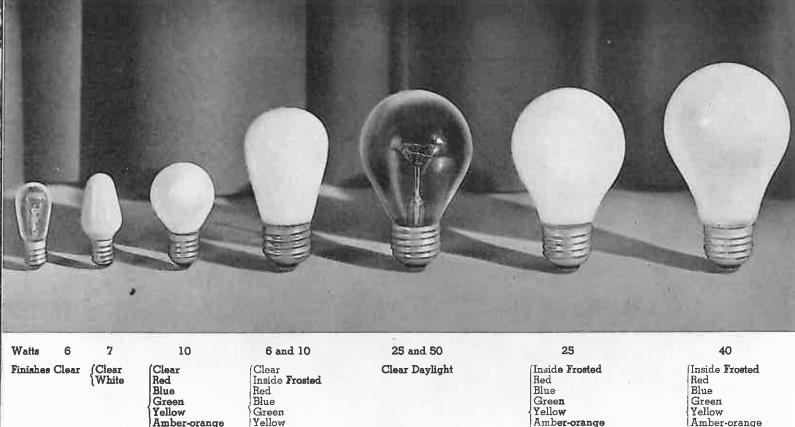
■ Silvered bowl lamps have a permanent coating of mirror silver on the bowl. This coating which is an integral part of the lamp, shields the brilliant filament and forms a highly efficient reflecting surface. This reflecting surface does not dull or tarnish throughout the life of the lamp.

It is intended that silvered bowl lamps be used in a base up position, the silvering serving as a highly efficient indirect reflector. Silvered bowl lamps are applicable to all types of indirect equipment; also for direct lighting reflectors and shades to produce high quality illumination. These lamps are standardized with inside-frosted bulbs because of the desirability of eliminating streaks, striations, and shadows of fixture supports.

Silvered bowl lamps of 150 watts and above should be used only in porcelain sockets and in fixtures so designed that the temperatures of the lamp and fixture do not exceed limits for satisfactory operation. Such precautionary measures should be applied to all high wattage lamps, but the heating effect is more pronounced with silvered bowl lamps because the silvering redirects the heat toward the base and socket assembly.

		Screw	Standard	List Price
Watte	Bulb	Base	Package Quantity	Inside-Frosted Silvered Bowl
60	A-21	Medium	120	\$0.45
100	A-23	Medium	60	.60
150	A-25	Medium	60	.70
200	PS-30	Medium	24	.95
300	PS-35	Mogul	24	1.45
500	PS-40	Mogul	12	2.25

The light output is approximately 7% less than the unprocessed lamp.



# CLEAR, INSIDE COLORED, TINTED AND FROSTED MAZDA LAMPS—110, 115 and 120 Volts

#### —FOR SIGN AND DECORATIVE LIGHTING

Flamelint

Ivory Old Rose

■ These lamps are suitable for outdoor exposed lamp signs and for colored festoons, and similar decorative lighting. For enclosed lamp signs and luminous architectural displays where lamps are protected from rain and snow, the full range of general service lamps (pages 8 and 9) is applicable.

Ämber-oran**ge** 

Old Rose

Flametint

White

The 7-watt lamp was designed specifically to fit into small plug-in receptacles to be used as night lights in homes.

Inside colored lamps find their most logical use in exposed lamp signs and colorful displays where the lamps themselves are visible and form the pattern of the display. Where color effects of lighting are desired from concealed lamps as in color-circuits in coves, luminous panels, and the like, color may be incorporated in the translucent elements themselves or produced by natural colored or coated glass bulbs, or by the use of color accessories such as color hoods.

Flametint

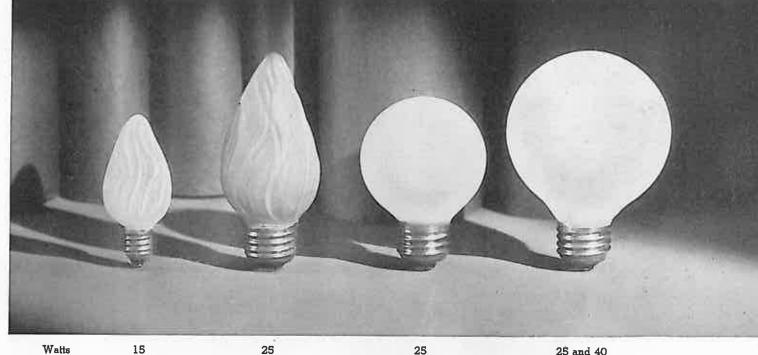
Ivory Old Rose

	1			Sid.		List Price†	
Watts	Bulb	Standard Bulb Finishes	Screw Base	Pkg. Qty.	Clear	Inside Frosted	Inside Colored
6	S-6	Clear	*Candelabra	120	\$0.15		
6 ‡7 10	S-14 C-7	Clear, <b>Inside Frosted, Red, Blue, Green, Yellow,</b> Amber-orange, <b>and</b> Old <b>Rose</b> Clear, White	Medium *Candelabra	120 120	.15 .10	\$0.15	\$0.20 .10
10	S-11	Clear, Red, Blue, Green, Yellow, Amber-orange, Flametint, and White	Intermediate	120	.15		.20
10	S-14	Clear, <b>Inside</b> Frosted, <b>Red</b> , Blue, <b>Green, Yellow,</b> Amber-orange, <b>and</b> Old Rose	Medium	120	.15	.15	.20
25 25	A-19 A-19	Inside Frosted, Red, Blue, Green, Yellow, Amber- orange, Flametint, Ivory, and Old Rose Clear Daylight	Medium Medium	120 120	.30	.15	.20
40	A-19 A-21	Inside Frosted, Red, Blue, Green, Yellow, Amber-	Medidin	120	.30		
50	A-19	orange, Flametint, Ivory, and Old Rose Clear Daylight	Medium Medium	120 120	.35	.18	.23

<sup>†</sup> These prices apply only to the manufacturer's standard inside coloring.

\* Candelabra base lamps not recommended for outdoor service.

<sup>‡</sup> Nominal watts. 110-125 volts (design volts 118).



Finishes

(White Ivory Flametint 25

(White Ivory Flametint 25

White Ivory Flamelint

White Ivory Flametint

## **OUTSIDE COATED FLAME SHAPE AND** ROUND BULB MAZDA LAMPS—110, 115 and 120 Volts

## -FOR DECORATIVE LUMINAIRES

■ These lamps are adapted to many decorative and ornamental fixtures used in homes, clubs, lobbies, foyers and public buildings, where the bulb

shape is related to the artistic design of the luminaire. These lamps are not recommended for outdoor use.

Watte	Bulb	Standard Bulb Finishes	Screw Base	Standard Package Quantity	List Price
15	F-10	White, Ivory, and Flametint	Candelabra	60	\$0.25
25	F-15	White, Ivory, and Flametint	Medium	120	.15
25	G-18½	White, Ivory, and Flametint	Medium	120	.30
25	G-25	White, Ivory, and Flametint	Medium	60	.35
40	G-25	White, Ivory, and Flametint	Medium	60	.35

<sup>†</sup> These prices apply only to the manufacturer's standard outside coating.

#### NATURAL COLORED LAMPS

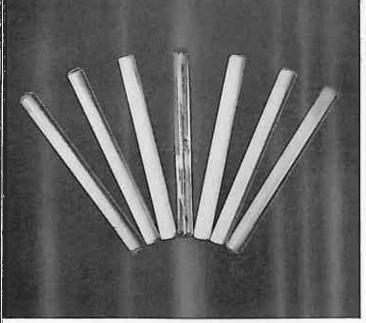
The four lamps in natural colored clear glass bulbs listed below cover a large percentage of present demands for natural colored lamps. The prices shown are for the manufacturer's standard colored glass only.

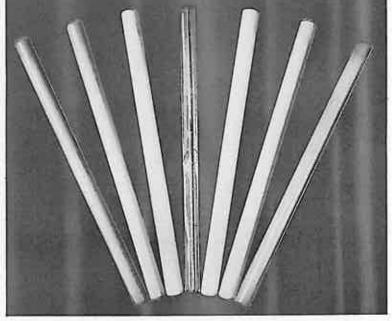
Watts	Bulb	Standard Colors Available	List Pric	•
	200	Proudure Colors Wanternie	Amber, Blue, and Green Ruby	
10	S-14	*Ruby, *Amber, Green, and Blue†	\$0.40	\$0.50
25	Ā-19	*Ruby, *Amber, Green, and Blue†	.40	.50
40	A-21	*Ruby, *Amber, Green, and Blue†	.40	.50
§60	A-21	*Ruby, *Amber, Green, and Blue†	.45	.55

<sup>\*</sup> Natural ruby and natural amber lamps are regularly furnished in the light shade. Dark ruby and dark amber lamps used in photographic work will be furnished, only when definitely specified, at the same price.

<sup>†</sup> Does not include daylight blue or photographic blue.

I This lamp not to be burned in enclosing globe.





Watts 40 30 and 60 Finishes: Clear, Inside Frosted, White, Straw, Orange, Moonlight Blue, Emerald, Surprise Pink

## MAZDA LUMILINE LAMPS—110, 115 and 120 Volts WITH DISC BASES

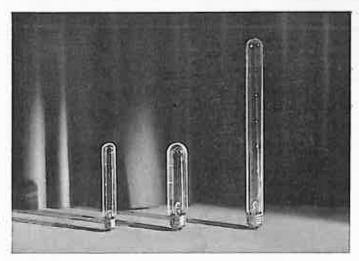
■ Instead of the conventional screw base and the usual method of mounting the filament, the Lumiline lamp has a contact cap at each end, with the filament disposed along the axis of the bulb for almost the entire length of the lamp.

Specially designed sockets or "lamp holders" of small dimensions make possible the use of lumiline lamps to form continuous lines of clear or colored light of low brightness. The lamps may be used either exposed or in narrow trough reflectors. Their application is ideally suited to modern decorative concepts for built-in illumination or applied decoration where space limitation is a factor; for lighted displays, niches, small coves, signs, mirrors, paintings, luminous panels, and the like.

The outside white and colored finishes are not recommended for outdoor service when exposed to moisture and other detrimental weather conditions.

7		Average		Standard	List Price	
Watts	Standard Bulb Finishes	Over-all Length, Inches	Bage	Package Quantity	Clear	Inside Frosted, Outside White and Colored
30		1734	Disc	24	\$0.95	\$1.05
40	T-8 Clear, Inside Frosted, White, Straw, Orange, Moonlight Blue, Emerald, and Surprise Pink	1134	Disc	24	.85	.95
60	problingit bite, Emeraid, and Surprise Fink	173/4	Disc	24	.95	1.05

## TUBULAR BULB MAZDA LAMPS—110, 115 and 120 Volts



Watts 25 25 40

#### WITH CONVENTIONAL SCREW BASE

■ Low wattage tubular bulb lamps are available for use in showcase lighting, in shallow depth displays, and in small trough-type reflectors.

The growing demand for these lamps and other tubular lamps has been occasioned by the greater appreciation by designers and lighting users of lighted displays, luminous elements and new luminous architectural forms.

