


BALLAST OPTIONS

Ballast Types

BALLAST TYPES

Columbia Lighting supplies ballasts from a variety of reputable vendors whose products conform to Columbia Lighting's standard specifications (pg. 107). See Ballast Specified Vendor Options to order a particular manufacturer's product or ballast series. All ballast information is based on manufacturer's published literature and is subject to change without notice.

ELECTRONIC BALLAST TYPES

Start Method	Definition	Designation	Characteristics
Electronic Instant Start	Strikes lamp without filament preheating. Lowest wattage draw option for applications without control systems. Used for T8 bi-pin and slimline lamp types. Ballasts for F32T8 lamps are NEMA Premium qualified.	E	Standard (.87-1.0 BF)
		E104	EnergyMax 1.04 BF
		EHL	High light output (1.18-1.2 BF)
		ELW	Low wattage (.77-.78 BF)
		ETT	Twin Tube lamp types
Electronic Programmed Start	Recommended for frequently switched applications including occupancy sensor controlled lighting because programmed filament preheating can help extend lamp life. Remote mounting distance more restricted than with instant start. Sometimes called programmed rapid start. Available for all 2-pin lamp types. Ballasts for F32T8 lamps are NEMA Premium qualified.	EP	Standard
		EPTT	Twin Tube lamp types
		EP_	Alternate ballast factors. Eg. EP95, EP115, EP104 for T5 lamp types
Electronic Step Dimming	Electronic programmed start ballast with two hot leads to allow both lamps to switching between 100% and 50% light levels for energy management. Requires two switched leads from same panel. Not suitable for remote mounting. 2-lamp ballasts.	ESD	Standard BF (T5 or T8 bi-pin)
		ESD104	EnergyMax 1.04 BF (T8 Bi-pin)
		ESD80	Alternate ballast factor for 54T5H0
Electronic Full Dimming	Responds to either line voltage or low voltage signals to dim lamps from 100% to 10% or lower, depending on model. Many ED ballast types require voltage specified. Not suitable for remote mounting.	ED_	Add vendor and ballast series compatible with control system. Eg. ED120 LUTEC10
NEMA Premium 	Factory choice of ballast meeting NEMA Premium High Performance T8 standards. Available for F32T8 lamps. EnergyMax E104 is a NEMA Premium listed ballast. Now standard. See instant start and programmed start definitions above.	NE NELW NEHL NEP NEPLW NEPHL	Instant start, normal ballast factor Instant start, low ballast factor Instant start, high ballast factor Programmed start, normal ballast factor Programmed start, low ballast factor Programmed start, high ballast factor

MAGNETIC BALLAST TYPES

Start Method	Definition	Designation	Characteristics
Energy Saving	Magnetic ballasts that meet energy-savings requirements of the Department of Energy.	DOE	For 2-96 Slimline lamp type
Low Power Factor	Also called normal power factor (NPF). Labeled for residential use only.	L	For residential fixtures using 2', 3', or 4' Bi-pin T12 lamp types.

BALLAST OPTIONS

Ballast Quantities and Specified Vendors

BALLAST QUANTITIES






Fixtures with 3, 4, 6, and 8 lamps will be supplied with two ballasts standard. Optional ballast quantities are available.

See also Master-Satellite option for ballast quantity options on tandem-wired pairs. In tandem-length fixtures with more than one ballast, lamps are wired side by side unless left and right (LR option) is specified.

Number of Lamps in Fixture	Standard Designation	Optional Ballast Designation
1 or 2	Provides one ballast	Adding 11, such as 11E or 11EP, provides two (2) ballasts in 2-lamp fixtures
3	Provides two ballasts, one on inboard lamp, one on outboard	Adding 3, such as 3E or 3EP, provides one (1) 3-lamp ballast
4	Provides two ballasts, one on inboard lamps, one on outboard	Adding 4, such as 4E or 4EP, provides one (1) 4-lamp ballast
6	Must specify	Adding 24 (eg.), such as 24E or 24EP, provides a 2-lamp and 4-lamp ballast (recommended). 3E or 3EP provides (2) 3-lamp ballasts
8	4E provides two (2) 4-lamp ballasts wired on lamps 1, 4, 5, 8 and 2, 3, 6, 7	Consult factory

SPECIFIED VENDORS*

Specify ballast type, optional ballast quantity and vendor option. Eg. 3ED120LUTFDB

Vendor	Vendor Specified Designation	Vendor and Series Specified Designation	Vendor's Series Name (normal ballast factor unless noted)
	LUT	LUTEC10	Eco10 Dimming
		LUTFDB	Hi-Lume Dimming
		LUTES	EcoSystem incl. E1/E2 only (Dimming)
		LUTESSW	EcoSystem incl. sensor wires (Dimming)
	ULT	ULTHE	Ultim8
		ULTHP	High Performance
 imagination at work	GE	GEMAXH	Ultramax High BF
		GEMAXL	Ultramax Low BF
		GEMAXN	Ultramax
	SYL	SYLQHE	High Efficiency
		SYLQTP	Professional
		SYLPSX	Extreme
		SYLPHO	Helios Dimming
		SYLDIM	Powersense Dimming
	ADV	ADVCEN	Centium
		ADVIOP	Optanium
		ADVMK10	Mark X Dimming
		ADVMK7	Mark VII Dimming

*Others available, call out ballast catalog number in fixture description. Dimming ballasts use ED plus voltage and vendor designation.

