

Compact Fluorescent Ballasts

The Courage To Dream Small

Universal Lighting Technologies (“Universal”) offers a full range of electronic programmed start compact fluorescent ballasts to address most commercial applications.

Our electronic models offer high efficiency for maximum energy savings and installer-friendly universal input voltage, which reduces your inventory and ensures that you have the right voltage ballast every time. A complete range of 347 volt models are also available that offer outstanding reliability and lamp performance. These models feature a low profile case that fits in any fixture. And their metal housing construction meets all plenum codes and delivers maximum heat transfer to extend ballast life.



Our compact fluorescent models offer installer-friendly universal input voltage.

Product Overview

Triad® Electronic CFL Ballasts:

- High efficiency for maximum energy savings.
- Universal input voltage of 120-277V. Installer friendly universal input voltage, which reduces inventory and ensures that you have the right voltage ballast every time.
- Complete range of 347 volt CFL models that offer outstanding reliability and lamp performance.
- Programmed Rapid Start (PRS) incorporated. PRS is recommended by all lamp manufacturers. Increases lamp life for those frequently switched applications where occupancy sensors are used. Meets all requirements of rapid start specs and more.
- Metal can construction. Metal housing construction meets all plenum codes and construction code requirements. It also delivers maximum heat transfer to extend ballast life. Designed and manufactured for long life.
- Meets all applicable regulatory and safety standards. ANSI C82.11 Ballast Specification, UL 935, FCC Part 18 (Class A), and UL2043 suitable for Air Handling spaces.
- 1- or 2- lamp operation of multiple lamp applications. Multiple lamp options on each ballast for added versatility in applications.
- THD<10%
- Type CC and Type HL (hazardous locations) rated. Type CC is an anti-arcing feature that is used to reduce arcing caused by loose connections or improper lamp-pin to lampholder contact. The Type CC feature senses this arcing and shuts down the ballast to prevent damage.
- Dual entry color coded wire trap terminals. For wiring accuracy and ease of installation.
- Low profile form case fits in any fixture. Use for surface or junction box mounting. Small size means less wasted space than full alternative.
- End of lamp life shutdown circuit. Meets ANSI/NEMA requirements. Allows you to replace failed lamps without turning off power.
- 75° C Temperature Test point. Maximum Case Temperature of 75° C allows for easy ballast/fixture testing, assuring proper temperature application.
- Lamp proximity. Lamps can be mounted in close proximity to these ballasts due to no temperature critical components near the can sides. And, their circuit board potting enhances reliability by lowering case temperatures.
- Warranty. Backed by Triad® five year warranty.

CFL Replacement Kits

The multi-exit ballast lead wire connectors accommodate side and bottom lead exit requirements. The snap mount adapter plate adds bottom-exit studs and additional flexibility for replacement of older magnetic ballasts. They also fit virtually every j-box cover and fixture application. This product is for distribution sale only.

Multi-E Kit products:

C213UNVME000K	C213/347ME001K
C218UNVME000K	C218/347ME001K
C2642UNVME000K	C2642/347ME001K

Multi-E Kit contains:

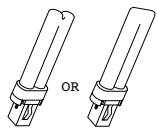
- Multi-exit ballast for use in both side-exit and bottom-exit replacement applications.
- Snap-mount adapter plate speeds up installation time. No hardware required for attaching snap-mount adapter plate.
- Lead wire set
- Wire extraction tool
- Instructions

Understanding Compact Fluorescent Technology

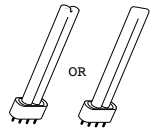
Compact fluorescent (CFL) lamps are single-ended and plug into sockets. They're sometimes referred to as "single-based" or "single-ended" fluorescent lamps.

Lamp Shapes

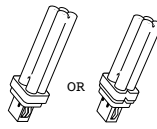
Today's CFL lamps come in these basic shapes: twin tube, quad, triple, multi, square and circular. Each of these shapes has its own subset of sizes. For example, the twin tube may range from 4' long (5 watt) to 22' long (40 watt).



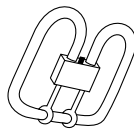
Twin, 2-Pin
5w - 13w



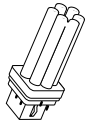
Long Twin T5, 4-Pin
5w - 80w



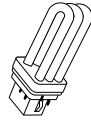
2-Pin 4-Pin
Quad 9w - 27w



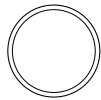
Square (2D)
10w - 55w



Multiple, 4-Pin
(GE & OS)
18w - 70w



Multiple, 4-Pin
(Philips)
18w - 42w



T5 Circular
22w - 55w

Pins and Starters

CFL lamps feature either two pins or four pins.

Four-pin lamps are traditionally powered by electronic ballasts. These lamps do not have an internal starter, so the other filament terminals (pins) are made accessible for external connection to the ballasts.

Lamp Bases

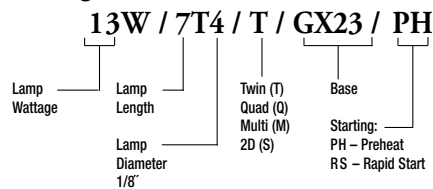
There are a variety of lamp bases used with today's CFL lamps. This provides a safeguard to make sure that the proper lamp/ballast combination is installed. The lamp base style is part of the ANSI/NEMA designation.

In this catalog, Universal CFL ballasts are classified according to lamp type. Icons representing each lamp type provide a quick visual reference. Within each classification, the lamps and their appropriate ballasts can be found by referring to the generic NEMA lamp descriptions.

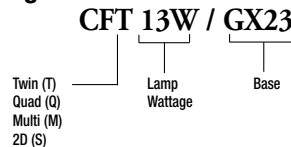
Lamp Designation

There are two different industry-recognized nomenclatures for identifying CFL lamps: ANSI Lamp Designations and NEMA Lamp Designations. Here are examples of each:

ANSI Designation



NEMA Designation

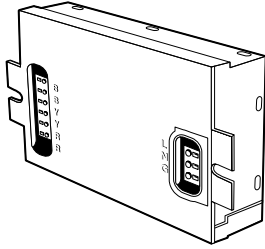


Both lamp designations refer to lamp wattage, shape, and base type. Since the NEMA designation is shorter, it will probably be the nomenclature of choice in the future. All of the major lamp companies have trade names for various CFL lamp types, such as GE's "Biax" and "2D" lamps, OSI's "Dulux," and Philips' "PL." These names have become more widely used than either of the industry designations.