Watte	Bulb	Screw Base	Std. Pkg. Oty.	List Price
25	T-61/2 Clear	Intermediate	60	\$0.35
25	T-10 Clear	Medium	60	.25
40	T-8 Clear	Medium	24	.90

# MAZDA THREE-LITE LAMPS

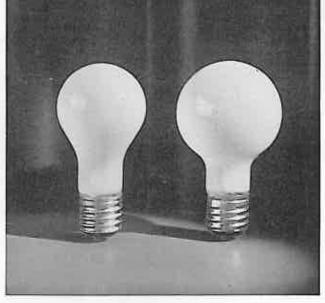
110, 115 and 120 Volts

■ MAZDA Three-Lite lamps, with two separate filaments in a single bulb, have introduced a new flexibility in lighting, since each filament of different wattage may be lighted separately or in combination with the other to produce three levels of illumination.

Thus with a single lamp, the user can adjust the illumination to suit the needs—the lower wattage for decorative and casual use, an intermediate step, and up to full brilliancy for full utility where seeing requirements dictate higher levels of illumination.

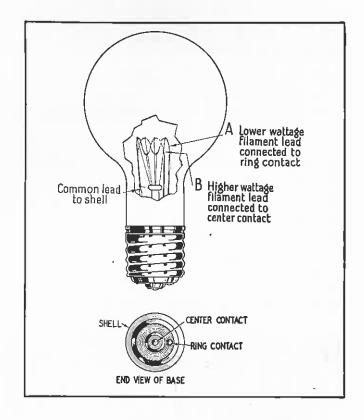
These lamps are particularly applicable to the newer type study and reading lamps and to indirect and semi-indirect floor lamps. The 100–200–300-watt size is designed for base-down burning and is adaptable to wall urns and any use where lamps are normally operated in base-down position. The 50–100–150-watt lamp is designed to burn in any position.

The lamps are inside frosted to assure complete diffusion and to avoid uneven light streaks and harsh lines of cutoff on ceiling and sidewalls when used in indirect portables and wall urns.

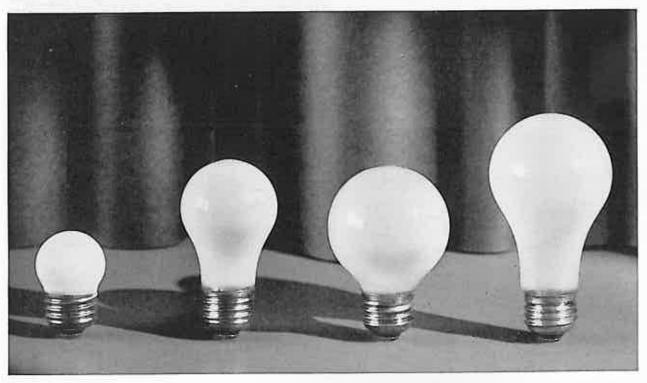


Watts 50-100-150

100-200-300



Watte	Bulb	Approximate Lumens	Base	Standard Package Quantity	List Price Inside Frosted
50–100–150	PS-25	50-Watt, 525 100-Watt, 1380 150-Watt, 1905	3-Contact Mogul	60	\$0.50
100-200-300	G-30	100-Watt, 1330 200-Watt, 3320 300-Watt, 4650	3-Contact Mogul	24	.65



Watts 7½

15

30

60

## GENERAL LIGHTING SERVICE

TYPE D LAMPS—110, 115 and 120 Volts Only

■ Type D lamps are supplied to meet a demand for a ten cent lamp largely for use in the home. They are high quality lamps of proven efficiency and performance and are manufactured with extreme care and of good materials, but are not subjected to as rigid inspection for defects in appearance as MAZDA lamps.

These lamps are shipped only in packages of 60 lamps of the same wattage, voltage and finish, and lamps of different wattage, voltage and finish may not

be combined to make a standard package except that 30-watt, G-19 lamps of different colors (but not inside frosted) may be combined to make a standard package, provided the quantity of lamps of any one color is a multiple of six. They may not be combined with large MAZDA lamps to make up a standard package quantity.

The outside coated white and colored finishes will not withstand outdoor use.

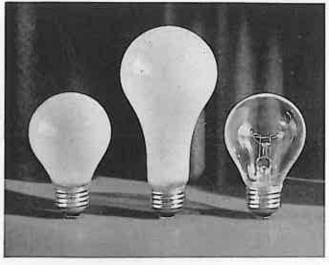
Watts	Bulb	Screw Base	Standard Package Quantity	List Price
7½	G-11 Outside Coated White or Red	Medium	60	\$0.10
15	A-15 Inside Frosted	Medium	60	.10
30	G-19 Inside Frosted or Outside Coated in Red, Blue, Green, Amber-orange, Rose, White, Ivory, and Flametint	Medium	60	.10
60	A-19 Inside Frosted	Medium	60	.10

## VIBRATION AND ROUGH SERVICE—110, 115 and 120 Volts

These lamps are not recommended for general lighting service as they are more expensive and give less light than the corresponding general service lamps.

Rough Service—This type is for use where the lamp is subjected to severe shock and bumps such as with extension cords in garages and similar applications. It is not suitable for use under vibration conditions.

Vibration Service—This lamp is especially designed to withstand high-frequency vibration such as produced by high-speed machinery. It is not recommended for horizontal burning.



Watts	50	100
	Rough Service	Rough Se

ervice

50 Vibration Service

Watts	Bulb	Screw Base	Std. Pkg. Qty.	List Price
	ROUGH	SERVICE		
50	A-19 Inside Frosted	Medium	120	\$0.30
100	A-23 Inside Frosted	Medium	60	.45
	VIBRATIO	N SERVICE		
50	P-19 Clear	Medium	120	.25

## COUNTRY HOME SERVICE—28-32 Volts

■ These lamps are designed for operation on batterygenerator sets as used on farms and in other places where central station service is not available. The lamps are the same in appearance as the lamps for General Lighting service. Orders should specify "Country Home-28-32 volts" to distinguish them from trainlighting lamps. The prices apply only to lamps which are designed for an average voltage as determined by the manufacturer, suitable for operation on 28-32-volt circuits, and do not apply to individual voltages within this range.

Watts	Bulb Inside Frosted	Screw Base	Std. Pkg. Qty.	List Price
15	A-17	Medium	120	\$0.23
25	A-19	Medium	120	.23
50	. Ä-21	Medium	120	.25
100	Ā-23	Medium	60	.38
			Î	

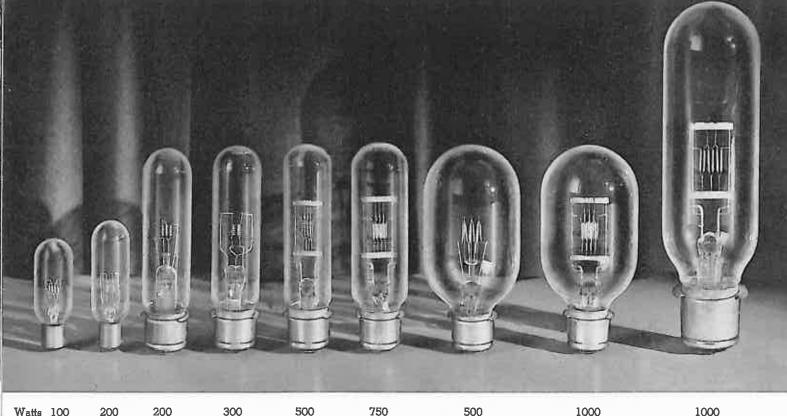
## HIGH VOLTAGE SERVICE-220, 230, 240, 250 and 260 Volts

■ These lamps, which are less rugged and less efficient than 110-120-volt lamps, are made available for use in the few locations where only the higher voltage is available.

These lamps will operate in any position of burning, but the lumen maintenance, particularly in lamps of higher wattage sizes, is best when burned vertically base up. The data on lumen maintenance given in the technical summary apply to this burning position only.

		Approx. Screw Std		Std.		List Price	
Watts	Bulb	Lumens	Base	Pkg. Qty.	Clear	Inside Frosted	While Bowl
25	A-19	215	Medium	120		\$0.26	
†50	A-21	475	Medium	120		.26	,
100	A-23	1230	Medium	60		.38	
200	PS-30	2940	Medium	24	\$0.85	.90	\$0.90
300	PS-35	4740	Mogul	24	1.25	1.35	1.35
500	PS-40	8600	Mogul	12	2.15	2.30	
750	PS-52	13500	Mogul	6	4.25		
1000	PS-52	19400	Mogul	6	4.75		

<sup>†</sup> This lamp in 275 and 300 volls for mine lighting service can be obtained at a list price of 40 cents.



Watts 100 200 200 300 500 750 500 1000

## MOTION PICTURE AND STEREOPTICON PROJECTION SERVICE—100, 105, 110, 115 and 120 Volts

MAZDA projection lamps are characterized by extreme concentration of light source, made possible by a highly developed technique in the forming, treating, and mounting of filaments; by bulbs that withstand high temperatures, thus making possible very small bulb volume for a given wattage; and by accuracy in placement of the light source.

The lamps of 100-volt rating are of special interest. With only a small rheostat and an inexpensive voltmeter on the projector it is possible to adjust the voltage exactly. Thus satisfactory lamp performance is assured with full advantage of the high output of light from a lamp of comparatively short life rating.

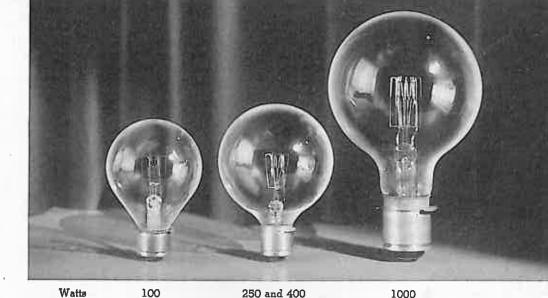
Walls	Bulb	Base	Filement Form	Rated Average Laboratory Life, Hours	‡Light Center Length, Inches	Slandard Package Quantity	List Price Clear
100	T-8	S. C. Bay. Cand.	Monoplane	50	13/8	24	\$1.00
¶200	T-8	S. C. Bay. Cand.	Monoplane	25	13/8	24	1.50
*200	T-10	Medium Prefocus	Monoplane	50	236	24	2.20
¶300	T-10	Medium Prefocus	Monoplane	25	23	24	3.10
¶500	T-10	Medium Prefocus	Biplane	25	23	24	4.90
¶750	T-12	Medium Prefocus	Biplane	25	216	24	5.70
*500	T-20 (short)	Medium Prefocus	Monoplane	50	210	6	2.75
¶1000	T-20 (short)	Medium Prefocus	Biplane	25	216	6	6.55
†1000	T-20 (long)	Mogul Prefocus	Monoplane	50	3 7	6	6.30

These lamps are designed for operation in the vertical position base down but can be burned within 25 degrees of this position without materially affecting their performance

These lamps are designed for use with air blast cooling. They should be used only in equipment designed to give adequate cooling; usage otherwise may result in unsatisfactory lamp performance and damage to the equipment for which the lamp manufacturer cannot assume responsibility.

Medium screw base can be supplied with a light center length of 3 inches at the same price. † Mogul screw base can be supplied with a light center length of 4% inches at the same price.

<sup>‡</sup> Light center length for prefocus base is distance from center of light source to top of base fin; for bayonet base to top of base pins; for screw base to extreme end of base.



# SPOTLIGHT SERVICE

110, 115 and 120 Volts

■ Spotlights with prefocus sockets and prefocus base lamps require no focusing adjustments for lamp or spherical mirror. This facilitates operation and assures better light control. A properly adjusted mirror adds up to 50 per cent to the light in the beam.