BALLAST OPTIONS

Ballast Characteristics and Total System Watts

BALLAST CHARACTERISTICS

General Definitions

POWER FACTOR

Measure of how effectively ballast converts power source into usable watts. Ideal power factor would measure 1.0.

CREST FACTOR

Measure specifying the ratio of peak current to R.M.S. current in the waveform used to drive programmed start lamps. High crest factors shorten lamp life.

TOTAL HARMONIC DISTORTION

Measure of magnitude of input current harmonics compared with amplitude of fundamental frequency current.

BALLAST FACTOR

Lamp manufacturers publish lumen data based upon a "reference ballast" built to meet ANSI standards. Ballast factor is a measure of how well a ballast performs in comparison to the "reference ballast" as a percentage of rated lumen output.

COLUMBIA LIGHTING BALLAST SPECIFICATIONS **NEMA Premium**

All factory-choice normal ballast factor electronic ballasts meet the following specifications. Optional ballast factors and customer specified vendor available as options.

Ballast must meet NEMA Premium qualifications, be high power factor, (min. .95), Class P, UL listed, meet IEEE and ANSI requirements C62 .41 Category A for transient protection and FCC Regulations, Class A for electromagnetic interference. Operates at voltage variance of +/- 10%, crest factor of <1.7, total harmonic distortion (THC) <10% for primary lamp type, minimum ballast factor (BF) of .87 (.95 for T5/T5HO lamp types). Ballast must start lamps at 0°F ambient temperature.

TOTAL SYSTEM WATTS

The Total System Watts refer to the ballast and lamp watts consumed per luminaire. Input watts are based upon ANSI watts as published by ballast manufacturer's literature which is subject to change without notice. Ballast information shown is generic and serves as an approximation only; actual input watts vary according to specific ballast manufacturer and ballast number. For exact input wattage contact either the ballast manufacturer or Columbia Lighting Technical Support. Wattage published in Columbia IES photometric tests represents actual measured watts.

Total System Watts (Watts/Volts = Amps)

Ballast Type	Catalog Designation	Lamp Type	No. of Lamps	Input Watts*
T5	EP	F14/T5	1	19
	EP	F14/T5	2	34
	EP	F24/T5HO	1	28
	EP	F24/T5HO	2	53
	EP	F28/T5	1	34
	EP	F28/T5	2	66
	EP	F54/T5HO	1	63
	EP	F54/T5HO	2	121
	3EP	F54/T5HO	3	182
	4EP	F54/T5HO	4	240
	EP80	F54/T5HO	2	96
	EP95	F28/T5	2	60
	EP115	F28/T5	2	69
	ESD80	F54/T5HO	2	96/52
	ESD95	F28/T5	2	60/28
ESD104	F32/T8	2	65/32.5	
ESD115	F28/T5	1, 2	71/34	
T8	EP	F32/T8	1	31
	EP	F32/T8	2	62
	3EP	F32/T8	3	92
	4EP	F32/T8	4	119

Ballast Type	Catalog Designation	Lamp Type	No. of Lamps	Input Watts*
T8	E	F32/T8	1	30
	E	F32/T8	2	56
	3E	F32/T8	3	85
	4E	F32/T8	4	112
	E	F96/T8	1	70
	E	F96/T8	2	108
	E	F96/H0/T8	1	100
	E	F96/H0/T8	2	185
	E104	F32/T8	2	67/66
	E104	F32/T8 (28 watt)	2	60/59
	E105	F32/T8 (25 watt)	2	51/51
T12	E	F96/T12/ES	1	64
	E	F96/T12/ES	2	105
	EP	F96/T12/H0	1	119
	EP	F96/T12/H0	2	208
TT	ETT	F40/TT	1	39
	ETT	F40/TT	2	68
	3ETT	F40/TT	3	99
	EPTT	F40TT	1	38
	EPTT	F40TT	2	76
	3EPTT	F40TT	3	110

*Where published input watts differ between 120/277V the higher (120V) wattage is given. For 2 level step dim ballasts (ESD types) both high and low output wattages are given.