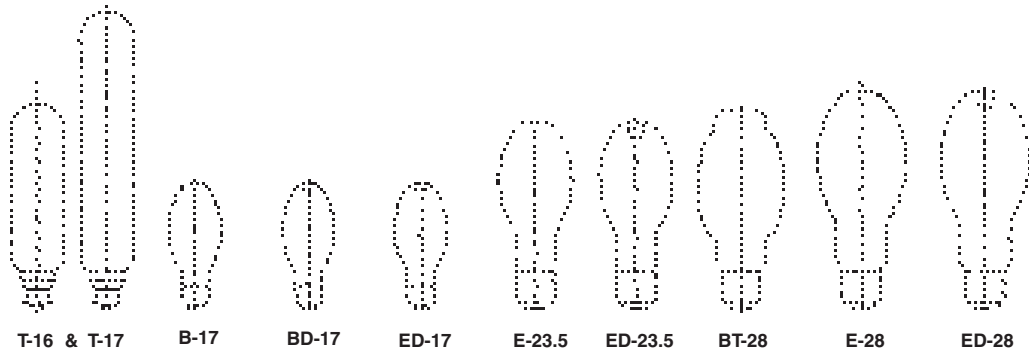


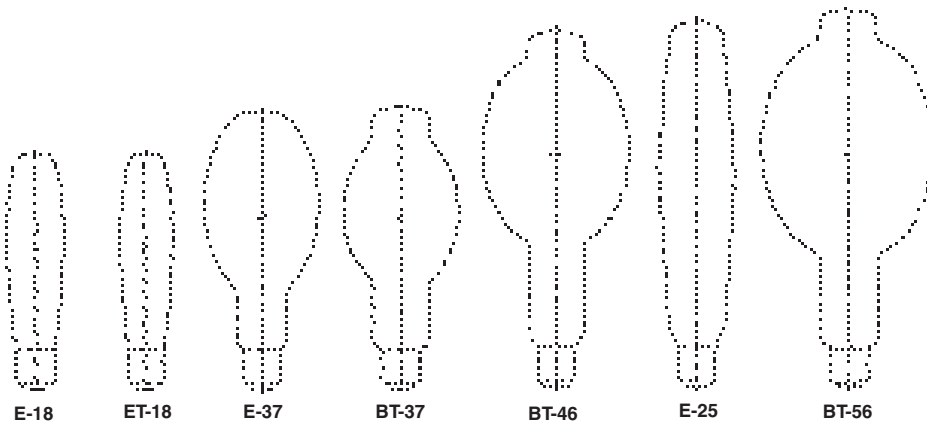
LAMP ELECTRICAL DATA

Source Comparison Chart

CHARACTERISTIC	INCANDESCENT	QUARTZ HALOGEN	MERCURY VAPOR	METAL HALIDE	PULSE START METAL HALIDE	HIGH PRESSURE SODIUM	LOW PRESSURE SODIUM	COMPACT FLUORESCENT
INITIAL COST	LOW	LOW	HIGHER	HIGHER	HIGHER	HIGHER	HIGHER	LOWER
INITIAL LUMENS	15-24	15-24	30-60	69-115	60-111	79-130	62-150	60-80
EFFICIENCY	POOR	POOR	FAIR	GOOD	BEST	BETTER	BEST	FAIR
AVERAGE RATED LAMP LIFE (HRS)	1000	2000	24000	10-15000	10-30000	24000	20000	10000
ANNUAL OPERATING COSTS	HIGH	MEDIUM	LOW	LOW	LOW	LOW	VERY LOW	LOW
LONG BURNING HOURS	FAIR	FAIR	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD
SHORT BURNING HOURS	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD
COLOR ACCEPTABILITY	GOOD	VERY GOOD	FAIR TO GOOD	VERY GOOD	VERY GOOD	FAIR TO GOOD	VERY POOR	GOOD
DEGREE OF LIGHT CONTROL	VERY GOOD	VERY GOOD	FAIR	GOOD	GOOD	GOOD	POOR	FAIR
MAINTAINED LUMEN OUTPUT	GOOD	VERY GOOD	POOR	GOOD	GOOD	GOOD	VERY GOOD	GOOD
LONG RANGE PROJECTION	GOOD	FAIR	POOR	GOOD	GOOD	GOOD	POOR	POOR
MEDIUM RANGE PROJECTION	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	POOR	POOR
HOT RESTART TIME	INSTANT	INSTANT	10 MINUTES	10-15 MINUTES	2-4 MINUTES	1-3 MINUTES	1 MINUTE	INSTANT