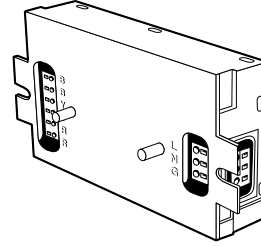
Industry	Watts	GE	OSI	Philips
Single or Twin	5, 7, 9, 13	Low Watt Biax	Dulux S, S/E	PL-S
Double or Quad	9, 13, 18, 20, 26, 27	Double Biax	Dulux D, D/E	PL-C
Multiple	13, 18, 26, 32, 42	Biax T/E	Dulux T, T/E, T/E/IN	PL-T
Multiple	42, 57, 70	Biax Q/E	Dulux T/E/IN	PL-T
Long Twin T5	18, 24/27, 36/39, 40, 50, 80	High Lumen Biax	Dulux L, F	PL-L
Square	10, 16, 21, 28, 38, 55	2D	—	—
Circline	22, 40, 55	—	Pentron	Silhouette

Configurations

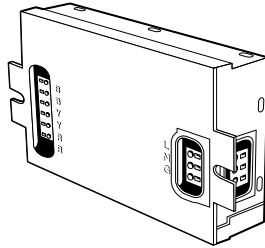
Electronic Bottom Exit (BE)














Electronic Multi-Exit with Studs (MES)



Electronic Multi-Exit (ME)



Lamp Matrix

	ANSI Lamp Designation	NEMA Lamp Designation	Built-In Starter	LAMP MANUFACTURER		
				GE	OSI	Philips
	5W/4T4/T/G23/PH	CFT5W/G23	YES	F5 BX	CF 5DS	PL-S 5W
	7W/5T4/T/G23/PH	CFT7W/G23	YES	F7 BX	CF 7DS	PL-S 7W
	9W/6T4/T/G23/PH	CFT9W/G23	YES	F9 BX	CF 9DS	PL-S 9W
	13W/7T4/T/GX23/PH	CFT13W/GX23	YES	F13 BX	CF 13DS	PL-S 13W
Twin, 2-Pin						
	9W/4T4/Q/G23-2/PH	CFQ9W/G23	YES	F9 DBX23	CF 9DD	—
	13W/5T4/Q/GX23-2/PH	CFQ13W/GX23	YES	F13 DBX23	CF 13DD	PL-C 13W/USA
Quad, 2-Pin						
	13W/6T4/Q/G24d-1/PH	CFQ13W/G24d	YES	F13 DBX T4	—	PL-C 13W
	18W/7T4/Q/G24d-2/PH	CFQ18W/G24d	YES	F18 DBX T4	CF 18DD	PL-C 18W
	26W/8T4/Q/G24d-3/PH	CFQ26W/G24d	YES	F26 DBX T4	CF 26DD	PL-C 26W
Quad, 2-Pin						
	13W/6T4/Q/G24q-1	CFQ13W/G24q	NO	F13 DBX/4P	CF 13DD/E	PL-C 13W/4P
	18W/7T4/Q/G24q-2	CFQ18W/G24q	NO	F18 DBX/4P	CF 18DD/E	PL-C 18W/4P
	26W/8T4/Q/G24q-3	CFQ26W/G24q	NO	F26 DBX/4P	CF 26DD/E	PL-C 26W/4P
Quad, 4-Pin						
	10W/3.5T4/S/GR10q-4	CFS10W/GR10q	NO	F10 2D/4P	—	—
	16W/5.5T4/S/GR10q-4	CFS16W/GR10q	NO	F16 2D/4P	—	—
	21W/5.5T4/S/GR10q-4	CFS21W/GR10q	NO	F21 2D/4P	—	—
	28W/8T6/S/GR8-2/PH	CFS28W/GR8	YES	F28 2D	—	—
	28W/8T6/S/GR10q-4	CFS28W/GR10q	NO	F28 2D/4P	—	—
	38W/8T6/S/GR10q-4	CFS38W/GR10q	NO	F38 2D/4P	—	—
	55W/8T6/S/GRY10q-3	CFS55W/GRY10q	NO	F55 2D/4P	—	—
Square, (2D)						
	20W/6T5/Q/GX32d-2/PH	CFQ20W/GX32d	YES	—	—	PL-C 15MM/22W
	27W/7T5/Q/GX32d-3/PH	CFQ27W/GX32d	YES	—	—	PL-C 15MM/28W
T5 Quad, 2-Pin						
	13W/6T4/T/2GX7	CFT13W/2GX7	NO	—	CF 13DS/E	—
Twin T4, 4-Pin						
	18-20W/9T5/T/2G11/PH-RS	FT18W/2G11	NO	F18 BX	FT 18DL	—
	18W/10T5/T/2G11/RS	FT18W/2G11/RS	NO	F18 BX/RS	FT 18DL/RS	PL-L 18W
	18W/5T5/T/2G10	CFM18W/2G10	NO	—	CF 18DF	—
	24-27W/13T5/T/2G11/PH-RS	FT24W/2G11/RS	NO	F27 BX/RS	FT 24DL	PL-L 24W
	24W/7T5/T/2G10	CFM24W/2G10	NO	—	CF 24DF	—
	36-39W/16T5/T/2G11/PH-RS	FT36W/2G11/RS	NO	F39 BX/RS	FT 36DL	PL-L 36W
	36W/9T5/T/2G10	CFM36W/2G10	NO	—	CF 36DF	—
	40W/22T5/T/2G11/RS	FT40W/2G11/RS	NO	F40 BX/RS	FT 40DL/RS	PL-L 40W/RS
	50W/22T5/T/2G11/RS	FT50W/2G11/RS	NO	F50 BX/RS	—	PL-L 50W/RS
	55W/21T5/T/2G11	FT55W/2G11	NO	F55 BX	FT 55DL	—
	80W/22T5/T/2G11	FT80W/2G11	NO	—	—	PL-L 80W
Long Twin T5, 4-Pin						
	18W/5T4/M/GX24d-2	CFM18W/GX24d	YES	—	CF 18DT	—
	26W/6T4/M/GX24d-3	CFM26W/GX24d	YES	—	CF 26DT	—
Multiple, 2-Pin						
	13W/5T4/M/GX24q-1	CFM13W/GX24q	NO	F13 TBX/4P	CF 13DT/E	—
	18W/5T4/M/GX24q-2	CFM18W/GX24q	NO	F18 TBX/4P	CF 18DT/E/IN	PL-T 18W/4P
	26W/6T4/M/GX24q-3	CFM26W/GX24q	NO	F26 TBX/4P	CF 26DT/E/IN	PL-T 26W/4P
	32W/6T4/M/GX24q-3	CFM32W/GX24q	NO	F32 TBX/4P/EOL	CF 32DT/E/IN	PL-T 32W/4P
	42W/7T4/M/GX24q-4	CFM42W/GX24q	NO	F42 TBX/4P/EOL	CF 42DT/E/IN	PL-T 42W/4P
	57W/7T4/M/GX24q-5	CFM57W/GX24q	NO	F57 QBX/4P/EOL	CF 57DT/E/IN	—
	70W/8T4/M/GX24q-6	CFM70W/GX24q	NO	F70 QBX/4P/EOL	—	—
Multiple, 4-Pin						
	—	FC9T5-22W/2GX13	NO	—	FPC22	FC9T5 22W
	—	FC12T5-40W/2GX13	NO	—	FPC40	FC12T5 40W
	—	FC12T5-55W/2GX13	NO	—	FPC55/HO	FC12T5 55W
T5 Circular, 4-Pin						

