

LAMP EQUIVALENCY

Ballast Option Number	Compact Fluorescent (CFL)		Incandescent	
	Watts	Lumens	Watts	Lumens
9M	Standard 9	600	40	505
13M	Standard 13	825	60	865
13E 137E 13EP 13EQ	Quad 13	900		
18E 187E 18EP 18EQ	Quad 18	1160	75	1190
26E 267E 26EP 26EQ	Quad 26	1700	100	1730
32E 327E 32EP 32EQ	Triple 32	2200		
39E 397E 39EP 39EQ	39	2850	150	2850
42E 427E 42EP 42EQ	Triple 42	3200	Two 100s	3460

* Source: CIE Lighting

M – Electromagnetic, E – Electronic Instant On, EP – Electronic Programmed Start, EQ – Electronic Quick Start

INDUSTRY TERMS

ADA – Americans with Disabilities Act which states all walkways, corridors and halls must have 80" of clear head room and all objects mounted on walls that are between 27" – 80" high, should not project more than 4" into the hallway.



Average Rated Life – The median time it takes for a lamp to burn out.

Color Rendering Index (CRI) – International system used to rate a lamp's ability to render object color. The higher the CRI (based upon a 0-100 scale), the better colors appear.

Color Temperature – Color temperature is directly related to the physical temperature of the filament in incandescent lamps. A higher color temperature (°K) describes a visually cooler, bluer light source. Typical color temperatures are 2700°K (incandescent or the GE SPX27 fluorescent), 3000°K (halogen or the GE SPX30 fluorescent), 3500°K (GE SPX35 fluorescent), 4100°K (cool white or the GE SPX41 fluorescent), and 5000°K (daylight-simulating fluorescent colors such as the GE SPX50).

Compact Fluorescent Lamp (CFL) – The general term applied to families of smaller diameter fluorescent lamps, some of which have built-in ballasts and medium screw bases (retrofit lamps). These fluorescents are referred to as PL, FL, or CF by the major lamp manufacturers.

Electronic Ballast – A shortened name for a fluorescent high frequency electronic ballast. Electronic ballasts use solid state electronic components and typically operate fluorescent lamps at frequencies in the range of 50/60 kHz. The benefits are: increased lamp efficacy, reduced ballast losses and lighter, smaller ballasts compared to electromagnetic ballasts.

Halogen Lamp – A shortened name for the tungsten-halogen lamp. Halogen lamps are high pressure incandescent lamps containing halogen gases such as iodine or bromine which allow the filaments to be operated at higher temperatures and higher efficacies.

Instant Start – A type of fluorescent ballast circuit designed to start fluorescent lamps as soon as the power is applied. Instant Start ballasts decrease lamp life in frequently switched situations.

Programmed Start – A type of fluorescent ballast circuit that provides precise heating of the lamp filaments while tightly controlling the pre-heat duration before applying starting voltage to ignite the lamp. Programmed Start ballasts are recommended by lamp manufacturers for situations where the lamp is switched frequently.

Rapid or Quick Start – A type of fluorescent ballast circuit in which the lamp filaments are heated while open circuit voltage is applied to facilitate lamp ignition.