LAMP SOURCE	BULB SHAPE									
	T-16 & T-17	B-17	BD-17	ED-17	E-23 1/2	ED-23 1/2	BT-28	E-28	ED-28	
HPS	—	35, 50, 70, 100, 150W	—	50, 70, 100, 150W	50, 70, 100, 150W	50, 150W	150, 250W	150, 250W	—	
MH	—	70W	50, 70, 100, 150, 175W	50, 70, 100, 150, 175W	175W	175, 250, 400W	175, 250W	175, 250W	—	
MERC	—	50, 75, 100W	50, 75, 100W	—	100W	—	—	—	70, 100, 150, 175, 250, 400W	
LPS	18W LPS	35W LPS	—	—	—	—	—	—	—	



LAMP SOURCE	BULB SHAPE						
	E-18	ET-18	E-37	BT-37	BT-46	E-25	BT-56
HPS	200, 250, 310, 400W	200, 250, 310, 400W	400W	400, 750W	—	1000W	—
MH	—	250W	400W	400, 100W	—	—	1000, 1500, 1650W
MERC	—	—	400W	400W	700W	—	1000W
LPS	—	—	—	—	—	—	—

BULB SHAPE

B=Blown
 BD= Blown Dimpled
 BT=Blown Tubular
 E=Elliptical
 ED=Elliptical Dimpled
 ET=Elliptical Tubular
 T=Tubular

Product information is subject to change without notice.

LAMP ELECTRICAL DATA

LAMP DATA

Watts	Lamp Type	Lamp Base	ANSI Code	Desc.	Life (Hrs.)	Initial Lumens
HIGH PRESSURE SODIUM						
35	E17	Medium	S76HA	Clear	16,000	2,250
35	E17	Medium	S76HB	Diffuse	16,000	2,150
50	E17	Medium	S68LP	Clear	24,000+	4,000
50	E17	Medium	S68LR	Diffuse	24,000+	3,800
70	E23 1/2	Mogul	S62ME	Clear	24,000+	5,800
70	E23 1/2	Mogul	S62MF	Diffuse	24,000+	5,400
70	E17	Medium	S621G	Clear	24,000+	5,800
70	E17	Medium	S62LH	Diffuse	24,000+	5,400
100	E23 1/2	Mogul	S54SB	Clear	24,000+	9,500
100	E23 1/2	Mogul	S54ML	Diffuse	24,000+	8,800
100	E17	Medium	S54SG	Clear	24,000+	9,500
100	E17	Medium	S54SH	Diffuse	24,000+	8,800
150	E23 1/2	Mogul	S55SC	Clear	24,000+	16,000
150	E23 1/2	Mogul	S55MD	Diffuse	24,000+	15,000
150	E17	Medium	M110	Clear	24,000+	16,000
150	E17	Medium	M98	Diffuse	24,000+	15,000
250	E18	Mogul	S50VA	Clear	24,000+	27,500
250	E28	Mogul	S50VC	Diffuse	24,000+	23,400
400	E18	Mogul	S51WA	Clear	24,000+	50,000
400	E37	Mogul	S51WB	Diffuse	24,000+	47,500
750	BT37	Mogul	S111NH	Clear	24,000+	99,000
1000	E25	Mogul	S52XB	Clear	24,000+	140,000
METAL HALIDE						
50	ED17	Medium		Clear	15,000	3,400
70	ED17	Medium		Clear	15,000	5,600
100	ED17	Medium	M90	Clear	15,000	9,000
150	ED17	Medium	M57	Clear	10,000	13,500
175	ED17	Medium	M57	Clear	10,000	15,000
175	ED17	Medium	M57	Diffuse	10,000	15,000
175	E28	Mogul	M57PE	Clear	10,000	14,000
175	E28	Mogul	M57PF	Diffuse	10,000	14,000
250	E28	Mogul	M58PG	Clear	10,000	20,500
250	E28	Mogul	M58PH	Diffuse	10,000	20,500
400	E37	Mogul	M59PJ	Clear	20,000	36,000
400	E37	Mogul	M59PK	Diffuse	20,000	34,500
400	E37	BU Mogul	M59	Clear	20,000	40,000
400	ED28	Mogul	M59	Clear	20,000	36,000
400	E37	POMB	M59	Clear	20,000	40,000
1000	BT56	Mogul	M47PA	Clear	12,000	110,000
1000	BT56	Mogul	M47PB	Diffuse	12,000	110,000
1000	BT56	BU Mogul	M47	Clear	12,000	115,000
1000	BT37	Mogul	M47	Clear	12,000	110,000
MERCURY VAPOR						
50	E17	Medium	H45AY	Deluxe White	16,000	1,140
100	A23	Medium	H38LL	Clear	18,000	3,700
100	R40	Medium	H38MP	Deluxe White	18,000	4,000
100	E23 1/2	Mogul	H38JA	Deluxe White	24,000	4,200
175	E28	Mogul	H39KC	Deluxe White	24,000	8,600
175	E28	Mogul	H39KB	Clear	24,000	7,950
175	R40	Medium	H39BP	Deluxe White	24,000	5,700
250	E28	Mogul	H37KC	Deluxe White	24,000	12,100
250	E28	Mogul	H37KB	Clear	24,000	11,200
400	E37	Mogul	H33GL	Deluxe White	24,000	22,500
400	E37	Mogul	H33CP	Clear	24,000	21,000
1000	BT56	Mogul	H36GW	Deluxe White	24,000	63,000
1000	BT56	Mogul	H36GV	Clear	24,000	57,000