Compact Fluorescent

Specifications

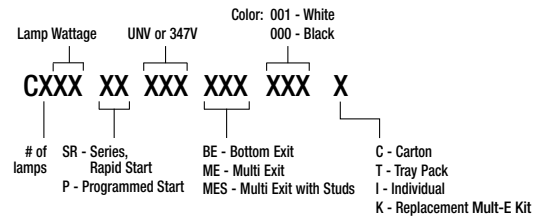
TYPICAL SPECIFICATIONS FOR ELECTRONIC COMPACT FLUORESCENT BALLASTS:

- Ballasts shall be constructed of metal housing to meet plenum and construction code requirements while providing maximum heat transfer without extra grounding wires for extended ballast life.
- Ballasts shall be constructed using dual entry color coded wire trap terminals for wiring accuracy and ease of installation.
- Ballasts shall be Programmed Start.
- Ballasts shall have a minimum Rh/Rc of 4.25 each time the lamps are started.
- Ballasts shall have a maximum ionization current (Glow Current) of 25 milliamps during preheating interval.
- Ballasts shall operate from 50/60 Hz input source of 120 through 277 Volts, and sustained variations of $\pm 10\%$ (Voltage & Frequency) with no damage to the ballasts.
- Ballasts shall be a high frequency electronic type, and operate lamps at a frequency above 50 kHz to minimize interference with infrared control systems.
- Ballasts shall have a minimum starting temperature of 0°F (-18°C) for the primary lamp application.
- Ballasts shall tolerate operation in ambient temperatures up to 140°F (55°C) without damage.
- Ballasts shall have a maximum case temperature test point of 75°C printed on the label for easy fixture testing and trouble shooting.
- Ballasts shall support 12' lead length remote mounting for the primary lamp.
- Ballasts shall comply with FCC Part 18 Non-Consumer Equipment for EMI (power line conducted) and RFI (radiated).
- Ballasts shall provide transient immunity as recommended by ANSI C82.11-2011.
- Ballasts shall incorporate end of lamp life shutdown circuitry for end of lamp life protection.
- Ballasts shall allow for re-lamping without the need to cycle power.
- Ballasts shall operate lamps with no visible flicker (<3% flicker index).
- Ballasts shall tolerate sustained open and short circuit output conditions without damage.
- Ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type 1 Outdoor and/or CSA certified for both US and Canadian application.
- Ballasts shall be UL 935 Type CC rated to reduce arcing caused by loose connections or improper lamp-pin to lampholder contact.
- Ballasts shall be UL 2043 certified for use in plenums and marked on label as "Suitable for Air Handling Spaces".
- Ballasts shall be quiet Class A sound rating.
- Ballasts shall have a Ballast Factor for primary lamp application greater than .95 per ANSI C82.11-2011.
- Input current Total Harmonic Distortion shall not exceed 10% for the primary lamp.
- Ballasts shall have a Power Factor greater than .98 for the primary lamp application.
- Lamp Current Crest Factor (ratio of peak to RMS current) shall be 1.7 or less in accordance with lamp manufacturer recommendation and ANSI C82.11-2011.
- The ballasts shall not have any PCB's.
- The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
- Manufacturer shall have been manufacturing electronic ballasts for at least thirty years.
- Ballasts shall be manufactured in an ISO 9001 / ISO 9002 Certified Facility in North America.
- Ballasts shall be manufactured by Universal Lighting Technologies.

Understanding Universal Part Numbers

ELECTRONIC

Our nomenclature for electronic CFL ballasts follows the system already in place for other Universal electronic ballasts. The exceptions are that the model number prefix for compact fluorescent is a C rather than a B.



Example: Electronic C240PUNVHP-B000C

Ballast Type: C — CFL Electronic Ballast

Lamp Qty: 2

Lamp Type: 40W TT5, 4 Pin (FT40W/2611)

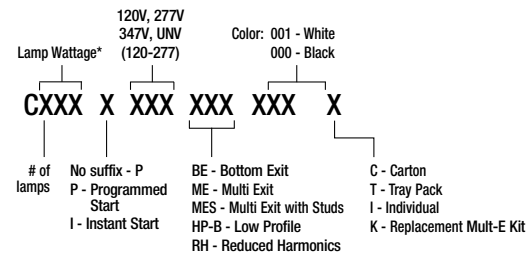
P: Programmed Start

Voltage: UNV 120 to 277 volts

HP-B: High Performance <10%; low profile can

000: Color — Black

C: Packaging container style — Carton Pack



Example: C213UNVMES000C*

Ballast Type: C

Lamp Quantity: 2

Lamp Type: 13W Quad, 4 Pin (CFQ13W/G24q)

Voltage: UNV 120 to 277 volts

MES: Multi-exit connection, with studs

000C: Color — Black

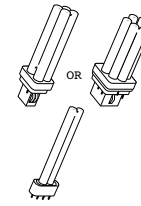
C: Packaging container style — Carton Pack

*Exception is C2642, which does not distinguish number of lamps. See catalog.

Notes

MAGNETIC AND ELECTRONIC COMPACT FLUORESCENT BALLASTS FOR TWIN, QUAD AND MULTIPLE LAMPS 13-26 WATTS

- Ideal for downlights & wall sconces
- Electronic models feature universal input voltage from 120V to 277V. 347V models are also available.
- Electronic models feature programmed start for excellent lamp performance & auto reset shutdown circuit