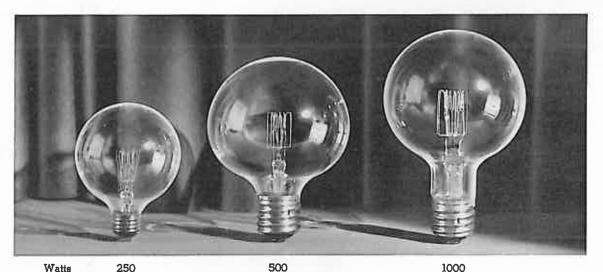
For narrow beams of high intensity, the lamps for projection service listed on page 18 and on page 20 for "modeling" service in studios are applicable.

	100	

Walts	Bulb	Base	Light Center Length, Inches	Std. Pkg. Qty.	List Price Clear
*100	P-25	Medium Prefocus	2,5	60	\$1.00
*250	G-30	Medium Prefocus	216	24	1.65
*400	G-30	Medium Prefocus	23	24	2.80
†1000	G-40	Mogul Prefocus	315	12	6.65

<sup>\*</sup> Medium screw base lamps, with a light center length of 3 inches, can be supplied at 15 cents less than price shown.

<sup>†</sup> Mogul screw base lamp, with light center length of  $4\frac{1}{4}$  or  $5\frac{1}{4}$  inches, can be supplied at \$6.25. Orders should specify light center length.

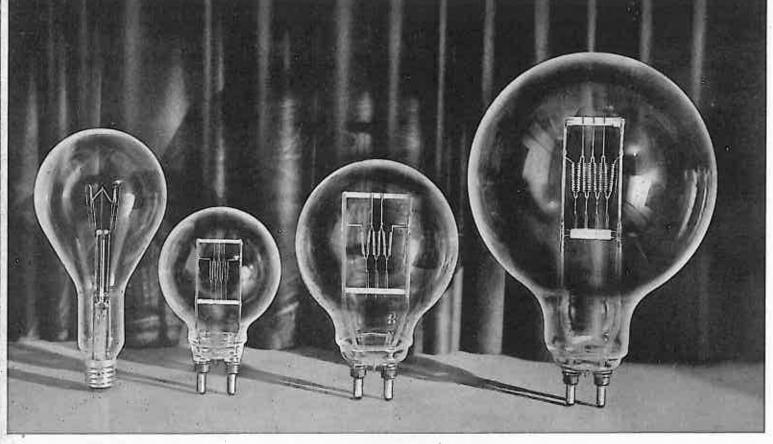


# FLOODLIGHTING SERVICE—110, 115 and 120 Volts

■ These lamps are made with the filament concentrated into a small space for use in floodlighting equipment designed to give a narrow beam of light which can be projected a relatively long distance. Where it is not necessary to have a closely controlled beam it is usually found more desirable to use the general service lamps listed on page 9 in equipment designed to accommodate them.

The 250-watt, G-30 bulb and the 500-watt, G-40 bulb lamps may be burned in any position except within 45° of vertical base up. The 1000-watt, G-40 bulb lamp may be burned in any position from vertical base down to horizontal.

Watts	Bulb	Screw Base	Light Center Length, Inches	Sid. Pkg. Qly.	List Price Clear
250	G-30	Medium	3	24	\$1.50
500	G-40	Mogul	41/4	12	2.90
1000	G-40	Mogul	51/4	12	6.25



Walts 2000 2000 5000 10000

## MOTION PICTURE PRODUCTION SERVICE

110, 115 and 120 Volts

■ The high wattage MAZDA lamps listed below meet the varied and exacting requirements of motion picture production, whether sound or silent, in black and white, or in color.

These lamps are rugged and silent in operation. Their light is definite and constant in color, bringing out the full possibilities of the various film emulsions.

The lamps designated for use with "modeling equipments" have concentrated light sources of high brightness to make possible beams of a high degree of light concentration. They may be operated from vertically base-down to practically horizontal. The general lighting lamps are universal burning.

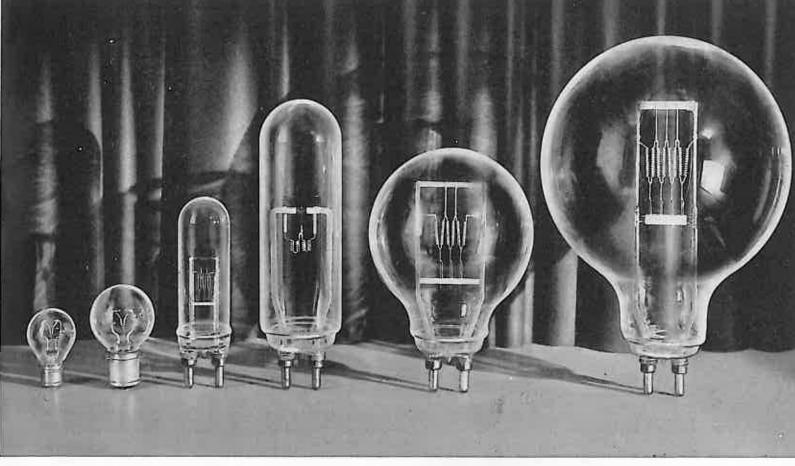
In the "Movieflood" lamp, the filament operates at a very high temperature, resulting in an exceptionally high output of light per watt and a still greater increase in photographic efficiency. Furthermore the light is of a color quality suited to the needs of color pictures. The lamps are equally satisfactory for black and white photography and are recommended wherever a minimum of lighting equipment is desired.

_								
Application	Walts	Bulb	Light Center Length, Inches	Maximum Over-all Length, Inches	Base	Haled Average Laboratory Life, Hours	Slandard Package Quantity	List Price Clear
*Modeling *Modeling *Modeling	2000 5000 10000	G-48 G-64 G-96	5 6½ 10	9 <sup>3</sup> / <sub>8</sub> 11 <sup>7</sup> / <sub>8</sub> 17 <sup>3</sup> / <sub>8</sub>	Mogul Bipost Mogul Bipost Mogul Bipost	100 75 75	6 1 1	\$ 13.00 35.00 85.00
Photographic (General Lighting) Photographic (General Lighting) †Movieflood (Color Photography)	1000 1500 2000	PS-52 PS-52 PS-52	9½ 9½ 9½ 9½	13½ 13½ 13½	Mogul Screw Mogul Screw Mogul Screw	250 250 †	6 6 6	4.00 5.75 5.25

When the 5000-wait lamp is operated at about ten per cent above its rated voltage, the light is of the same super-photographic efficiency as that from the "Moviellood" and of the same favorable quality for color photography.

<sup>\*</sup>Burning position—within 45 degrees of vertically base down.

<sup>†</sup> Voltage range for operation is 105-120 volts. Rated average laboratory life at 115 volts is 15 hours.



100 and 240

420

1000

3000

5000

10000

## AVIATION SERVICE

■ The development of MAZDA lamps for aviation service has made possible night mail and transport flying. The complete line of MAZDA aviation lamps is now available for this service.

The bipost and the prefocus bases provide the high degree of accuracy in positioning of light sources with relation to the optical elements which is so necessary to the effective functioning of the several classes of aviation lighting equipment.

Airport code beacons take the 500-watt PS-40 bulb general service lamp fitted with mogul prefocus base, while the airway code beacons use the 200-watt PS-30 bulb general service lamp with mogul prefocus base.

For airport boundary lights, 6.6-ampere series lamps are widely used. The 50-watt and 100-watt general service lamps are employed in obstruction lights.

Watts	Volts	Bulb	Light Center Length, Inches	Base	Burning Position	Rated Äverage Laboratory Life, Hours	Standard Package Quantity	List Price Clear
	_			AIRCRAFT LANDI	NG LAMPS			
100	12	A-19	13/4	Medium Prefocus	Any positon except	100	12	\$ 2.15
240	12	A-19	13/4	Medium Prefocus	within 45 degrees of	100	12	5.25
420	12	G-25	1 1 1 1 1 1 1 1 1	§Mogul Prefocus	vertically base up	100	12	6.00
				AIRPORT FLOODLI	GHT LAMPS			
1500	32	T-24	4	Mogul Bipost	Base Down	100	6	15.00
3000	32	T-32	5¾	Mogul Bipost	Base Down	100	4	25.00
5000	110, 115, 120	G-64	$6\frac{1}{2}$	Mogul Bipost	Base Down	75	1	35.00
10000	110, 115, 120	G-96	10	<b>M</b> ogul Bipost	Base Down	75	1	85.00
			AIRW	AY AND AIRPORT	BEACON LAMPS			
1000	110, 115, 120	T-20	4	†Mogul Bipost	Base Down	500	6	6.50
*500	110, 115, 120	T-20	376	Mogul Prefocus	Base Down	800	6	3.90
**1000	30	T-20	4	Mogul Bipost	Base <b>Down</b>	500	6	7.00

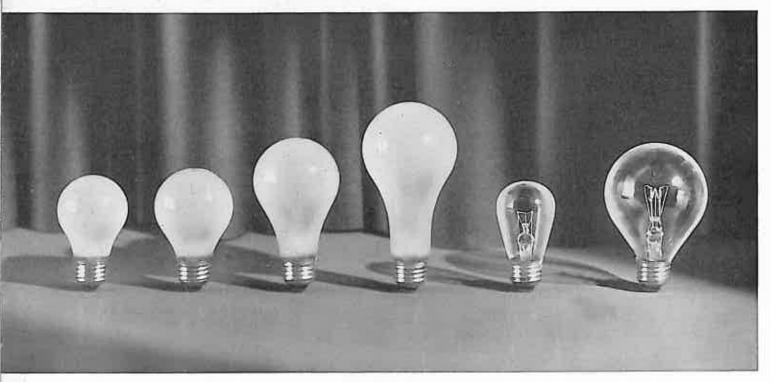
Mogul screw at \$6.00

<sup>\*</sup> This lamp is standard in airway "on-course" lights.

<sup>\*\*</sup> Used mostly in airport beacons,

<sup>†</sup> Mogul screw at \$6.50

## TRAIN AND LOCOMOTIVE LIGHTING SERVICE



Watts 15 25 50 100 15 100 and 250

**TRAINLIGHTING**—To insure satisfactory lamp performance and economical operation, voltage regulating devices should be adjusted to maintain rated lamp voltage at the socket. The 30 and 60-volt lamps are recommended as being best adapted to average voltage conditions encountered in trainlighting service.

Watts	Bulb	Screw Base	Std. Pkg. Qty.	List Price
	TRAIN—30, 3	2, 60 AND 64 ide Frosted	VOLTS	
15	A-17	Medium	120	\$0.23
25	A-19	Medium	120	.23
50	A-21	Medium	120	.25
100	A-23	Medium	60	.38
	LOCOMOTIV	VE CAB—34	VOLTS	
15	S-14 Clear	Medium	120	.22
1	OCOMOTIVE H	IEADLIGHT-	-32 <b>VOL</b> 1	rs
100	P-25 Clear	Medium	60	1.00
250	P-25 Clear	Medium	60	1.50

**LOCOMOTIVE HEADLIGHTING**—When operated at their rated voltage in suitable headlight equipment protecting them from excessive vibration, these lamps will furnish satisfactory service. Care must be exercised to prevent water from striking the bulb while hot.

The 250-watt lamp, designed especially for road locomotives, employs a construction of dual supports for the filament to withstand vibration encountered at high speeds. The 100-watt lamp is recommended for switching locomotives.

**LOCOMOTIVE CAB LIGHTING**—The locomotive cab lamp has been designed to insure ruggedness rather than efficient light production. It should be used for all locomotive lighting purposes except headlighting.