Watts	Lamp Type	Lamp Base	Life (Hours)	Initial Lumens
QUARTZ				
150	T4	D.C. Bayonet	2,000	2,800
250	T4	D.C. Bayonet	2,000	5,000
300	T3	RSC	2,000	5,950
500	T3	RSC	2,000	11,100
500	PAR56	Mogul End Prong	4,000	8,000
1000	T3	RSC	2,000	21,500
1000	PAR64	Extended Mogul End Prong		4,000
19,400				
1500	T3	RSC	2,000	35,800
INCANDESCENT				
60	A19	Medium	1,000	870
100	A19	Medium	750	1,750
150	PAR38	Medium	2,000	1,740
150	R40	Medium	2,000	1,900
200	PAR46	Medium Side Prong	2,000	2,300
200	PAR56	Mogul End Prong	2,000	
300	PAR56	Mogul End Prong	2,000	3,840
500	PAR64	Extended Mogul End Prong	2,000	6,500

APPROXIMATE INITIAL OUTPUT OF TYPICAL R AND PAR LAMPS

Average Max.

Watts	Lamp	Candelas C.P. ¹	Beam Spread ²	Beam Lumens	Total
FLOOD LAMPS					
75 R30	400		136°	730	900
150	R40	1040	124°	1650	1900
300	R40	1950	123°	3200	3650
500	R40	3800	124°	6000	6500
150	PAR38	4000	60°	1690	1740
300	PAR56	24000 ⁴	19° X 34°	2100	3840
300	PAR56	11000 ⁵	27° X 52°	2200	3840
500	PAR64	37000 ⁴	19° X 35°	3300	6500
500	PAR64	13000 ⁵	32° X 55°	3400	6500
SPOT LAMPS					
75 R30	1540 ³		78° 760	900	
150	R40	5400 ³	49°	1550	1900
300	R40	8900 ³	60°	3100	3650
500	R40	21000 ³	42°	4700	6500
150	PAR38	11500 ³	28°	1200	1740
300	PAR56	68000 ^{3,6}	14° X 20°	1800	3840
300	PAR56	—	—	—	—
500	PAR64	11000 ^{3,6}	14° X 19°	3000	6500
500	PAR64	—	—	—	—

¹ Average in 10° Cone. ² To 10% (approx.) of maximum candlepower. ³ Average in 5° Cone.

