



PROTECT
THE ENVIRONMENT

\$ave

electrical billing


lamp replacement cost

Air Conditioning Cost




ER Low Voltage Halogen Lamps

Low Voltage Halogen Lamps **JC/ER, MR11/ER, MR16/ER, AR111/ER** 4000 HRS

SPECIFICATIONS					
JC/ER	Voltage	Wattage	Base	Color Temp	Lumen (Lm)
	12	8	G4	2800K	100
	12	16	G4 / GY6.35	2900K	300
	12	28	GY6.35	3000K	600
	12	40	GY6.35	3000K	860







SPECIFICATIONS							
MR11/ER	ANSI code	Voltage	Wattage	Beam Angle	Base	Color Temp	Light intensity (cd)
	FTB/ER	12	16	10°	GU4	2900K	4100
	FTC/ER	12	16	20°	GU4	2900K	1750
	FTD/ER	12	16	30°	GU4	2900K	700
	FTE/ER	12	28	10°	GU4	3000K	7000
	FTF/ER	12	28	20°	GU4	3000K	3000
	FTH/ER	12	28	30°	GU4	3000K	1500
MR16/ER	ANSI code	Voltage	Wattage	Beam Angle	Base	Color Temp	Light intensity (cd)
	ESX/ER	12	16	12°	GU5.3	2900K	5000
	BAB/ER	12	16	36°	GU5.3	2900K	700
	----	12	16	60°	GU5.3	2900K	300
	FMT/ER	12	28	12°	GU5.3	3000K	10000
	FMW/ER	12	28	36°	GU5.3	3000K	1300
	----	12	28	60°	GU5.3	3000K	560
	EXT/ER	12	40	12°	GU5.3	3050K	13000
	EXZ/ER	12	40	24°	GU5.3	3050K	4000
	EXN/ER	12	40	36°	GU5.3	3050K	1800
	FNV/ER	12	40	60°	GU5.3	3050K	1000

* Aluminium and Dichroic versions are available

SPECIFICATIONS						
AR111/ER	Voltage	Wattage	Beam Angle	Base	Color Temp	Light Intensity (cd)
	12	28	8° / 24° / 45°	G53	3000K	Replace traditional AR111 35W
	12	40	8° / 24° / 45°	G53	3000K	Replace traditional AR111 50W
	12	75	8° / 24° / 45°	G53	3000K	Replace traditional AR111 100W



ADVANTAGES


-  **Saving 20% of power energy** with NO sacrifice of lighting quality
-  Double the average lamp life compare with standard 2,000 hours lamps. Up to **4,000 hours**
-  Xenon Halogen technology to **enhance** light output **performance**
-  Optimized design of filament structure provides **excellent light distribution**
-  High colour temperature gives more **crispy white light**
-  **Lower heat generation** resulting in reduced air conditioning and heat stress on ambience

ER vs Traditional Lamps					
Energy Reduction ER series	Traditional Halogen MR11/16 Lamps	Traditional Halogen JC 2-pins lamps	Traditional Halogen AR111 lamps	Save on Energy	Electrical billing * saving / year
8W	--	10W	--	20%	US\$ 2.63
16W	20W	20W	--	20%	US\$ 5.26
28W	35W	35W	35W	20%	US\$ 9.20
40W	50W	50W	50W	20%	US\$ 13.14
75W	--	--	100W	25%	US\$ 32.85

* based on 24 hrs operation/day - US\$0.15/1 KWH

ER Line Voltage Halogen PAR Lamps

Line Voltage Halogen Lamps **G9/ER, GU10/ER, PAR20/ER, PAR30/ER** 2000 HRS

SPECIFICATIONS					
G9/ER	Voltage	Wattage	Base	Color Temp	Lumen(Lm)
	120V, 230V, 240V	33	G9	3000K	450