## STREET RAILWAY SERVICE (525 to 650 Volts)

## Headlighting

Headlight lamps are for operation in series with 4 lamps of corresponding wattage and voltage used elsewhere in the car.

105, 110, 115, 120, 125 and 130 Volts

Watte	Bulb	Screw Base	Light Center Length, Inches	Sid. Pkg. Qty.	List Price
36	A-19 Clear	Medium	2 3	120	\$0.60
56	P-25 Clear	Medium	21/6	60	.85
94	P-25 Clear	Medium	216	60	1.10

## Car Lighting

**5-IN-SERIES LAMPS**—These vacuum lamps operate 5-in-series on the trolley voltage and are used for general illumination, destination signs, etc. Individual lamp voltage to the nearest 5-volt step is  $\frac{1}{15}$  of the average trolley voltage applied to the lamp circuit during the period in which the lamps are in use.

The 36 and 56-watt lamps provide more satisfactory performance when operated in the base-up vertical position.

30-VOLT CUTOUT LAMPS—These lamps are gasfilled and are more efficient initially and throughout life than the 5-in-series lamps. The number of lamps required per circuit is determined by dividing the trolley circuit voltage by 30. Each lamp is equipped with an automatic short-circuiting element which cuts the lamp out of the circuit and prevents arcing when the lamp burns out.

5-In-Sexies-105, 110, 115, 120, 125 and 130 Volts

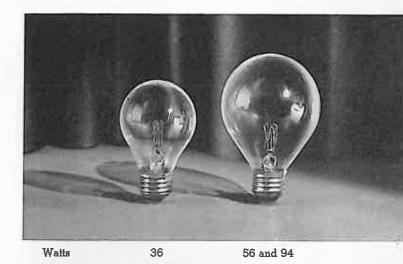
Watts	Bulb	Screw Base	Std. Pkg. Qty.	List Price
23	S-17 Clear	Medium	120	\$0.25
36	A-21 Inside Frosted	Medium	120	.17
56	A-21 Inside Frosted	Medium	120	.24
	CUTOUT LAMI	25—30 VOI	TS	
Amps.				
1.0	A-19 Inside Frosted	Medium	120	.30
1.6	A-21 Inside Frosted	Medium	120	.35

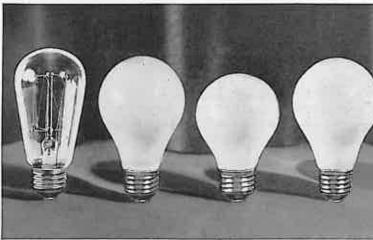
## Shop and Yard Lighting

ARC RESISTING—These higher wattage lamps, designed to operate 5-in-series, are gas-filled and more efficient than vacuum lamps, and are recommended for illumination of shops and yards. The 101-watt lamp is also used for car lighting in totally-enclosing fixtures. Each lamp contains material in the stem which tends to prevent arcing when filament burnout occurs.

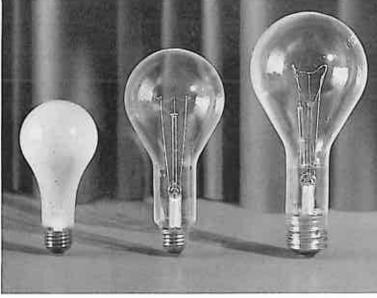
Arc Resisting-105, 110, 115, 120, 125 and 130 Volts

Watte	Bulb	Screw Base	Std. Pkg. Qty.	List Price
101	A-23 Inside Frosted	Medium	60	\$0.50
201	PS-30 Clear	Medium	24	.95
301	PS-35 Clear	Mogul	24	1.55

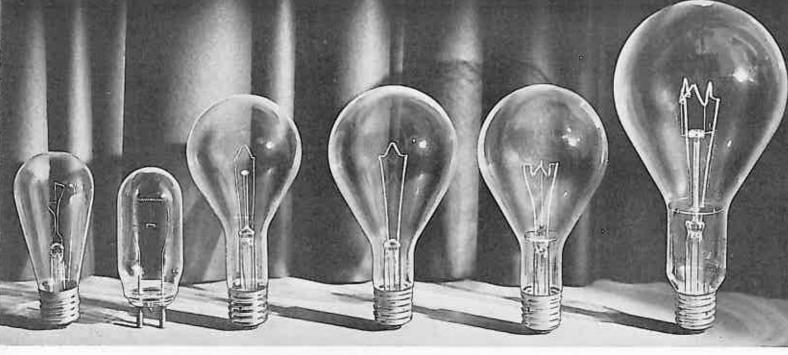




Watts 23 36 and 56 Amps. 1.0 1.6



Watts 101 201 301



Lumens 1000

00 4000

2500 and 4000

6000

10000 and 15000

25000

## STREET SERIES LIGHTING SERVICE

■ Street series lamps are designed to meet special requirements of street lighting service. Filaments are formed to produce a favorable light distribution. With operation at constant current, bulb blackening is compensated for by a slow increase in wattage and filament temperature, hence the light output is maintained throughout life at a high percentage of initial value.

The performance of street series lamps is affected sharply by current variations. The current in street series circuits should therefore be adjusted as closely as possible to rated value. Because of the severity of street series service, the average service life of series lamps even under good operating conditions is of the order of 25 per cent less than the average laboratory life.

Street series lamps are rated in lumens. All street lighting contracts should refer to series lamps in terms of their lumen ratings.

The new bipost base lamp with bar-type filament

and hard glass bulb represents advantages of small size and precise positioning for accurate and effective control of light by suitable highway lighting reflectors.

Amps.	Lumens	Average Volts	Bulb	Light Center Length, Inches	Std. Pkg. Oty.	List Price Clear
6.6	1000	9.5	S-241/2	53/g	60	\$0.45
6.6	2500	22.0	PS-35	7	24	.90
6.6	4000	32.8	PS-35	7	24	1.05
6.6	4000	35.7	T-20	‡4	24	1.40
6.6	6000	48.6	PS-40	7	12	1.45
15	4000	13.7	PS-35	+7	24	1.10
20	6000	14.9	PS-40	+7	12	1.50
20	10000	25.0	PS-40	*7	12	1.85
20	15000	37.3	PS-40	*7	12	2.55
20	25000	60.7	PS-52	91/2	6	4.80

The above lamps are fitted with mogul screw base, with the exception of the new 4000-lumen, medium bipost base lamp.

The 15 and 20 ampere lamps are designed for base up burning position.

Lamps ordered for base down burning position may be supplied at the same price. The 25000-lumen lamp is not recommended for base down burning.

\*Base down lamp—61/4" light center length.

I Base up.

# TRAFFIC SIGNAL SERVICE—110, 115 and 120 Volts

■ This especially designed 60-watt clear bulb traffic signal lamp is the recognized standard for traffic signal service. It has a clear bulb, a short light center length and produces sufficient light to make possible a signal indication of requisite brightness. In the interest of public safety it is strongly recommended that no lamp of lower wattage be employed.

Watte	Volta	Bulb	Screw Base	Std. Pkg. Qty.	List Price
60	110, 115, <b>120</b>	A-21 Clear	Medium	120	\$0.30



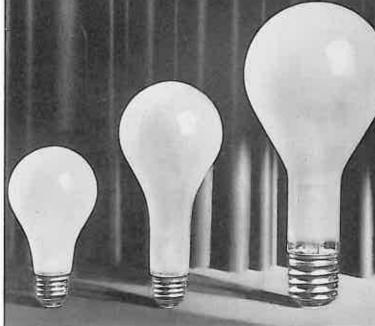
REFERENCE LISTING OF

## OTHER LAMP SERVICES

The following pages are included for general information and reference only and are not a part of the standard large lamp schedules which precede.

The lamps shown are not sold under the terms and conditions applying to large MAZDA lamps and Type D lamps.





Photoflash No. 10

No. 20

No. 75

Photoflood No. 1

No. 2

No. 4

## MAZDA PHOTO LAMPS

■ Photoflash lamps make available an enormous volume of highly actinic light in the form of a flash with a duration of about 1/50th second. They are especially applicable for action pictures, which require extremely short exposures, and under conditions where no power supply is available or the installation of a sufficient number of Photoflood lamps would not be convenient. The lamps may be flashed with two or more cells of flashlight or dry battery or on standard lighting circuits.

The No. 10 Photoflash lamp is designed particularly for amateur service, the No. 20 for general and news photography, and the No. 75 for color and large-area work. At the very peak of its flash the light intensity from a No. 75 Photoflash lamp is equivalent to that from more than five hundred general service lamps of the 1000-watt size.

It is recommended that a reflector always be used

with MAZDA Photo lamps to utilize light which would otherwise be wasted. A reflector screens the operator and increases the illumination on the subject by three to five times.

Photoflood lamps, for use on standard lighting circuits, produce a large amount of light of high photographic efficiency. The color quality is constant in value and is perfectly suited to the newer panchromatic films and plates. This makes possible home movies and portraits, and greatly facilitates the operations of commercial photographers in their studio and out-of-studio work.

Photographically the light from the Photoflood lamp No. 1 is about equivalent to that obtained from a 750-watt general service lamp. No. 2 is the equivalent of a 1000-watt lamp, while the No. 4 is at least two and one-half times as effective as the 1000-watt general lighting lamp.

No.	Voltage Range for Operation	Lumens	Bulb	Diameter Bulb, Inches	Maximum Over-all Length, Inches	Rated Life at 115 Volts, Hours	Standard Package Quantity	List Price
	-	М	AZDA PHO	FOFLASH LAM	PŞ—CLEAR			
10	3 to 125	*22500	A-19	23/8	47/8		60	\$0.15
20	3 to 125	*45000	A-23	27/8	616		60	.25
75	3 to 125	*180000	PS-35	43/8	8:5		24	.75
		MAZDA	PHOTOFLO	OOD LAMPS—I	NSIDE FROSTI	ED .		
1	105-120	8650	A-21	25/8	415	2	60	.25
2	105-120	17000	A-25	31/8	618	6	24	.50
4	105-120	33500	PS-35	43/8	9 7 16	10	24	2.00
	MAZ	DA PHOTOGR	APHIC ENI	ARGER LAMP	-OUTSIDE WE	IITE COATE	D	
11	105-120	7950	A-21	25/8	415	2	60	.35

The above lamps are fitted with medium screw base except Photoflood No. 4, which has mogul screw base.

Use not more than five Photoflood lamps No. 1 on the usual lighting circuit. Circuits for Photoflood lamp No. 4 should be fused for 10 amperes for each No. 4 lamp employed.

\* Lumen Seconds



## MAZDA SUNLIGHT LAMPS

Type S-2 S-1

■ Type S-1 and Type S-2 MAZDA lamps are designed for use where a lamp emitting a combination of ultraviolet radiation and visible light is desired.

They are employed in portable and ceiling-type sunlamps for home and solarium use and in dual purpose lighting units for offices and similar locations; also, in various types of farm units for irradiating animals and poultry.

These lamps will not operate on ordinary house lighting circuits except when used in special equipment properly designed to produce the correct starting and operating voltages.

Each type requires a different transformer specially

designed for the lamp and operating temperatures should be held within certain specified limits by proper construction of the socket and reflector assembly.

The bulbs of these lamps are of special glass which transmits biologically active ultraviolet but absorbs most of the radiation of wavelengths shorter than those in sunlight.

Though they have been accepted by the Council of Physical Therapy of the American Medical Association, the manufacturer makes no claims as to the effectiveness of ultraviolet radiation for the maintenance of health and particularly for the cure of disease; the latter being entirely the province of the medical profession.