**TWIN, QUAD
& MULTIPLE
LAMPS
13-26 WATTS**

**QUICK
REFERENCE**
Nominal lamp watts
and configuration

Lamp Type	Mag or Elec	Qty of Lamps	Line Volt	Catalog Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method*	Dim	Wir Diag
												Side Exit	Multi Exit	Multi Exit Studs			
Electrical Characteristics - 60 Hz																	
13 Watts CFT13W/GX23 OR CFQ13W/GX23		1	120	CF1320H2P [■]	16	0.24	0.30	0.85	25°/-4°	>.50	<15%	X	—	—	PH	B10	1
13 Watts CFQ13W/G24q OR CFM13W/GX24q		1	120	C213UNVME [×]	18	0.15	—	1.00	0°/-18°	>.98	<10%		X	X	PS	C3	3
		2	277	C213UNVME [×]	30	0.07	—	1.00	0°/-18°	>.95	<15%		X	X	PS	C3	4
		1	120	C213/347ME [*]	18	0.26	—	1.00	0°/-18°	>.98	<10%		X	X	PS	C3	3
		2	347	C213/347ME [*]	33	0.11	—	0.98	0°/-18°	>.98	<10%		X	X	PS	C3	4
13 Watts CFT13W/2GX7		1	120	CT213UNVME	15	0.12	—	0.98	0°/-18°	>.98	<10%		X	X	PS	C3	3
		2	277	CT213UNVME	26	0.06	—	0.98	0°/-18°	>.98	<12%		X	X	PS	C3	4
18 Watts CFQ18W/G24q OR CFM18W/GX24q		1	120	C218UNV ^{♦×}	19	0.16	—	1.00	0°/-18°	>.98	<10%		X	X	PS	C3	3
		2	277	C218UNV ^{♦×}	35	0.07	—	0.95	0°/-18°	>.98	<15%		X	X	PS	C3	4
		1	120	C218UNV ^{♦×}	30	0.30	—	1.00	0°/-18°	>.98	<10%		X	X	PS	C3	4
		2	277	C218UNV ^{♦×}	56	0.13	—	0.98	0°/-18°	>.98	<10%		X	X	PS	C3	4
		1	347	C218/347ME [*]	21	0.06	—	1.00	0°/-18°	>.98	<10%		X	X	PS	C3	3
		2	347	C218/347ME [*]	38	0.11	—	0.98	0°/-18°	>.98	<10%		X	X	PS	C3	4
26 Watts CFQ26W/G24q OR CFM26W/GX24q		1	120	C2642UNV ^{♦×}	28	0.25	—	1.02	0°/-18°	>.98	<10%		X	X	PS	C3	3
		2	277	C2642UNV ^{♦×}	56	0.11	—	0.98	0°/-18°	>.98	<10%		X	X	PS	C3	4
		1	120	C2642UNV ^{♦×}	56	0.47	—	1.02	0°/-18°	>.98	<10%		X	X	PS	C3	3
		2	277	C2642UNV ^{♦×}	112	0.21	—	0.98	0°/-18°	>.98	<10%		X	X	PS	C3	4
		1	347	C2642/347ME [*]	31	0.09	—	1.02	0°/-18°	>.98	<10%		X	X	PS	C3	3
		2	347	C2642/347ME [*]	57	0.17	—	0.98	0°/-18°	>.98	<10%		X	X	PS	C3	4
		1	120	C242UNV [♦]	56	0.46	—	1.02	0°/-18°	>.95	<10%		X	X	PS	C4	4
		2	277	C242UNV [♦]	112	0.20	—	1.02	0°/-18°	>.95	<10%		X	X	PS	C4	4
		2	347	C242/347ME	44	0.14	—	1.02	0°/-18°	>.98	<10%		X	X	PS	C4	4

♦ PH = Preheat; PS = Programmed Start

- H2 indicates clamped & covered core & coil with mounting feet.
- ♦ Add following suffix for complete catalog #: "BE" for Bottom Exit connectors, "ME" for Multi Exit connectors, or "MES" for Multi Exit with 2" OC screw studs.
- Not approved for use in hazardous locations.
- × Add "000K" suffix for Multi-E Kit. For Distribution only.
- * Add "001K" suffix for Multi-E Kit. For Distribution only.

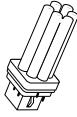
All ballasts are UL listed, CSA approved and designated Class P (thermally protected).

**See page 3-11 for Dimensions
and Wiring Diagrams.**

Compact Fluorescent

MULTIPLE LAMPS





32, 42, 57 & 70 WATTS



- Ideal for downlights, surface mount & outdoor fixtures
- Electronic models feature universal input voltage from 120V to 277V. 347V models are also available.
- Electronic models feature programmed start for excellent lamp performance & auto reset shutdown circuit

ELECTRONIC COMPACT FLUORESCENT BALLASTS FOR MULTIPLE LAMPS

32, 42, 57 & 70 WATTS

QUICK REFERENCE Nominal lamp watts and configuration	Mag or Elec	Qty of Lamps	Line Volt	Catalog [Ⓢ] Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method [Ⓢ]	Dim	Wir Diag
												Side Exit	Multi Exit	Multi Exit Studs			
Lamp Type	Electrical Characteristics - 60 Hz																
32 Watts CFM32W/GX24q 	E	1	120	C2642UNV [Ⓢ] x	36	0.30	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C3	3	
	E	1	347	C2642/347ME*	36	0.11	—	0.98	0°/-18°	>.98	<10%	X	X	PS	C3	3	
	E	2	120	C242UNV [Ⓢ]	69	0.58	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C4	4	
	E	2	347	C242/347ME	62	0.19	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C4	4	
Multiple, 4-Pin																	
42 Watts CFM42W/GX24q 	E	1	120	C2642UNV [Ⓢ] x	48	0.41	—	0.98	0°/-18°	>.98	<10%	X	X	PS	C3	3	
	E	1	347	C2642/347ME*	50	0.15	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C3	3	
	E	1	120	C242UNV [Ⓢ]	45	0.40	—	1.00	0°/-18°	>.93	<10%	X	X	PS	C4	3	
	E	2	120	C242UNV [Ⓢ]	91	0.76	—	0.98	0°/-18°	>.98	<10%	X	X	PS	C4	4	
E	1	347	C242/347ME	42	0.13	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C4	3		
E	2	347	C242/347ME	80	0.25	—	0.98	0°/-18°	>.98	<10%	X	X	PS	C4	4		
Multiple, 4-Pin																	
57 Watts CFM57W/GX24q 	E	1	120	C242UNV [Ⓢ]	58	0.52	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C4	3	
	E	1	347	C242/347ME	61	0.18	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C4	3	
Multiple, 4-Pin																	
70 Watts CFM70W/GX24q 	E	1	120	C242UNV [Ⓢ]	73	0.61	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C4	3	
	E	1	347	C242/347ME	74	0.21	—	1.00	0°/-18°	>.98	<10%	X	X	PS	C4	3	
Multiple, 4-Pin																	

Ⓢ PS = Programmed Start

◆ Add following suffix for complete catalog #: "BE" suffix for Bottom Exit connectors, "ME" for multi-exit connectors, or "MES" for multi exit connectors with 2" O.C. screw studs.

✕ Add "000K" suffix for Mult-E Kit. For Distribution only.

* Add "001K" suffix for Mult-E Kit. For Distribution only.

All ballasts are UL listed, CSA approved and designated Class P (thermally protected), Type HL.