COMPACT FLUORESCENT LAMP DATA

Watts	Lamp Type	Base	Description	Life	Initial
26	PLT	GX24q-3	4 Pin Triple Tube	10000	1800
28	PLC	GX32d-3	4 Pin Quad Tube	10000	1600
32	PLT	GX24q-3	4 Pin Triple Tube	10000	2400
42	PLT	GX24q-4	4 Pin Triple Tube	10000	3200

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LAMP ELECTRICAL DATA

PULSE START METAL HALIDE LAMP DATA

WATTS	LAMP SHAPE	BASE	ORIENTATION	ANSI	DESCRIPTION	LIFE (HRS.)	INITIAL LUMENS
50	ED17	MEDIUM	UNIVERSAL	M110	ENCLOSED CLEAR	10000	3400
50	ED17	MEDIUM	UNIVERSAL	M110	ENCLOSED COATED	10000	3200
50	ED17	MEDIUM	UNIVERSAL	M110	OPEN CLEAR	10000	3200
50	ED17	MEDIUM	UNIVERSAL	M110	OPEN COATED	10000	3000
70	ED17	MEDIUM	UNIVERSAL	M98	ENCLOSED CLEAR	15000	5600
70	ED17	MEDIUM	UNIVERSAL	M98	ENCLOSED COATED	15000	5300
70	ED28	MOGUL	UNIVERSAL	M98	ENCLOSED CLEAR	15000	5600
70	ED17	MEDIUM	UNIVERSAL	M98	OPEN CLEAR	15000	5600
70	ED17	MEDIUM	UNIVERSAL	M98	OPEN COATED	15000	5300
100	ED17	MEDIUM	UNIVERSAL	M90	ENCLOSED CLEAR	15000	9000
100	ED17	MEDIUM	UNIVERSAL	M90	ENCLOSED COATED	15000	8500
100	ED28	MOGUL	UNIVERSAL	M90	ENCLOSED CLEAR	15000	9000
100	ED28	MOGUL	UNIVERSAL	M90	ENCLOSED COATED	15000	8500
100	ED17	MEDIUM	UNIVERSAL	M90	OPEN CLEAR	15000	8500
100	ED17	MEDIUM	UNIVERSAL	M90	OPEN COATED	15000	8100
100	ED28	MOGUL	UNIVERSAL	M90	OPEN COATED	15000	8100
150	ED17	MEDIUM	UNIVERSAL	M102	ENCLOSED CLEAR	15000	15000
150	ED17	MEDIUM	UNIVERSAL	M102	ENCLOSED COATED	15000	14250
150	ED17	MOGUL	UNIVERSAL	M102	ENCLOSED CLEAR	15000	15000
150	ED17	MOGUL	UNIVERSAL	M102	ENCLOSED COATED	15000	14250
150	ED17	MEDIUM	UNIVERSAL	M102	OPEN CLEAR	15000	14250
150	ED17	MEDIUM	UNIVERSAL	M102	OPEN COATED	15000	13500
150	ED28	MOGUL	UNIVERSAL	M102	OPEN CLEAR	15000	14250
150	ED28	MOGUL	UNIVERSAL	M102	OPEN COATED	15000	13500
175	ED17	MEDIUM	BASE UP +/- 15°	M137	ENCLOSED CLEAR	15000	17500
175	ED17	MEDIUM	BASE UP +/- 15°	M137	ENCLOSED COATED	15000	16600
175	ED28	MOGUL	BASE UP +/- 15°	M137	ENCLOSED CLEAR	15000	17500
175	ED28	MOGUL	BASE UP +/- 15°	M137	ENCLOSED COATED	15000	16600
200	ED17	MEDIUM	BASE UP +/- 15°	M136	ENCLOSED CLEAR	12000	21000
200	ED17	MEDIUM	BASE UP +/- 15°	M136	ENCLOSED COATED	12000	20000
200	ED28	MOGUL	UNIVERSAL	M136	ENCLOSED CLEAR	15000	21000
200	ED28	MOGUL	UNIVERSAL	M136	ENCLOSED COATED	15000	20000
200	ED28	MOGUL	VERTICAL +/- 15°	M136	OPEN CLEAR	15000	20000