Approx. Watta	Approx. Volts	Approximate Time* to Produce Mild Erythema (Sunburn) on Unlanned Skin with Lamps Operating in Typical Applicator Type Equipments 30° Position—30-Inch Dislance	Bulb	Max. Over-all Length, Inches	Scrow Base	Raied Life, Hours	Standard Package Quantity	List Price
		TYP	E S-1 MAZDA LAMP					
400	14.5	7 minutes	PS-22 Inside Frosted	616	Mogul	400	6	\$5.75
		ТҮР	E S-2 MAZDA LAMP					
130	15	45 minutes	A-17 Inside Frosted With Metal Cap	47/8	Special	300	12	3.75

<sup>\*</sup> Considerably longer exposures are necessary to produce vivid reddening.



250 Walts



400 Watts

## MERCURY (Type H) LAMPS

For use on 110-120 or 220-250 volt circuits with special equipment properly designed to produce the correct starting and operating voltage for the lamp.

■ Mercury lamps have been recently introduced in two wattage sizes. These lamps differ radically in principle from incandescent MAZDA lamps both in their operation and in the color quality of light produced, but are applicable to a wide range of industrial and commercial lighting applications.

These new lamps represent departures from former gaseous conductor and mercury vapor sources in that they are provided with conventional screw bases and are adaptable to common types of reflecting equipment.

The principle of operation is that of a mercury vapor arc or flow of current between the two main electrodes located at the upper and lower parts of the bulb. The operating characteristics of these new light sources are such that each lamp requires a special transformer or regulating device for starting and operation. Several minutes is required for mercury lamps to come up to full brilliance.

## The 400-Watt (Type H-1) Lamp

The 400-watt Type H-1 mercury lamp consists of an interior arc tube enclosed within an outer tubular bulb. The lamp is supplied either for base up or base down operation and must be burned within 10 degrees of vertical. Orders should specify burning position.

## The 250-Watt (Type H-2) Lamp

This lower wattage mercury lamp, though operating on the same principle, differs somewhat in construction from the 400-watt size. Only a single bulb enclosing the arc stream is used and the lower vapor pressure permits universal burning. It should be used in equipment which protects the lamp from air currents or drafts.

						250 Watts*	400 Watts*
List Price						\$7.50	\$12.50
†Standard Package Quantity						12	6
Bulb						T-9	T-16
Ваве						Medium Screw	Mogul Screw
Maximum Over-all Length .						8 inches	13 inches
Maximum Diameter						11/8 inches	2 inches
*Lumens						7500	16000
Initial Lumens per Watt						30	40
Lumens per Watt at 70% Life						25	33
Average Life						2000 hours	2000 hours
Frequency						60 cycles	60 cycles
Light Center Length						5 inches	7¾ inches
Length of Light Source						4½ inches	6 inches
Burning Position						Any	Base up‡
Finish						Clear	Clear

<sup>\*</sup> These are design values. Electrical rating will change slightly with different line voltages.

Lamps also available for base down burning.

<sup>†</sup> A standard package shall consist of lamps of the same specifications.

## SUMMARY OF PRICES AND TECHNICAL DATA

## Large MAZDA Lamps and Type D Lamps

The drawings below illustrate the various bulbs, base and filament designations referred to in this Catalog. The letter in the bulb designation indicates its shape and the figure its approximate diameter in eighths of an inch.

Over-all length is measured from top of bulb to bottom of base. Light center length is measured from the center of the filament to bottom of screw bases; top of base pins or fins of bayonet or prefocused bases; shoulder of post of mogul bipost bases and bottom of bulb (base end) for medium bipost bases.

## **BULB DESIGNATIONS BASE DESIGNATIONS** Candelabra Intermediate Medium Prefocus Mogul Mogul Bipost FILAMENT FORMS The letter "S" preceding the number denotes a "straight" while "C" denotes the "coiled" filament. The filament form and method of support determines the burning position. These illustrations show some of the commonly used filament forms and the specific burning position of each.

		List	Sid.	Mazda B or	Rated	Rated Initial	Lums. per Watt	Rated Aver.		Max. Over-all	Aver. Light	Fil. Const.	Position of
Watta	Bulb	Price	Pkg. Qly.	Mazda C Lamo	Initial Lums.	Lums. per Wait	of Rated Life	Lab. Life (Hrs.)	Base	Length, Inches	Center Length, Inches	Congr.	Burning
		MAZD	A L	AMPS	FOR	110, 11	l5 and	120-	Volt Ci	rcuits	5		
6 6 6	S-6 clear	\$0.15 .15 .15	120 120 120	B B B	39 38 38	6.6 6.4 6.3		1500 1500 1500	Cand. Med. Med.	17/8 31/2 31/2	$2\frac{1}{2}$ $2\frac{1}{2}$	C-7A C-9 C-9	Any Any Any
6	S-14 colored†	.20	120	В				1500	Med.	31/2		C-9	Any
¶7	C-7 clear	.10 .10	120 120	B B	*50	7.1		2000 2000	Cand. Cand.	2½ 2½		C-7A C-7A	Any Any
10 10 10 10	S-11 clear	.15 .20 .15 .15	120 120 120 120 120	B B B	82 80 79	8.2 a 8.0 a 7.9	a 7.3 a 7.2	1500 1500 1500 1500	Inter. Inter. Med. Med.	$\begin{array}{c} 2_{16} \\ 2_{16} \\ 2_{16} \\ 3_{1/2} \\ 3_{1/2} \end{array}$	15/8 15/8 21/2 21/2	C-7A C-7A C-9 C-9	Any Any Any Any
10 10 10	S-14 colored† S-14 nat. col S-14 nat. col. +	.20 .40 .50	120 120 120	B B B				1500 1500 1500	Med. Med. Med.	3½ 3½ 3½ 3½		C-9 C-9 C-9	Any Any Any
15 •15	A-17 I. F	.15 .25	120 60	B B	141	a 9.4	a 8.3	1000 750	Med. Cand.	35/8 310	23/8	C-9 C-7A	Any Any
25 25 25	A-19 I. F	.15 .20 .40	120 120 120	B B B	260	a 10.4	a 8.9	1000 1000 1000	Med. Med. Med.	3 15 3 15 3 15 3 15	2½	C-7A C-7A C-7A	Any Any Any
25 25 •25	A-19 nat. col. <sup>+</sup> A-19 day, clear F-15 F. T., white, ivory	.50 .30 .15	120 120 120	B B B				1000 1000 750	Med. Med. Med.	3 15 3 15 4 1/2	2½ 	C-7A C-7A C-7A	Any Any Any
♦25 ♦25 25	G-18½ F. T., wh., ivory G-25 F. T., white, ivory T-6½ clear	.30 .35 .35	120 60 60	B B B	237	9.5		750 750 1000	Med. Med. Inter.	$\frac{3\frac{9}{16}}{4\frac{7}{16}}$		C-7A C-7A C-8	Any Any Any
25	T-10 clear	.25	60	В	250	a 10.0	a 8.2	1000	Med.	55/8		C-8	Any
30 ∳30	T-8 clear Lumiline T-8 col. ( ) Lumiline	.95 1.05	24 24	B B	243	8.1		1500 1500	Disc Disc	n1734 n1734		C-8 C-8	Any Any
40 40 40 40 40	A-19 I. F A-21 I. F A-21 colored† A-21 nat. col A-21 nat. col. +	.15 .18 .23 .40 .50	120 120 120 120 120	C B B B	444 428	b 11.1 10.7	b 9.9	1000 1000 1000 1000 1000	Med. Med. Med. Med. Med.	41/4 41/6 41/6 41/6 41/6	27/8 27/8	C-9 C-7A C-7A C-7A C-7A	x Any Any Any Any Any
♦40 40 40 ♦40	G-25 F. T., white, ivory T-8 clear T-8 clear Lumiline T-8 col. ( ) Lumiline	.35 .90 .85 .95	60 24 24 24 24	B B B	400 344	10.0 8.6	8.4	750 1000 1500 1500	Med. Med. Disc Disc	$^{4\frac{7}{16}}_{11\frac{7}{8}}^{11\frac{7}{8}}_{\text{nl}1\frac{3}{4}}^{\text{nll}\frac{3}{4}}$	•••	C-7A C-8 C-8 C-8	Any Any Any Any
50 50 50 50	A-21 I. F. A-19 I. F. Rough Serv. A-19 day. clear P-19 cl. Vibration	.15 .30 .35 .25	120 120 120 120	C B B	650 455 555	b 13.0 a 9.1 a 11.1	b 12.1 a 7.5 a 8.4	1000 1000 1000 1000	Med. Med. Med. Med.	415 315 315 315 315 316 316	33/8 21/2 21/2 21/2 21/2	CC-6 C-22 C-7A C-9	x Any Any Any Any but Horiz.
50 100 150	PS-25 I. F. Three Light	.50	60	С	{ 525 1380 1905	10.5 13.8 12.7		1000	Three Contact Mogul	613	5	2 C-9	Āny
60 60 60	A-21 I. F	.15 .30 .45	120 120 120	000	828 *500	b 13.8	b 13.0	1000 1000 1000	Med. Med. Med.	415 415 415 416	3 <sup>3</sup> / <sub>8</sub> 3 <sup>3</sup> / <sub>8</sub> 3 <sup>3</sup> / <sub>8</sub>	CC-6 C-9 CC-6	I Any I Any Base up
• 60 • 60	Ä-21 nat. col.□ Ä-21 nat. col.+	.45 .55	120 120	CC				1000 1000	Med. Med.	415 415 416		C-9 C-9	Any Any

<sup>†</sup> Inside colored in red, blue, green, yellow, amber-orange and old rose.

I Inside colored in red, blue, green, yellow, amber-orange filametini and white.

Natural colored in amber, blue and green. Amber regularly furnished in light shade. Dark shade amber (used in photographic work) can be furnished at same price. Blue shade does not include daylight blue or photographic blue.

Natural colored ruby regularly furnished in light shade. Dark shade ruby (used in photographic work) can be furnished at same price.

I Inside colored in red, blue, green, yellow, amber-orange, flametini, ivory and old rose.

<sup>(</sup>A) Inside irosted or outside colored white, straw, orange, moonlight blue, emerald and surprise pink.

This lamp not to be burned in enclosing globe.

a Lumens per watt listed are for 115-volt lamps only. For 110-volt lamps add 0.05 l.p.w.; for 120-volt lamps subtract 0.05 l.p.w.

b Lumens per watt listed are for 115-volt lamps only. For 110-volt lamps add 0.15 l.p.w.; for 120-volt lamps subtract 0.05 l.p.w.

Will operate in any position, but lumen maintenance is best when burned vertically base up and lumens per watt values at 70% of rated life apply to this burning position only.

<sup>\*</sup> Approximate value.

<sup>¶</sup> Nominal Watts. 110-125 volts (design volts 118).

<sup>•</sup> Outside coated lamps not recommended for outdoor use.

Average over-all length.