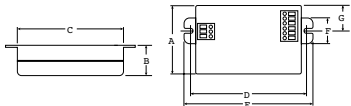
Compact Fluorescent

See page 3-11 for Dimensions and Wiring Diagrams.

MAGNETIC AND ELECTRONIC COMPACT FLUORESCENT BALLASTS

WIRING DIAGRAMS AND DIMENSIONS

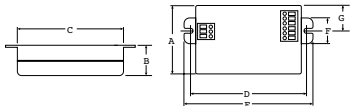
REFERENCE DRAWING FOR B10



Dwg.	A	B	D	E
B10	1.48"	1.30"	2.68"	3.08"

Leadless-Poke-in wire connection

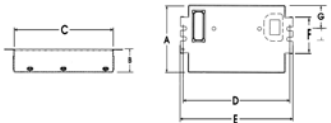
REFERENCE DRAWING FOR C3



Dwg.	A	B	C	D	E	F	G
C3	2.31"	1.00"	4.25"	4.61"	4.94"	0.98"	1.00"

Leadless-Poke-in wire connection

REFERENCE DRAWING FOR C4



Dwg.	A	B	C	D	E	F	G
C4	2.98"	1.00"	4.25"	4.61"	4.94"	1.55"	1.00"

Leadless-Poke-in wire connection

Note: Nominal dimensions provided above
Contact Universal for drawings and/or tolerances

WIRING DIAGRAMS

Install in accordance with
National Electrical Code.

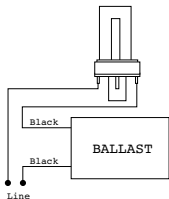


DIAGRAM 1

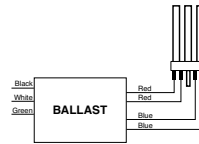


DIAGRAM 3

Ballast should be grounded

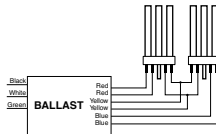


DIAGRAM 4




Series lamp operation
Ballast should be grounded

2D LAMPS 10, 16 & 21 WATTS



- Ideal for surface mount fixtures
- Universal input voltage from 120V to 277V. 347V models are also available.
- Programmed start for excellent lamp performance & auto reset shutdown circuit

ELECTRONIC COMPACT FLUORESCENT BALLASTS FOR 2D LAMPS 10, 16 AND 21 WATTS

QUICK REFERENCE Nominal lamp watts and configuration	Mag or Elec	Qty of Lamps	Line Volt	Catalog [Ⓞ] Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method [⚡]	Dim	Wir Diag
												Side Exit	Multi Exit	Multi Exit Studs			
Lamp Type																	
10 Watts																	
CFS10W/GR10q 	E	1	120 277	C213UNVME ^x	15	0.12 0.06	---	1.02	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	2a
	E	2	120 277	C213UNVME ^x	26	0.22 0.10	---	1.02	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	3a
	E	1	347	C213/347ME [*]	16	0.05	---	1.02	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	2a
	E	2	347	C213/347ME [*]	28	0.08	---	1.02	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	3a
2D, 4-Pin																	
Lamp Type																	
16 Watts																	
CFS16W/GR10q 	E	1	120 277	C213UNVME ^x	19	0.15 0.07	---	0.95	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	2a
	E	1	347	C213/347ME [*]	20	0.06	---	0.95	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	2a
	E	2	120 277	C213UNVME ^x	33	0.28 0.12	---	0.95	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	3a
	E	2	347	C213/347ME [*]	34	0.10	---	0.95	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	3a
2D, 4-Pin																	
Lamp Type																	
21 Watts																	
CFS21W/GR10q 	E	1	120 277	C218UNV ^{**}	24	0.18 0.08	---	0.98	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	2a
	E	1	347	C218/347ME [*]	21	0.06	---	0.98	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	2a
	E	2	120 277	C218UNV ^{**}	43	0.37 0.16	---	0.95	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	3a
	E	2	347	C218/347ME [*]	39	0.12	---	0.95	0°/-18°	>.98 >.95	<10% <15%	---	X	X	PS	C3	3a
2D, 4-Pin																	

⚡ PS = Programmed Start

◆ Add following suffix for complete catalog #: "BE" for Bottom Exit connectors, "ME" for Multi Exit connectors, or "MES" for MultiExit with 2" OC screw studs.

✕ Add "000K" suffix for Multi-E Kit. For Distribution only.

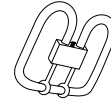
* Add "001K" suffix for Multi-E Kit. For Distribution only.

All ballasts are UL listed, CSA approved and designated Class P (thermally protected), Type HL.


See page 3-14 for Dimensions
and Wiring Diagrams.

ELECTRONIC COMPACT FLUORESCENT BALLASTS FOR 2D LAMPS

- Ideal for surface mount fixtures
- Universal input voltage from 120V to 277V.
- Programmed start for excellent lamp performance & auto reset shutdown circuit



**2D
LAMPS
28 & 38
WATTS**

QUICK REFERENCE Nominal lamp watts and configuration	Mag or Elec	Qty of Lamps	Line Volt	Catalog [⊕] Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method [⊕]	Dim	Wir Diag
												Side Exit	Multi Exit	Multi Exit Studs			
Lamp Type	Electrical Characteristics - 60 Hz																
28 Watts CFS28W/GR10q	E	1	120 277	C2642UNV**	31	0.27 0.12	---	0.95	0°/-18°	>.95	<10%	---	X	X	PS	C3	2a
	E	1	347	C2642/347ME*	33	0.10	---	0.95	0°/-18°	>.95	<10%	---	X	X	PS	C3	2a
	E	2	120 277	C242UNV*	64 63	0.54 0.24	---	1.00	0°/-18°	>.97	<10%	---	X	X	PS	C4	3a
	E	2	347	C242/347ME	60	0.18	---	1.00	0°/-18°	>.98	<10%	---	X	X	PS	C4	3a
Lamp Type	Electrical Characteristics - 60 Hz																
38 Watts CFS38W/GR10q	E	1	120 277	C2642UNV [⊕] ×	33	0.27 0.12	---	0.80	0°/-18°	>.95	<10%	---	X	X	PS	C3	2a



2D, 4-Pin

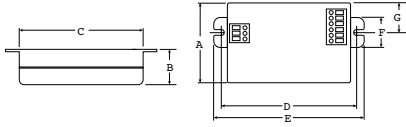
- ⊕ PS = Programmed Start
- ◆ Add following suffix for complete catalog #: "BE" for Bottom Exit connectors, "ME" for Multi Exit connectors, or "MES" for Multi Exit with 2" OC screw studs.
- × Add "000K" suffix for Mult-E Kit. For Distribution only.
- * Add "001K" suffix for Mult-E Kit. For Distribution only.