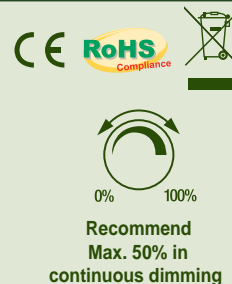
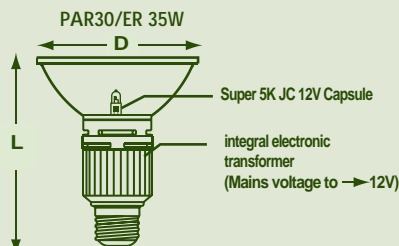
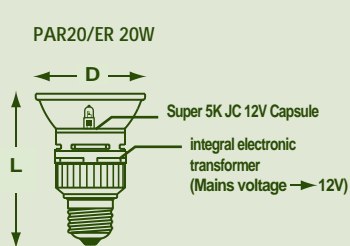
SPECIFICATIONS						
GU10/ER	Voltage	Wattage	Beam Angle	Base	Color Temp	Intensity (cd)
	120V, 230V, 240V	40	30°	GU10 / GZ10	3000K	900

* GZ10/ER is available for Dichroic version






5000 HRS

SPECIFICATIONS								
PAR20/ER	Voltage	Wattage	Beam Angle	Base	Color Temp	Intensity (cd)	Diameter (D)	Length (L)
PAR20/ER 20W ALU SP	120V, 230V, 240V	20	12°	E27	3000K	3400	63.5 mm	91 mm
PAR20/ER 20W ALU FL	120V, 230V, 240V	20	24°	E27	3000K	1000	63.5 mm	91 mm

SPECIFICATIONS								
PAR30/ER	Voltage	Wattage	Beam Angle	Base	Color Temp	Intensity (cd)	Diameter (D)	Length (L)
PAR30/ER 35W ALU SP	120V, 230V, 240V	35	13°	E27	3000K	6000	95 mm	119 mm
PAR30/ER 35W ALU FL	120V, 230V, 240V	35	30°	E27	3000K	2000	95 mm	119 mm



ADVANTAGES

-  **G9/ER and GU10/ER save 17%-20% energy** in replacing traditional lamps
-  **Huge power reduction 50%-60% in using PAR/ER** instead of traditional Halogen PAR lamps/Incandescent Reflector lamps with higher light intensity(cd).
-  **5,000 hours long life** = twice the life time of standard Halogen (PAR20/PAR30) or 5 times of incandescent reflector lamps (R63/R95)
-  Optimized design of filament structure provides **excellent light distribution**
-  High colour temperature gives more **crispy white light**
-  **Lower heat generation** resulting in reduced air conditioning and heat stress on ambience

ER vs Traditional Lamps						
Energy Reduction ER series	Traditional PAR 20	Traditional PAR 30	Traditional G9 lamp	Traditional GU10 lamp	Save on Energy	Electrical billing * saving / year
20W	50W	--	--	--	60%	US\$ 39.42
35W	--	75W	--	--	50%	US\$ 52.56
33W	--	--	40W	--	17%	US\$ 9.20
40W	--	--	--	50W	20%	US\$ 13.14

* based on 24 hrs operation/day - US\$0.15/1 KWH

ER JDD Double Envelope Halogen GLS

JDD Double Envelope Halogen GLS **A55/ER, A60/ER, CANDLE/ER, ROUND/ER**
R50/ER, R63/ER, R80/ER

2000 HRS

SPECIFICATIONS

A55/ER, A60/ER		Voltage	Wattage	Base	Lumen (Lm)
		120V, 230V, 240V	18W	E26/E27/B22d	210
		120V, 230V, 240V	28W	E26/E27/B22d	350
		120V, 230V, 240V	42W	E26/E27/B22d	630
		120V, 230V, 240V	52W	E26/E27/B22d	810
		120V, 230V, 240V	70W	E26/E27/B22d	1245
		120V, 230V, 240V	105W	E26/E27/B22d	1750






CANDLE/ER		Voltage	Wattage	Base	Lumen (Lm)
		120V, 230V, 240V	18W	E14/B15d/E26/E27/B22d	210
		120V, 230V, 240V	28W	E14/B15d/E26/E27/B22d	350
		120V, 230V, 240V	42W	E14/B15d/E26/E27/B22d	630