200	ED28	MOGUL	VERTICAL +/- 15°	M136	OPEN COATED	15000	19000
250	ED28	MOGUL	BASE UP +/- 90°	M138	ENCLOSED CLEAR	15000	26300
250	ED28	MOGUL	BASE UP +/- 90°	M138	ENCLOSED COATED	15000	25000
250	ED28	MOGUL	BASE UP +/- 15°	M138	OPEN CLEAR	15000	25000
250	ED28	MOGUL	BASE UP +/- 15°	M138	OPEN COATED	15000	23800
320	ED28	MOGUL	BASE UP +/- 15°	M132	ENCLOSED CLEAR	20000	34000
320	ED28	MOGUL	BASE UP +/- 15°	M132	ENCLOSED COATED	20000	32300
320	ED28	MOGUL	UNIVERSAL	M132	ENCLOSED CLEAR	20000	33000
320	ED28	MOGUL	UNIVERSAL	M132	ENCLOSED COATED	20000	31000
320	ED37	MOGUL	UNIVERSAL	M132	ENCLOSED CLEAR	20000	33000
320	ED37	MOGUL	UNIVERSAL	M132	ENCLOSED COATED	20000	31000
320	ED28	MOGUL	BASE UP +/- 15°	M132	OPEN CLEAR	20000	32300
320	ED28	MOGUL	BASE UP +/- 15°	M132	OPEN COATED	20000	30600
320	ED37	MOGUL	BASE UP +/- 15°	M132	OPEN CLEAR	20000	32300
320	ED37	MOGUL	BASE UP +/- 15°	M132	OPEN COATED	20000	30600
350	ED37	MOGUL	UNIVERSAL	M131	ENCLOSED CLEAR	20000	38000
350	ED37	MOGUL	UNIVERSAL	M131	ENCLOSED COATED	20000	36000
350	ED28	MOGUL	UNIVERSAL	M131	ENCLOSED CLEAR	20000	38000
350	ED28	MOGUL	UNIVERSAL	M131	ENCLOSED COATED	20000	36000
350	ED37	MOGUL	VERTICAL +/- 15°	M131	OPEN CLEAR	20000	36000
350	ED37	MOGUL	VERTICAL +/- 15°	M131	OPEN COATED	20000	34200
350	ED28	MOGUL	VERTICAL +/- 15°	M131	OPEN CLEAR	20000	36000
350	ED28	MOGUL	VERTICAL +/- 15°	M131	OPEN COATED	20000	34200
400	ED37	MOGUL	BASE UP +/- 90°	M135	ENCLOSED CLEAR	20000	44000
400	ED37	MOGUL	BASE UP +/- 90°	M135	ENCLOSED COATED	20000	42000
400	ED37	MOGUL	BASE UP +/- 15°	M135	ENCLOSED CLEAR	20000	44000
400	ED37	MOGUL	BASE UP +/- 15°	M135	ENCLOSED COATED	20000	42000
400	ED28	MOGUL	BASE UP +/- 90°	M135	ENCLOSED CLEAR	20000	44000
400	ED28	MOGUL	BASE UP +/- 90°	M135	ENCLOSED COATED	20000	42000
400	ED37	MOGUL	BASE UP +/- 15°	M135	OPEN CLEAR	20000	42000
400	ED37	MOGUL	BASE UP +/- 15°	M135	OPEN COATED	20000	40000
400	ED28	MOGUL	BASE UP +/- 15°	M135	OPEN CLEAR	20000	42000
400	ED28	MOGUL	BASE UP +/- 15°	M135	OPEN COATED	20000	40000
450	ED37	MOGUL	BASE UP +/- 15°	M144	ENCLOSED CLEAR	20000	50000
450	ED37	MOGUL	BASE UP +/- 15°	M144	ENCLOSED COATED	20000	47500
450	ED37	MOGUL	BASE UP +/- 15°	M144	OPEN CLEAR	20000	47500
450	ED37	MOGUL	BASE UP +/- 15°	M144	OPEN COATED	20000	45200



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