All ballasts are UL listed, CSA approved and designated Class P (thermally protected), Type HL.

See page 3-14 for Dimensions and Wiring Diagrams.

ELECTRONIC COMPACT FLUORESCENT BALLASTS FOR 2D LAMPS WIRING DIAGRAMS AND DIMENSIONS

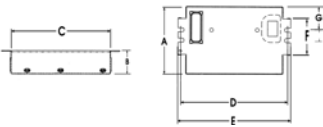
REFERENCE DRAWING FOR C3



Dwg.	A	B	C	D	E	F	G
C3	2.31"	1.00"	4.25"	4.61"	4.94"	0.98"	1.00"

Leadless-Poke-in wire connection

REFERENCE DRAWING FOR C4



Dwg.	A	B	C	D	E	F	G
C4	2.98"	1.00"	4.25"	4.61"	4.94"	1.55"	1.00"

Leadless-Poke-in wire connection

WIRING DIAGRAMS

Install in accordance with
National Electrical Code.

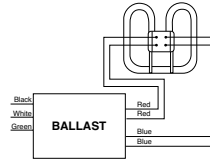


DIAGRAM 2a

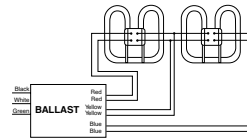


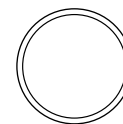
DIAGRAM 3a
Series lamp operation

Note: Nominal dimensions provided above
Contact Universal for drawings and/or tolerances





ELECTRONIC COMPACT FLUORESCENT BALLASTS

22, 40 & 55 WATTS

- Ideal for surface mount fixtures
- Electronic models feature universal input voltage from 120V to 277V. 347V models are also available.
- Electronic models feature programmed start for excellent lamp performance & auto reset shutdown circuit



**T5
CIRCULAR
LAMPS**
22, 40 & 55 WATTS

QUICK REFERENCE Nominal lamp watts and configuration	Mag or Elec	Qty of Lamps	Line Volt	Catalog [®] Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method [★]	Dim	Wir Diag
												Side Exit	Multi Exit	Multi Exit Studs			
Lamp Type Electrical Characteristics - 60 Hz																	
22 Watts FC9T5-22W 	E	1	347	C2642/347ME*	26	0.08	—	0.98	0°/-18°	>.98	<10%	—	X	X	PS	C3	2b
	E	1	120	C2642UNV♦×	25	0.21	—	1.00	0°/-18°	>.98	<10%	—	X	X	PS	C3	2b
	E	2	347	C242/347ME	47	0.14	—	1.05	0°/-18°	>.98	<10%	—	X	X	PS	C4	1b
	E	2	120	C242UNV♦	50	0.42	—	1.05	0°/-18°	>.95	<10%	—	X	X	PS	C4	1b
40 Watts FC12T5-40W 	E	1	347	C2642/347ME*	40	0.12	—	0.98	0°/-18°	>.98	<10%	—	X	X	PS	C3	2b
	○ E	1	120	C2642UNV♦×	42	0.35	—	0.98	0°/-18°	>.98	<10%	—	X	X	PS	C3	2b
	E	2	347	C242/347ME	71	0.22	—	0.98	0°/-18°	>.98	<10%	—	X	X	PS	C4	1b
	○ E	2	120	C242UNV♦	80	0.65	—	0.98	0°/-18°	>.98	<10%	—	X	X	PS	C4	1b
22 & 40 Watts FC9T5-22W & FC12T5-40W 	E	1+1	120	C242/347ME	59	0.18	—	0.98	0°/-18°	>.98	<10%	—	X	X	PS	C4	1b
	E	1+1	277	C242UNV♦	66	0.54	—	0.98	0°/-18°	>.97	<10%	—	X	X	PS	C4	1b
55 Watts FC12T5-55W 	E	1	120	B2 54PUNV-D	55	0.45	—	1.00	-20/-29	>.99	<10%	X	—	—	PS	-D	2b
	E	1	277	B254PUNVHB-D	55	0.20	—	1.00	-20/-29	>.96	<10%	X	—	—	PS	-D	2b
	E	1	120	B254PUNVPL-A	51	0.43	—	1.00	-20/-29	>.99	<10%	X	—	—	PS	-A	1b
	E	1	277	B254PUNVPLHBA	50	0.20	—	1.00	-20/-29	>.91	<10%	X	—	—	PS	-A	1b
	E	1	120	B254PUNVPLHBA	50	0.43	—	1.00	-20/-29	>.99	<10%	X	—	—	PS	-A	1b
	E	1	277	B254PUNVPLHBA	50	0.20	—	1.00	-20/-29	>.91	<10%	X	—	—	PS	-A	1b
	E	2	120	B254PUNV-D	107	0.88	—	1.00	-20/-29	>.99	<10%	X	—	—	PS	-D	1b
	E	2	277	B254PUNV-D	104	0.38	—	1.00	-20/-29	>.98	<10%	X	—	—	PS	-D	1b
	E	2	120	B254PUNVHB-D	107	0.88	—	1.00	-20/-29	>.99	<10%	X	—	—	PS	-D	1b
	E	2	277	B254PUNVHB-D	104	0.38	—	1.00	-20/-29	>.98	<10%	X	—	—	PS	-D	1b
T5 CIRCULAR	E	2	120	B254PUNVPL-A	92	0.77	—	0.96	-20/-29	>.99	<10%	X	—	—	PS	-A	1b
	E	2	277	B254PUNVPL-A	91	0.34	—	0.96	-20/-29	>.97	<10%	X	—	—	PS	-A	1b
	E	2	120	B254PUNVPLHBA	92	0.77	—	0.96	-20/-29	>.99	<10%	X	—	—	PS	-A	1b
	E	2	277	B254PUNVPLHBA	91	0.34	—	0.96	-20/-29	>.97	<10%	X	—	—	PS	-A	1b

Compact Fluorescent




LONG TWIN T5 LAMPS 18, 24/27 WATTS



- Ideal for track light & surface mount fixtures
- Electronic models feature universal input voltage from 120V to 277V. 347V models are also available
- Electronic models feature rapid and programmed start for excellent lamp performance & auto reset shutdown circuit