Watts	Bulb	List Price	Sid, Pkg. Qiy.	Mazda B or Mazda C Lamp	Rated Initial Lums,	Rated Initial Lums. per Watt	Lums. per Watt at 70% of Rated Life	Rated Aver. Lab. Life (Hrs.)	Base	Max. Over-all Length, Inches	Aver. Light Center Length, Inches	Fil. Const.	Position of Burning
	MAZI	A LA	MPS	FOR	110, 1	15 and	120-V	olt C	ircuits	—Con	tinue	d	
60 60 \$ 60	A-21 cl. Traf. Signal T-8 clear Lumiline T-8 col. (A) Lumiline.	\$0.30 .95 1.05	120 24 24	C B B	654 528	10.9		2000 1500 1500	Med. Disc Disc	4 7 1 1 7 3 4 n 1 7 3 4	216	C-9 C-8 C-8	Base down or Horiz. Any Any
75	Ä-21 I. F	.20	60	С	1073	b 14.3	և 12.6	750	Med.	5 5	37/8	C-9	t Any
100 100 100	A-23 I. F	.20 .35 .60	60 60 60	CCC	1560 *1010	b 15.6	b 13.7	750 750 1000	Med. Med. Med.	616 616 616	43/8 43/8 43/8	C-9 C-9 C-9	X Any X Any Base up
100	A-23 I. F. Rough Serv.	.45	60	С	1150	b 11.5	b 10.1	1000	Med.	6 16	43/8	C-17	Āny
100 200 300	G-30 I. F. Indirect Three-Lite	.65	24	С	1330 3320 4650	13.3 16.6 15.5		1000	Three Contact Mogul	63/4	33/4	2 C-7A	Base down
150 150 150	A-25 I. F. A-25 clear A-25 W. B.	.25 .25 .30	60 60	CCC	2580 2330 *2500	b 17.2 b 17.2	b 15.2	750 750 750	Med. Med. Med.	6 1 5 6 1 5 6 1 5 6 1 5 6 1 5 6 1 5 6	51/4 51/4 51/4	C-9 C-9 C-9	I Any I Any Base up
150 150 150	A-25 day. clear	.50 .55 .70	60 60 60	000	*1680 *1680			750 750 1000	Med. Med. Med.	6 15 6 15 6 15 6 16	514 514 514	C-9 C-9 C-9	i Any i Any Base up
200 200 200	PS-30 clear	.35 .35 .40	24 24 24	000	3640 3640 *3530	b 18.2 b 18.2	ь 15.6	750 750 750	Med. Med. Med.	81/8 81/8 81/8	6 6 6	C-9 C-9 C-9	X Āny X Āny Base up
200 200 <b>\$</b> 200	PS-30 day, clear PS-30 day, I, F. PS-30 I, F. Silv, Bowl	.80 .85 .95	24 24 24	000	*2270 *2270			1000 1000 1000	Med. Med. Med.	81/8 81/8 81/8	6 6 6	C-9 C-9 C-9	I Any I Any Base up
300 300 300	PS-35 clear	.60 .65 .65	24 24 24	000	5910 5910 *5730	b 19.7 b 19.7	b 16.3	750 750 750	Med. Med. Med.	834 834 834	6 6 6	C-9 C-9 C-9	z Any z Any Base up
300 300 300	PS-35 clear	.75 .80 .80	24 24 24	000	5760 5760 *5590	h 19.2 h 19.2	b 16.0	1000 1000 1000	Mog. Mog. Mog.	918 918 918	7 7 7	C-7A C-7A C-7A	x Any x Any Base up
300 300 <b>4</b> 300	PS-35 day. clear PS-35 day. I. F PS-35 I. F. Silv. Bowl.	1:20 1:30 1:45	24 24 24	000	*3740 *3740		• • • • • • • • • • • • • • • • • • •	1000 1000 1000	Mog. Mog. Mog.	9 16 9 16 9 16	7 7 7	C-7A C-7A C-7A	X Any X Any Base up
500 500 500	PS-40 clear	1.40 1.50 1.50	12 12 12	000	10050 10050 *9750	b 20.1 b 20.1	b 16.5	1000 1000 1000	Mog. Mog. Mog.	915 915 915 915	7 7 7 7	C-7A C-7A C-7A	X Äny X Äny Base up
. 500 500 ቆ500	PS-40 day. clear PS-40 day. I. F PS-40 I. F. Silv. Bowl.	2.15 2.30 2.25	12 12 12	000	*6530 *6530			1000 1000 1000	Mog. Mog. Mog.	913 913 913 918	7 7 7	C-7A C-7A C-7A	x Any x Any Base up
750 750	PS-52 clear	3.75 3.95	6	oo	14550 *14100	19.4	17.5	1000 1000	Mog. Mog.	13½ 13½	9½ 9½	C-7Ā C-7Ā	x Any Base up
1000 1000 1000	T-24 I. F. PS-52 clear PS-52 W. B.	3.75 4.00 4.20	666	000	19600 20700 *20080	19.6 20.7	18.0 17.3	1000 1000 1000	Md. Bip. Mog. Mog.	9½ 13½ 13½	k 5½ 9½ 9½ 9½	C-13 C-7A C-7A	Base up x Any Base up
1500 1500	PS-52 clear	5.75 5.95	6	CC	32550 *31570	21.7	15.3	1000 1000	Mog. Mog.	13½ 13½	9½ 9½	C-7A C-7A	X Any Base up
			E D	LAN	IPS—11		•			_	2 2 1		
♦ 7½ 15	G-11 outside wh. & red A-15 I. F.	.10	60 60	Vac. Vac.	148	a 9.9	* * * * *	1400 750	Med. Med.	2½ 3½		C-7A C-9	Any Any
<b>♦30</b> 60	G-19 (θ). Ā-19 I, F.	.10 .10	60 60	<b>Vac.</b> Gas F.	342 I.F. 828	11.4 I.F. b 13.8		500 500	Med. Med.	3 1 8 45/8		C-9 C-9	Any Any

<sup>(</sup>A) Inside frested or outside colored white, straw, orange, moonlight blue, emerald and surprise pink.

A) Inside frested or outside colored white, straw, orange, moonlight blue, emerald and surprise pink.
 b Silvered bowl lamps should be used only in porcelain sockets and in fixtures so designed that the temperatures of the lamp and fixture do not exceed limits for satisfactory operation.
 6) Inside frested or outside colored in red, blue, green, amber-orange, rose, white, ivory and flametint.
 a Lumens per watt listed are for 115-volt lamps only. For 110-volt lamps add 0.05 l.p.w.; for 120-volt lamps subtract 0.05 l.p.w.
 b Lumens per watt listed are for 115-volt lamps only. For 110-volt lamps add 0.15 l.p.w.; for 120-volt lamps subtract 0.15 l.p.w.
 k The light center length of this lamp is the distance from the center of the light source to the plane of the bottom of the bulb (exclusive of tip).
 I Will operate in any position, but lumen maintenance is best when burned vertically base up and lumens per watt values at 70% of rated life apply to this burning position only.
 A pproximate value.
 Outside content lamps not recommended for outsider use.

<sup>6</sup> Outside coated Jamps not recommended for outdoor use.

Average over-all length.

	Ī	1				l	I	Lum.			1			
Walts	Volls	Bulb	List Price	Sid. Pkg. Qty.	Mazda B or Mazda C Lamp	Rated Initial Lums.	Rated Initial Lums, per Watt	per Wath at 70% of Rated Life	Raied Aver. Lab. Life (Hrs.)	Base	Max. Over-all Length, Inches	Aver. Light Center Length, Inches	Fil. Const.	Position of Burning
	MA	ZDA LAMPS FOR	HIGI	a vo	LTA	GE SI	ervi(	CE—2	20, 23	0, 240	, 250	and 2	260 V	olts
25	230	A-19 I. F	\$0.26	120	В	215	¢ 8.6	c 8.0	1000	Med.	318	21/2	C-17	Any
50 50 50	230 275 300	A-21 I. F	.26 .40 .40	120 120 120	B B B	475 435 435	0 9.5 8.7 8.7	c 8.2	1000 1000 1000	Med. Med. Med.	$\begin{array}{c} 4\frac{7}{16} \\ 4\frac{7}{16} \\ 4\frac{7}{16} \end{array}$	27/8 27/8 27/8	C-17 C-17 C-17	Any Any Any
100	230	A-23 I. F	.38	60	С	1230	d 12.3	d 11.5	1000	Med.	6 1 g	43/8	C-9	x Any
200 200 200	230 230 230	PS-30 clear PS-30 I. F. PS-30 W. B.	.85 .90 .90	24 24 24	000	2940 2940 *2850	d 14.7 d 14.7	d 13.4	1000 1000 1000	Med. Med. Med.	81/8 81/8 81/8	6 6	C-9 C-9 C-9	X Āny X Āny Base up
300 300 300	230 230 230	PS-35 clear PS-35 I. F. PS-35 W. B.	1.25 1.35 1.35	24 24 24	000	4740 4740 *4600	d 15.8 d 15.8	d 14.0	1000 1000 1000	Mog. Mog. Mog.	916 916 916	7 7 7	C-7A C-7A C-7A	X Any X Any Base up
500 500	230 230	PS-40 clear	2.15 2.30	12 12	CC	8600 8600	d 17.2 d 17.2	d 15.2	1000 1000	Mog. Mog.	9 13 9 13 9 16	7	C-7A C-7A	I Āny I Āny
750	230	PS-52 clear	4.25	6	С	13500	d 18.0	d 15.8	1000	Mog.	131/8	9½	C-7A	X Āny
1000	230	PS-52 clear	4.75	6	C	19400	d 19.4	d 16.2	1000	Mog.	131/8	91/2	C-7A	I Any
		MAZDA LA	MPS 1	FOR	COT	INTRY	и ног	ME SI	<b>ERVI</b>	CE—28-	-32 V	olts		
15 25	28-32 28-32	A-17 I. F	.23 .23	120 120	CC	165 330	11.0 13.2		1000 1000	Med. Med.	35/8 318	2 <sup>3</sup> / <sub>8</sub> 2 <sup>1</sup> / <sub>2</sub>	C-9 C-9	I Any I Any
50 100	28-32 28-32	A-21 I. F. A-23 I. F.	.25 .38	120 60	CC	785 1 <b>750</b>	15.7 <b>17.5</b>		1000 1000	Med. Med.	418 618	33/8 43/8	C-9 C-9	I Any I Any
		MAZDA L	AMPS	FOE	R TR	AIN A	AND	LOCO	MOT	VE SE	RVIC	E		
15 15 15 15 15	32 34 60	A-17 I. F. A-17 I. F. S-14 clear Cab. A-17 I. F. A-17 I. F.	.23 .23 .22 .23	120 120 120 120 120 120	ССВВВ	165 176 141 150 160	11.0 11.0 9.4 10.0 10.0	10.0 10.0	1000 1000 1000 1000 1000	Med. Med. Med. Med. Med.	3,55,00,00,00 3,75,00,00 3,75,00,00 3,75,00,00 3,75,00,00 3,75	23/8 23/8 21/2 23/8 23/8	C-9 C-9 C-9 C-9	I Any I Any Any Any Any
25 25 25 25 25	60	A-19 I. F. A-19 I. F. A-19 I. F. A-19 I. F.	.23 .23 .23 .23	120 120 120 120 120	იიიი	330 352 273 291	13.2 13.2 10.9 10.9	12.1 12.1	1000 1000 1000 1000	Med. Med. Med. Med.	3156 3156 3156 316	2½ 2½ 2½ 2½ 2½ 2½	C-9 C-9 C-9 C-9	X Any X Any X Any X Any
50 50 50 50	32 60	A-21 I. F. A-21 I. F. A-21 I. F. A-21 I. F.	.25 .25 .25 .25	120 120 120 120 120	מטטט	785 837 685 730	15.7 15.7 13.7 13.7	14.3 14.3	1000 1000 1000 1000	Med. Med. Med. Med.	415 415 415 415 415 416	33/8 33/8 33/8 33/8 33/8	C-9 C-9 C-9 C-9	X Any X Any I Any I Any
100 100 100 100 100	32 32 60	A-23 I. F. A-23 I. F. P-25 clear Headlt. A-23 I. F. A-23 I. F.	.38 .38 1.00 .38 .38	60 60 60 60 60	00000	1750 1865 1520 1570 1675	17.5 17.5 15.2 15.7 15.7	16.4 16.4	1000 1000 500 1000 1000	Med. Med. Med. Med. Med.	618 43/4 618 618 618	43/8 43/8 3 43/8 43/8	C-9 C-9 C-5 C-9	X Any X Any Z X Any X Any
250	32	P-25 clear Headlt	1.50	60	C	4300	17.2		500	Med.	43/4	3	C-5A	

c Lumens per wait listed are for 220 and 230-volt lamps only. For 240, 250 and 260-volt lamps subtract 0.10 l.p.w.

d Lumens per wait listed are for 220 and 230-volt lamps only. For 240, 250 and 260-volt lamps subtract 0.30 l.p.w.