ROUND/ER		Voltage	Wattage	Base	Lumen (Lm)
		120V, 230V, 240V	18W	E14/B15d/E26/E27/B22d	210
		120V, 230V, 240V	28W	E14/B15d/E26/E27/B22d	350
		120V, 230V, 240V	42W	E14/B15d/E26/E27/B22d	630

R50/ER, R63/ER, R80/ER		Voltage	Wattage	Base	Intensity (cd)
	R 50	120V, 230V, 240V	28W	E14	430
	R 63	120V, 230V, 240V	42W	E26/E27	900
	R 80	120V, 230V, 240V	42W	E26/E27	900
	R 80	120V, 230V, 240V	70W	E26/E27	1200



ADVANTAGES

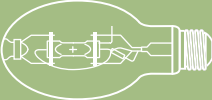

-  **Save 30% energy** in replacing Incandescent lamp bulbs
-  **2,000 hours** average lamp life is twice the life of ordinary light bulbs
-  High efficiency JCD Halogen capsule in conventional bulb shell provides **brilliant attractive Halogen light**
-  No blackening on bulb shell - **constant brightness** throughout lamp life
-  **UV-STOP** Quartz capsule

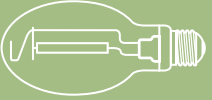

ER vs Traditional Lamps			
Energy Reduction GLS/ER	Traditional GLS lamps	Save on energy	Electrical billing * saving / year
18W	25W	30%	US\$ 9.20
28W	40W	30%	US\$ 15.77
42W	60W	30%	US\$ 23.65
52W	75W	30%	US\$ 30.22
70W	100W	30%	US\$ 39.42
105W	150W	30%	US\$ 59.13

* based on 24 hrs operation/day - US\$0.15/1 KWH

ER High Intensity Discharge Lamps

High Intensity Discharge Lamps **MH/ER** and **SON/ER**

SPECIFICATIONS				
MH-E/ER	MH-T/ER	Wattage (W)	Base	Lumen (Lm)
		225	E40	20000
		360	E40	35000

SPECIFICATIONS				
SON-E/ER	SON-T/ER	Wattage (W)	Base	Lumen (Lm)
		225	E40	25000
		360	E40	43000



ADVANTAGES

-  **Save 10% energy** in replacing traditional HID lamps with NO sacrifice of light performance
-  **Direct retrofit** with no change in lighting installation
-  High Luminous efficacy with **very good color rendition**
-  **Universal** burning position
-  **Long burning hours**

ER vs Traditional Lamps			
Energy Reduction HID/ER	Traditional HID lamps	Save on energy	Electrical billing * saving / year
225W	250W	10%	US\$ 32.85
360W	400W	10%	US\$ 52.56

* based on 24 hrs operation/day - US\$0.15/1 KWH

ER Fluorescent Lamps

Fluorescent Lamp T8/ER

SPECIFICATIONS				
T8/ER	Wattage (W)	Base	CRI (Ra)	Lumen (Lm)
F15T8/ER	15	G13	80-89, 1B	1200
F31T8/ER	31	G13	80-89, 1B	2800
F50T8/ER	50	G13	80-89, 1B	4600

Tri-Phosphor color:	827 = Incand. Warm White	2700K
	830 = Warm White	3000K
	840 = Cool White	4200K
	865 = Daylight	6500K



ADVANTAGES

- Save 15% energy**
- 40,000 hrs lamp life.** Double the service life time of standard T8 lamps
- Directly replace** existing T8 fluorescent lamps without changing in lamp dimension and lighting installation
- Coated with high efficiency tri-phosphors with **high CRI**



ER vs Traditional Lamps			
Energy Reduction T8/ER	Traditional T8 lamps	Save on energy	Electrical billing * saving / year
15	18W	15%	US\$ 3.94
31	36W	15%	US\$ 6.57
50	58W	15%	US\$ 10.51

* based on 24 hrs operation/day - US\$0.15/1 KWH