ELECTRONIC COMPACT FLUORESCENT BALLASTS FOR LONG TWIN T5 LAMPS

18 AND 24/27 WATTS (BIAX, DULUX L AND PLL)

QUICK REFERENCE Nominal lamp watts and configuration	Mag or Elec	Qty of Lamps	Line Volt	Catalog [Ⓞ] Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method [✱]	Dim	Wir Diag
												Side Exit	Multi Exit	Multi Exit Studs			
Lamp Type																	
18 Watts																	
FT18W/2G11/RS 	E	1	120	CT218UNVME	23	0.19	---	1.00	0°/-18°	>.95	<10%	---	X	X	PS	C3	21
			277			0.07						---	---	---			
	E	2	120	CT218UNVME	43	0.37	---	0.98	0°/-18°	>.98	<10%	---	X	X	PS	C3	20
			277		42	0.16						---	X	X			
Long Twin T5, 4-Pin																	
Lamp Type																	
24/27 Watts																	
FT24W/2G11/RS 	○ E	1	120	B224PUNV-C	27	0.23	---	1.05	0°/-18°	>.98	<10%	X	---	---	PS	-C	43
			277			0.10						>.95	<15%	---			
	○ E	1	120	C2642UNV*	29	0.09	---	0.90	0°/-18°	>.95	<10%	---	X	X	PS	C3	21
			277			0.22						>.99	<10%	---			
	E	1	120	C2642UNV*	26	0.10	---	1.01	0°/-18°	>.95	<10%	---	X	X	PS	C3	21
			277			0.10						>.95	<10%	---			
	E	2	120	B224PUNV-C	52	0.43	---	1.00	0°/-18°	>.98	<10%	X	---	---	PS	-C	27
			277			51						0.18	X	---			
E	2	347	C242/347ME	49	0.14	---	1.02	0°/-18°	>.98	<10%	---	X	X	PS	C4	20	
		120			51						0.43	---	X				X
E	2	120	C242UNV♦	50	0.19	---	1.02	0°/-18°	>.95	<10%	---	X	X	PS	C4	20	
		277			50						0.19	---	X				X
E	2	120	C2642UNV*	47	0.40	---	0.98	0°/-18°	>.98	<10%	---	X	X	PS	C3	20	
		277			49						0.18	---	X				X
Long Twin T5, 4-Pin																	
Lamp Type																	
24/27 Watts																	
CFM24W/2G10 	○ E	1	120	B224PUNV-C	24	0.20	---	1.05	0°/-18°	>.98	<10%	X	---	---	PS	-C	43
			277			0.09						>.95	<15%	---			
○ E	2	120	B224PUNV-C	48	0.40	---	1.00	0°/-18°	>.98	<10%	X	---	---	PS	-C	29	
		277			47						0.17	X	---				---

- ✱ PS = Programmed Start
- Not approved for use in hazardous locations
- ♦ Add following suffix for complete catalog #: "BE" for Bottom Exit connectors, "ME" for Multi Exit connectors, or "MES" for Multi Exit with 2" OC screw studs.
- ✕ Add "000K" suffix for Multi-E Kit. For Distribution only.
- * Add "001K" suffix for Multi-E Kit. For Distribution only.

All ballasts are UL listed, CSA approved and designated Class P (thermally protected).

Compact Fluorescent

See pages 3-19 and 3-20 for Dimensions and Wiring Diagrams.




ELECTRONIC LONG TWIN T5 BALLASTS

36/39 AND 40 WATTS (BIAx, DULUX L AND PLL)

- Ideal for track light & surface mount fixtures
- New electronic 1 & 2 lamp models for 24 watt lamps
- Electronic models feature universal input voltage from 120V to 277V. 347V models are also available.
- Electronic models feature programmed rapid start for excellent lamp performance & auto reset shutdown circuit



**LONG TWIN
T5 LAMPS**
36/39 & 40
WATTS

QUICK REFERENCE Nominal lamp watts and configuration	Mag or Elec	Qty of Lamps	Line Volt	Catalog [®] Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method [⚡]	Dim	Wir Diag	
												Side Exit	Multi Exit	Multi Exit Studs				
Lamp Type																		
Electrical Characteristics - 60 Hz																		
36/39 Watts FT36W/2G11/RS  Long Twin T5, 4-Pin	○ E	1	120 277	B224PUNV-C•	36	0.30 0.13	---	0.95	0/-18	>.98 >.95	<10%	X	--	--	PS	-C	43	
	○ E	1	120 277	B254PUNV-D•	44	0.37 0.17	---	1.20	-20/-29	>.99 >.94	<10%	X	--	--	PS	-D	43	
	E	1	120 277	B254PUNVHB-D	44	0.37 0.17	---	1.20	-20/-29	>.99 >.94	<10%	X	--	--	PS	-D	43	
	E	1	120 277	B254PUNVPL-A	46 45	0.38 0.18	---	1.00	-20/-29	>.99 >.90	<10%	X	--	--	PS	-A	A	
	E	1	120 277	B254PUNVPLHBA	46 45	0.38 0.18	---	1.00	-20/-29	>.99 >.90	<10%	X	--	--	PS	-A	A	
	○ E	1	120 277	C242UNV♦	34 33	0.29 0.14	---	0.88	0/-18	>.99 >.90	<10% <20%	X	X	X	PS	C4	21	
	○ E	2	120 277	B239PUNV-D•	71 70	0.59 0.26	---	0.97	0/-18	>.98 >.95	<10%	X	--	--	PS	-D	29	
	○ E	2	120 277	B254PUNV-D	89 83	0.70 0.30	---	1.10	-20/-29	>.99 >.97	<10%	X	--	--	PS	-D	29	
	E	2	120 277	B254PUNVHB-D	89 83	0.70 0.30	---	1.10	-20/-29	>.99 >.97	<10%	X	--	--	PS	-D	29	
	E	2	120 277	B254PUNVPL-A	85 83	0.71 0.31	---	0.98 0.96	-20/-29	>.99 >.96	<10%	X	--	--	PS	-A	A	
	E	2	120 277	B254PUNVPLHBA	85 83	0.71 0.31	---	0.98 0.96	-20/-29	>.99 >.96	<10%	X	--	--	PS	-A	A	
	E	2	347	C242/347♦♦	64	0.19	---	0.90	0/-18	>.98	<10%	--	X	X	PS	C4	20	
	E	2	120 277	C242UNV♦♦	64	0.57 0.25	---	0.83	0/-18	>.99 >.97	<10%	--	X	X	PS	C4	20	
	Lamp Type																	
	36/39 Watts																	
CFM36W/2G10  T5 F-Lamp, 4-Pin	E	1	120 277	B224PUNV-C•	34	0.28 0.12	---	0.95	0/-18	>.98 >.95	<10%	X	--	--	PS	-C	43	
	E	1	120 277	C2642UNV♦x	32	0.27 0.12	---	0.98	0/-18	>.98	<10%	--	X	X	PS	C3	21	
	E	1	120 277	C242UNV♦	33	0.28 0.14	---	0.98	0/-18	>.99 >.90	<15%	--	X	X	PS	C4	21	
	E	2	120 277	C242UNV♦♦x	68 67	0.57 0.25	---	0.90	0/-18	>.95	<10%	--	X	X	PS	C4	20	
Lamp Type																		
40 Watts																		
FT40W/2G11  Long Twin T5, 4-Pin	○ E	1	120	C240SI120RH	43	0.38	---	1.02	50/10	>.90	<20%	X	--	--	IS	C6	12+	
	○ E	1	277	C240SI277RH	43	0.17	---	1.02	50/10	>.90	<20%	X	--	--	IS	C6	12+	
	E	1	120 277	C240PUNVHP-B•	41 40	0.34 0.15	---	1.00	0/-18	>.95	<10%	X	--	--	PS	-B	21	
	E	1	120 277	C242UNV♦	47	0.40 0.18	---	1.08	0/-18	>.99 >.97	<10%	--	X	X	PS	C4	21	
	○ E	2	120 277	C240PUNVHP-B•	76 73	0.63 0.27	---	0.90	0/-18	>.98	<10%	X	--	--	PS	-B	20	
	○ E	2	120	C240SI120RH	70	0.59	---	0.88	50/10	>.95	<20%	X	--	--	IS	C6	12	
	○ E	2	277	C240SI277RH	70	0.25	---	0.88	50/10	>.95	<20%	X	--	--	IS	C6	12	
	E	2	120 277	C242UNV♦	93 87	0.78 0.34	---	1.00	0/-18	>.99 >.98	<10%	--	X	X	PS	C4	20	
	E	2	120	C340SI120RH	78	0.68	---	0.99	50/10	>.90	<20%	X	--	--	IS	C6	14+	
	E	2	277	C340SI277RH	77	0.28	---	0.99	50/10	>.90	<20%	X	--	--	IS	C6	14+	
	E	3	120	C340SI120RH	104	0.88	---	0.88	50/10	>.95	<20%	X	--	--	IS	C6	14	
E	3	277	C340SI277RH	102	0.37	---	0.88	50/10	>.95	<10%	X	--	--	IS	C6	14		
E	3	347	B332I347HP	97	0.28	---	0.85	0/-18	>.99	<20%	X	--	--	IS	ST	6		