Will operate in any position, but lumen maintenance is best when burned vertically base up and lumens per wait values at 70% of rated life apply to this burning position only.

Can be burned in any position except within 45 degrees of vertically base up.

\* Approximate value.

Watts	Volls	Bulb	List Price	Std. Pkg. Qty.	Mazda B or Mazda C Lamp	Raied Inilial Lums,	Rated Initial Lums. per Watt	Rated Aver. Lab. Life (Hrs.)	Am- peres	Base	Max. Over-all Length, Inches	Aver. Light Center Length, Inches	Fil. Const.	Position of Burning
		MAZ	DA LA	MP	s Fo	R STR	PET	RAIL	WAY	SERVI	CE			
1.0 1.6	30 30	A-19 I. F		120 120	CC	357 648	11.9 13.5	2000 2000		Med. Med.	$3\frac{15}{16}$ $4\frac{7}{16}$	2½ 2½ 2½	C-9 C-9	I Any I Any
Watta ¶23	()	S-17 clear	.25	120	В	f 214	8.7	2000	0.214	Med.	45/8		S-1	Āny
¶36 ¶36	105,	A-19 clear Headlt A-21 I. F	.60 .17	120 120	B B	f 354 f 374	9.0 9.5	1000 2000	0.342 0.342	Med. Med.	3 15 4 7 4 16	2 3 2 16 2 1/8	C-5 C-9	Any ††Any
¶56 ¶56	115,	A-21 I. F	.24	120 60	B B	f 621 f 555	10.4 9.3	2000 1000	0.519 0.519	Med. Med.	4 7 4 34	27/8 21/6	C-9 C-5	††Any Any
¶94	120,	P-25 clear Headlt	1.10	60	В	f 933	9.4	1000	0.863	Med.	43/4	21/16	C-5	Any
101	125,	A-23 I. F	.50	60	С	1100	11.0	1500		Med.	616	43/8	C-9	x Any
201	-   130	PS-30 clear	.95	24	С	2920	14.6	1000		Med.	81/8	6	C-9	x Any
301		PS-35 clear	1.55	24	С	4860	16.2	1000		Mog.	97	7	C-7A	х Апу
			MAZD	A L	AMP	s FOR	AVI	ATION	I SER	VICE				
100	12	A-19 clear	2.15	12	С	2000	20.0	100		Md. Pf.	41/3	h 1¾	C-2	z
240	12	A-19 clear	5.25	12	С	5760	24.0	100		Md. Pf.	41/8	h 1¾	C-2	Z
420 420	12 12	G-25 clear	6.00 6.00	12 12	OO	10500 10500	25.0 25.0	100 100		Mg. Pf. Mog.	5 1/6 47/8	h 1113	C-2 C-2	Z
500	110, 115, 120	T-20 clear	3.90	6	С	8800	17.6	800		Mg. Pf.	9½	h 316	C-13B	Base down
1000	30	T-20 clear	7.00	6	С	26000	26.0	500		Mg. Bip.	9½	e 4	C-13	Base down
1000 1000	110, 115, 120	T-20 clear	6.50 6.50	6 6	C	20500 20500	20.5 20.5	500 500		Mg. <b>Bip.</b> Mog.	9½ 9¼	0 4 4¾	C-13 C-13	Base down Base down
1500	32	T-24 clear	15.00	6	С	42000	28.0	100		Mg. Bip.	10½	e 4	C-13B	Base down
3000	32	T-32 clear	25.00	4	С	84000	28.0	100		Mg. Bip.	14	e 5¾	C-13B	Base down
5000		G-64 clear	35.00	1	С	162500	32.5	75		Mg. Bip.	117/8	e 6½	C-13	Base down
10000	{115,} [120]	G-96 clear	85.00	1	С	325000	32.5	75		Mg. Bio.	173/g	e10	C-13	Base down
M	AZDA	LAMPS FOR M	OTIO	V PI	CTUI	RE PRO	DDUC	TION	SER	VICE—	110, 1	15 ar	ı <b>d</b> 120	Volts
Watts		Bulb	List Price	Std. Pkg. Qty.	Mazda B or Mazda C Lamp	Rated	Raied Initial Lums, per Watt	Aver. Lab. Life	Base	Max. Over-a Length Inches	, Cente	Fil. Const		Position of Burning
*1500	PS-52 c	llear	\$ 4.00 5.75 5.25	666	000	24000 38000 65000	25.3	250 250 ‡ 15	Mog	.   I3½	91/2 91/2 91/2	C-7A C-7A C-7A	.	X Any X Any X Any
15000	G-64 c	earear	13.00 35.00 85.00	6 1 1	000	56000 162500 325000	32.5		Mg. B	ip.   11 7/8	8 5 8 61/2 810	C-13 C-13 C-13	B	ase down ase down ase down

Nominal waits. The actual waits are determined by multiplying the volts by the amperes (the amperes are the same for all voltages). It This lamp, if burned horizontally, will not give as good service as when burned in a vertical position.

The light center length of this lamp is exclusive of base prongs; base prong being the small diameter part of metal post.

The lumens given cover only lamps of 115 volts. The lumens for other lamps are in proportion to the volts.

† Movieflood (Color Photography) 105-120 volts.

h The light center length of this lamp is the distance from center of light source to top of base fin.

¶ Modeling.

# Life at 115 volts.

\* Photographic (General Lighting).

Will operate in any position, but lumen maintenance is best when burned vertically base up and lumens per watt values at 70% of rated life apply to this burning position only.

2 Can be burned in any position except within 45 degrees of vertically base up

Walta	Bulb	List Price	Sid. Pkg.	Mazda B or Mazda	Rated Initial	Rated Initial Lume.	Rated Aver. Lab.	Base	Max. Over-all Length,	Aver. Light Center	Light Source Dimensions in mm	Fil. Const.	Position of Burning
			Qty.	C Lamp	Lums.	per Wait	Life (Hrs.)		Inches	Length, Inches	Width Height		

									_					
Base down or	CC-13	†4.8	†5.5	g 13/8	31/8	S. C. Bay.	50	18.7	1870	С	24	\$ 1.00	T-8 clear	100
can be barned	CC-13	†6.9	†6.2 †7.9	g 13/8 h 216	53/4	S. C. Bay. Md. Pf.	25 50	23.5 20.4	4700 4080	CC	24 24	1.50 2.20	T-8 clear T-10 clear	200
wit <u>hi</u> n	CC-13	†6.9	†7.9	3	51/2	Med.	50	20.4	4080	С	24	2.20	T-10 clear	200
25 degrees of	2 CC-8	†9.4	†7.0	h 236	53/4	Md. Pf.	25	24.0	7200	С	24	3.10	T-10 clear	y 300
vertically base	C-13D		†8.4	h 2 3	53/4	Md. Pf.	25	24.5	12250	Ç	24	4.90	T-10 clear	
down without		†10.7   †10.7	†14.1 †14.1	h 218 3	534 51/2	Md, Pf. Med.	50 50	25.5 25.5	12750 12750	CC	6	2.75 2.75	T-20 clear T-20 clear	
- materially	0.120	10.6	410.1	h 0.1	F9/	N/1 D/	- 05	200	10500			5.50	m 10 1	
affecting its	C-13D	19.0	†10.1	ի 2 <sub>1</sub> %	5¾	Md. Pí.	25	26.0	19500	C	24	5.70	T-12 clear	y 250
performance			†15.4	h 3 7 4 3 4		Mg. Pf.	50	27.0	27000	C	6	6.30	T-20 clear	
		†15.6 †11.6	†15.4 †11.6	4 3/4 h 2 3/4	9 1 5 5 3/4	Mog. Md. Pf.	50 25	27.0	27000	C	6	6.30 6.55	T-20 clear	
	O-10D	1111.0	1 [11.0	1 216	374	1 2/201. 1 1.	25	21.0	21000	<u> </u>	. 0	0.55	11-20 Clear	9 1000

### MAZDA LAMPS FOR SPOTLIGHT AND FLOODLIGHT SERVICE-110, 115 and 120 Volts

Any except	C-5 C-5	777	8	h 23 3	5 4 <sup>3</sup> ⁄ <sub>4</sub>	Md. Pf. Med.	200 200	13.6 13.6	1360 1360	CC	60 60	1.00 .85	P-25 clear Spot P-25 clear Spot	
within 45 degrees of	C-5 C-5 C-5	8 9	10 10 12	h 2 18 3 3	53/8 51/8 51/8	Md. Pf. Med. Med.	200 200 800	17.7 17.7 14.8	4425 4425 3700	000	24 24 24	1.65 1.50 1.50	G-30 clear Spot G-30 clear Spot G-30 clear Flood	250
vertically	C-5 C-5	.9	11 11	h 218	53/8 51/8	Md. Pf. Med.	200 200	20.0 20.0	8000	CC	24 24	2.80 2.65	G-30 clear Spot G-30 clear Spot	
ваве ир	C-5	10	13	41/4	716	Mog.	800	17.3	8650	С	12	2.90	G-40 clear Flood	500
Any position from vertical base down to horizontal	C-5 C-5 C-5 C-5	13 13 13 15	14 14 14 16	h 315 414 514 514	8 7 16 8 8	Mg. Pf. Mog. Mog. Mog.	200 200 200 800	22.0 22.0 22.0 19.0	22000 22000 22000 19000	0000	12 12 12 12	6.65 6.25 6.25 6.25	G-40 clear Spot G-40 clear Spot G-40 clear Spot G-40 clear Flood	1000 1000

#### MAZDA LAMPS FOR STREET SERIES SERVICE

All street series lamps are gas-filled and have clear bulbs. All standard street series lamps have an average rated laboratory life of 2000 hours; because of the severity of street lighting service, the average service life of street series lamps even under good operating conditions, is of the order of 25% less than the average laboratory life.