BALLAST OPTION COMPARISON

Ballast Type	Ballast #	Lamp	# Of Lamps	Voltage	Lamp Start Time	% Of Lamp Life in Frequently Switched Conditions*
Electromagnetic	9M	9W Twin	1	120v	n/a	n/a
	9M2	9W Twin	1			
	13M	13W Twin or Quad	1			
	13M2	13W Twin or Quad	2			
Electronic Instant On (Instant Start)	13E	13w Quad	1	120v	< 0.5 seconds	42%
	13E(2)	13w Quad	2			
	13E(3)	13w Quad	3			
	18E	18w Triple or Quad	1			
	26E	26w Triple or Quad	1			
	26E(2)	26w Triple or Quad	2			
	26E(3)	26w Triple or Quad	3			
	32E	32w Triple	1			
	39E	39w Biax	1			
	39E(2)	39w Biax	2			
	42E	42w Triple	1			
	137E	13w Quad	1	277v	< 0.5 seconds	42%
	137E(2)	13w Quad	2			
	137E(3)	13w Quad	3			
	187E	18w Triple or Quad	1			
	267E	26w Triple or Quad	1			
	267E(2)	26w Triple or Quad	2			
	267E(3)	26w Triple or Quad	3			
	327E	32w Triple	1			
	397E	39w Biax	1			
397E(2)	39w Biax	2				
427E	42w Triple	1				
Electronic Programmed Start	13EP	13w Quad	1	120v thru 277v	< 1.7 seconds	90%
	13EP(2)	13w Quad	2			
	18EP	18w Triple or Quad	1			
	18EP(2)	18w Triple or Quad	2			
	26EP	26w Triple or Quad	1			
	26EP(2)	26w Triple or Quad	2			
	32EP	32w Triple	1			
	39EP	39w Biax	1			
Electronic Quick Start (Rapid Start)	13EQ	13w Quad	1	120v thru 277v	< 0.8 seconds	60%
	13EQ(2)	13w Quad	2			
	18EQ	18w Triple or Quad	1			
	18EQ(2)	18w Triple or Quad	2			
	26EQ	26w Triple or Quad	1			
	26EQ(2)	26w Triple or Quad	2			
	32EQ	32w Triple	1			
	39EQ	39w Biax	1			
42EQ	42w Triple	1				

BALLAST ANALYSIS

Ballast Type	Energy Usage (Two F32T8)	Ballast Factor	Starting Technology	Switching Cycles	Estimated Life of a 20K Hour Lamp Switched Frequently*
Electromagnetic	75 Watt	0.95	Voltage is applied (causing flicker in the lamp)	10K	8-9K
Instant Start	59 Watts	0.87	High initial voltage (typically 600v)	10-15K	8-9K
Instant Start - High Output	77 Watts	1.2	High initial voltage (typically 600v)	10-15K	8-9K
Rapid Start	62 Watts	0.89	Low initial voltage heats electrodes for 1 second before a lower starting voltage is applied (typically 450v)	15-20K	12K
Program Rapid Start	63 Watts	0.88	Lamp cathodes are pre-heated to 650°C before applying voltage	30K	18K
Programmed Start	64 Watts	0.88	Primarily used in PL and in dimming applications, lamp cathodes are pre-heated to 700°C before applying voltage and an integrated circuit monitors ballast and lamp conditions	30K+	18K+

* Switched Frequently – Switched more than every 3 hours

FINISHES	
Finish	Abbreviation
Ancient Rio Gold *	AG
Antique Brass	AB
Antique Bronze *	ABZ
Antique Bronze *	ABZ
Antique Gold Weave *	GW
Blackhills Gold *	BH
Bronze Fiesta *	BF
Bronze*	BZ
Burnished Gold *	BG
Chestnut	CT
Copper Sienna *	CS
French Gold	FG
Gild Stone *	GS
Gilded Bronze *	GB
Historic Bronze	HB
Historic Silver *	HS
Majestic Silver *	MS
Marbella Bronze *	MR
Mayan Gold *	MY
Natural Bronze	NB
Oil Rubbed Bronze	OB
Persian Rust *	PR
Polished Brass and Black	PBB
Polished Nickel	PN
Roman Copper *	RC
Roman Nickel	RN
Satin Brass	SB
Satin Nickel	SN
Verde Bronze	VB
Verde Green	VG
DIFFUSER FINISHES	
Finish	Abbreviation
Cream Cirrus Acrylic	CCA
Cream Etruscan Acrylic	CEA
Cultured Gris Alabaster	CGA
Cultured Henna Alabaster	CHE
Cultured Honey Alabaster	CHA
Etched White Opal Glass	EWO
Faux Alabaster Acrylic	FAA
Honey Alabaster Glass	HAG
Honey Onyx Acrylic	HOA
Matte Opal Acrylic	MOA
White Cirrus Acrylic	WCA
White Etruscan Acrylic	WEA

* These Troy Lighting hand applied finishes can be used on most custom or modified products. Although we work from a set of standards, perfect uniformity in these finishes can not be guaranteed. Furthermore, these finishes will be unique to the fixture it is applied to and will appear to have a craftsmen's personal touch.