Amperes	Rated Initial Lumens	Bulb	List Price	Std. Pkg. Qly.	Aver. Volts	Aver. Walls	Rated Initial Lumens per Watt	% Lumens at 70 % of Rated Life	Filoment Const.	Base	Max. Over-all Length, Inches	Position of Burning and Average Light Center Length, Inches
6.6	1000	S-24½	\$0.45	60	9.5	62.5	16.0	100	C-8	Mog.	71/8	x Any, 53%
6.6 6.6 6.6	2500 4000 4000	PS-35 PS-35 T-20	.90 1.05 1.40	24 24 24	22.0 32.8 35.7	145.3 216.2 235.3	17.2 18.5 17.0	100 98 100	C-2 C-2 CC-6	Mog. Mog. Md. Bip.	9 14 9 14 6 1/2	X Any, 7
15	4000	PS-35	1.10	24	13.7	205.0	19.5	95	C-2	Mog.	97	Base down, 614
6.6	6000	PS-40	1.45	12	48.6	320.9	18.7	95	C-2	Mog.	913	I Any, 7
20	6000	PS-40	1.50	12	14.9	298.5	20.1	94	C-2	Mog.	9 <del>11</del>	Base up, 7 Base down, 61/4
20	10000	PS-40	1.85	12	25.0	500.0	20.0	91	C-7	Mog.	913	Base up, 7 Base down, 61/4 Base up, 7
20 20	15000 25000	PS-40 PS-52	2.55 4.80	12 6	37.3 60.7	746.3 1213.6	20.1 20.6	85 80	C-7 C-7	Mog. Mog.	9 <del>13</del> 13½	Base up, 91/2

g The light center length of this lamp is the distance from center of light source to top of base plus.

<sup>†</sup> Approximate average for 115 volts. Dimensions for other standard voltages will be supplied on request.

h The light center length of this lamp is the distance from center of light source to top of base fin.

k The light center length of this lamp is the distance from the center of the light source to the plane of the bottom of the bulb (exclusive of tip).

x Will operate in any position, but lumen maintenance is best when burned vertically base up and the per cent lumens at 70% of rated life apply to this burning

y This lamp should be used only in equipment that provides adequate forced cooling.

## **DISCOUNT SCHEDULE** LARGE LAMP PURCHASERS

#### Standard Package Discounts

A Large MAZDA Lamps. Standard package discounts may be allowed on the purchase of any quantity of any large MAZDA lamps for delivery at one time to one place, provided such purchase includes at least one (1) standard package quantity defined as follows:

(1) A standard package quantity is that "Standard Package Quantity" designated for each lamp in the manufacturer's price schedules, and the lamps in such a standard package quantity may be only of one voltage and finish.

(2) An assortment of different large MAZDA lamps which have the same designated "Standard Package Quantity", provided the total quantity of lamps in the assortment is equal to the designated "Standard Package Quantity", and lamps in such a standard package quantity may be of different voltages and finishes of bulb.

B. Type D Lamps. Standard package discounts on Type D lamps may be allowed only on any purchase of an exact "Standard Package Quantity" (or multiple thereof) as designated for each lamp in the manufacturer's price schedules, and the lamps in such a standard package quantity may be only of one voltage and finish of bulb.

An assortment of Type D lamps to determine a standard package quantity may be made only of the 30-watt G-19 bulb lamps of different colors (but not inside frosted) provided the quantity of lamps of any one color is a multiple of six and the total quantity of the assortment is 60.

C. Under no circumstances may Type D lamps and large MAZDA lamps be combined for the purpose of allowing standard package discounts.

#### TO PURCHASERS WITHOUT CONTRACT

Any purchase of less than \$5.00 list value	0%
Any purchase of \$5.00 list value but less than	
standard package quantities for delivery at	
one time to one place	15%

Any purchase of at least one standard package quantity as provided above for delivery at 

> TO PURCHASERS UNDER FORMS E AND CE CONTRACT

Basis of Form E or CE Contract	Standard Package Discount as provided above	Broken Package Discount	Minimum Net Purchases Under Each Basis to Reach Next Higher Basis
Less than \$ 150	20%	15%	\$ 153.85
150	22%	17%	256.58
250	24%	19%	513.52
500	26%	21%	1,027.78
1,000	28%	23%	2,571.43
2,500	30%	25%	5,147.06
5,000	<b>32%</b>	27 <i>%</i>	10,149.25
10,000	33%	28 <i>%</i>	20,303.03
20,000	34%	29 <i>%</i>	30,461.54
30,000	35%	30%	50,781.25
50,000	36%	31%	101,587.30
100,000	37%	32%	152,419.35

Provision is made for contracts on less than the \$150 basis in order that purchasers not at the time eligible to at least the \$150 basis, may obtain the greatest discounts justified by their total purchases within a year, in case purchases amount to \$150 or more.

33%

34% 35%

228,688.53

305,000.00

38% 39% 40%

150,000

225,000

#### **HOW TO ORDER LAMPS**

All orders should give the following information:

Quantity—Number of lamps desired. Purchasers will avoid delays and get best discount by ordering standard package quantities.

Size of Lamps—Specify waitage of multiple lamps and lumens of street series lamps.

Voltage—For multiple lamps.

Amperes—For series lamps.

Bulb-For example: A-19, G-25, T-8, P-19, PS-30, etc. The letter in the bulb designation indicates its shape and the figure its approximate diameter in eighths of an inch. Thus a PS-30 bulb is pear shaped and is approximately 30 or 33/4 inches in diameter. Gindicates a round (globular), and Ta tubular bulb. The letter "A" indicates the standard line bulb shape with inside frost, unless otherwise noted.

Finish of Bulb-Clear, inside frosted, white bowl, daylight, white, etc.

Base-Medium screw, mogul screw, candelabra screw, etc.

Service—For example: Projection, Floodlight, Locomotive Headlight, etc.

## **EXTRA CHARGES** FOR SPECIAL FEATURES

#### WHITE, ALL FROSTED AND WHITE BOWL LAMPS OF MANUFACTURER'S STANDARD SPRAY COATINGS

List Price of Clear or Inside Frosted Lamps	List Additional Charge for White, All Frosted or White Bowl	List Price of Clear or Inside Frosted Lamps	List Additional Charge for White, All Frosted or White Bowl
Less than \$1.00	\$0.05	\$4.00 to \$4.99	\$0.25
\$1.00 to 1.99	.10	5.00 to 5.99	.30
2.00 to 2.99	.15	6.00 to 6.99	.35
3.00 to 3.99	.20	7.00 to 7.99	.40

Special Lamps—Any MAZDA lamp requiring a change in construction from the standard, that is, in voltage, bulb shape or finish, basing or special etching will take a special price, which may be obtained upon application. All orders for special lamps except special etching may be filled either short or in excess, within the limits of 10 per cent, except that on orders for 10 lamps or less there will not be any shortage or excess. Orders for MAZDA lamps with special etching may be filled either short or in excess by 5 per cent; except that on orders for less than 40 lamps the shortage or excess may equal but not exceed two lamps.

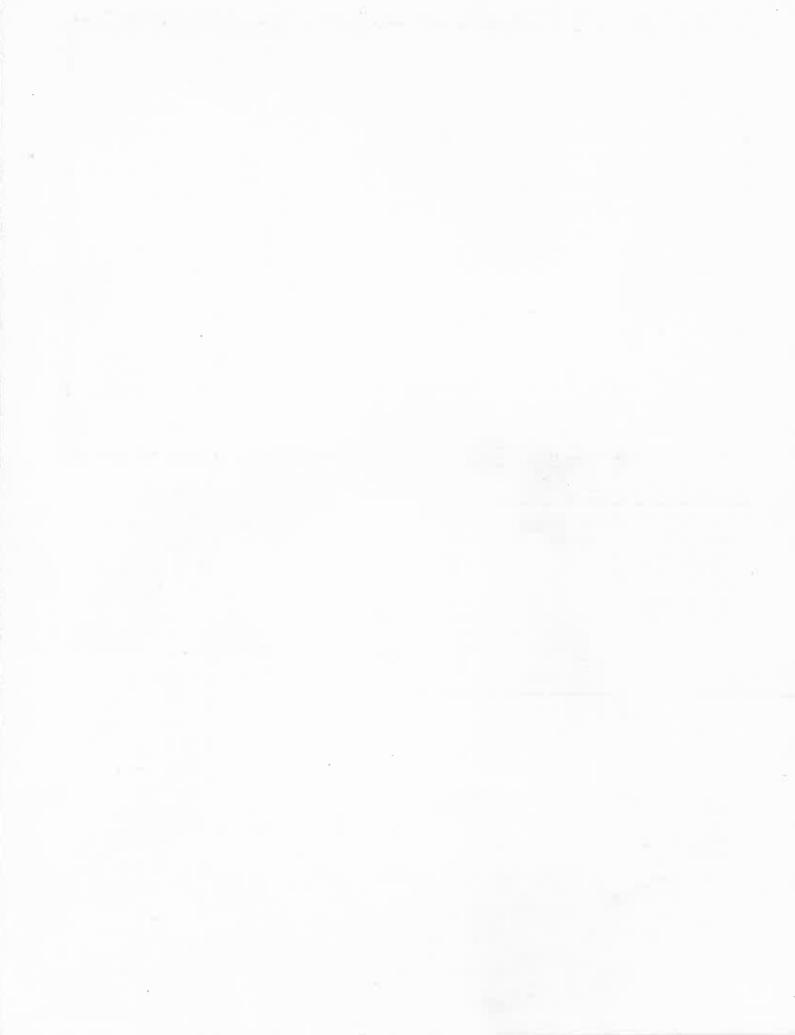
## TRANSPORTATION ALLOWANCES AND CHARGES TO PURCHASERS

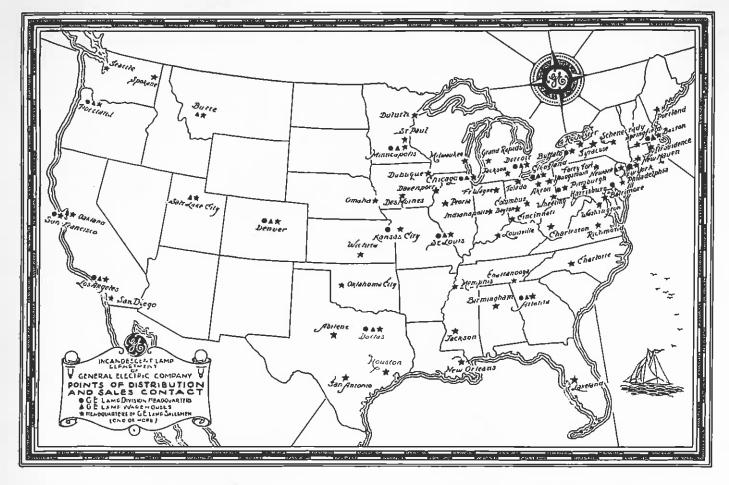
All lamps listed in price schedules will be sold and billed to purchasers f. o. b. point of shipment, with transportation (excluding cartage) allowed on shipments consisting of not less than one standard package, to all points in domestic territory.

Domestic territory shall be considered to be the United States, its territories and dependencies, including Alaska, the Hawaiian Islands, the Panama Canal Zone, Porto Rico, and the Virgin Islands, but not the Philippines, which with the rest of the world shall be regarded as foreign territory.

Should any purchaser desire its lamps shipped "Charges Collect," such purchaser, in deducting transportation charges from invoices covering lamps so shipped, will not be allowed to deduct cartage.

Claims for loss or damage in transportation must be filed with carriers within nine months after date of delivery or in case of non-delivery within nine months after a reasonable time for delivery has elapsed. Claims for concealed damage will be accepted by carriers only when such damage has been reported to them within fifteen days after delivery. Purchasers desiring the assistance of the manufacturer in filing such claims must report them to the manufacturer within a reasonable time so as to enable the manufacturer to comply with the common carrier's requirements.





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Sales Division headquarters of the Incandescent Lamp Department of General Electric are located in seventeen leading cities throughout the United States, with branch sales offices in other important centers. Complete warehousing facilities guarantee 24-hour distribution anywhere in the country.