Compact Fluorescent

ELECTRONIC LONG TWIN T5 LAMPS



50, 55 & 80 WATTS



- Ideal for track light & recessed fixtures
- Electronic models for 1, 2, 3 & 4 lamp applications
- Programmed Rapid & Instant Starting Options
- Models feature auto reset shutdown circuit

ELECTRONIC LONG TWIN T5 BALLASTS

50, 55 AND 80 WATTS
(BIAX, DULUX L AND PLL)


QUICK REFERENCE Nominal lamp watts and configuration	Mag or Elec	Qty of Lamps	Line Volt	Catalog [Ⓞ] Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method [⚡]	Dim	Wir Diag
												Side Exit	Multi Exit	Multi Exit Studs			
Electrical Characteristics - 60 Hz																	
50 Watts FT50W/2G11  Long Twin T5, 4-Pin	E	1	347	B254P347-D	58	0.17	---	1.12	-20/-29	>.95	<10%	X	---	---	PS	-D	43
	E	1	347	B254PHRVHB-E	65	0.19	---	1.12	-20/-29	>.95	<10%	X	---	---	PS	-E	42
	E	1	480	B254PHRVHB-E	65	0.15	---	1.12	-20/-29	>.90	<15%	X	---	---	PS	-E	42
	E	1	120	B254PUNV-D	57	0.47	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-D	43
	E	1	277	B254PUNV-D	57	0.21	---	1.00	-20/-29	>.96	<10%	X	---	---	PS	-D	43
	E	1	120	B254PUNVHB-D	57	0.47	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-D	43
	E	1	277	B254PUNVHB-D	57	0.21	---	1.00	-20/-29	>.96	<10%	X	---	---	PS	-D	43
	E	1	120	B254PUNVPL-A ¹	59	0.50	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-A	A
	E	1	277	B254PUNVPL-A ¹	58	0.22	---	1.00	-20/-29	>.93	<10%	X	---	---	PS	-A	A
	E	1	120	B254PUNVPLHBA ¹	59	0.50	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-A	A
	E	1	277	B254PUNVPLHBA ¹	58	0.22	---	1.00	-20/-29	>.93	<10%	X	---	---	PS	-A	A
	E	2	347	B254P347-D	106	0.31	---	1.10	-20/-29	>.98	<10%	X	---	---	PS	-D	27
	E	2	347	B254PHRVHB-E	115	0.33	---	1.10	-20/-29	>.98	<10%	X	---	---	PS	-E	41
	E	2	480	B254PHRVHB-E	114	0.25	---	1.10	-20/-29	>.95	<10%	X	---	---	PS	-E	41
	E	2	120	B254PUNV-D	111	0.93	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-D	29
	E	2	277	B254PUNV-D	108	0.40	---	1.00	-20/-29	>.98	<10%	X	---	---	PS	-D	29
	E	2	120	B254PUNVHB-D	111	0.93	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-D	29
	E	2	277	B254PUNVHB-D	108	0.40	---	1.00	-20/-29	>.98	<10%	X	---	---	PS	-D	29
	E	2	120	B254PUNVPL-A ¹	112	0.95	---	0.93	-20/-29	>.99	<10%	X	---	---	PS	-A	A
	E	2	277	B254PUNVPL-A ¹	108	0.42	---	0.93	-20/-29	>.97	<10%	X	---	---	PS	-A	A
E	2	120	B254PUNVPLHBA ¹	112	0.95	---	0.93	-20/-29	>.99	<10%	X	---	---	PS	-A	A	
E	2	277	B254PUNVPLHBA ¹	108	0.42	---	0.93	-20/-29	>.97	<10%	X	---	---	PS	-A	A	
E	3	120	B454PUNV-E	179	1.49	---	1.13	-20/-29	>.98	<10%	X	---	---	PS	-E	44	
E	3	277	B454PUNV-E	177	0.64	---	1.13	-20/-29	>.95	<10%	X	---	---	PS	-E	44	
E	3	120	B454PUNVHB-E	179	1.49	---	1.13	-20/-29	>.98	<10%	X	---	---	PS	-E	44	
E	3	277	B454PUNVHB-E	177	0.64	---	1.13	-20/-29	>.95	<10%	X	---	---	PS	-E	44	
E	3	120	B454PUNVPL-E ¹	159	1.34	---	0.91	-20/-29	>.99	<10%	X	---	---	PS	-E	B	
E	3	277	B454PUNVPL-E ¹	157	0.58	---	0.91	-20/-29	>.97	<10%	X	---	---	PS	-E	B	
E	3	120	B454PUNVPLHBE ¹	159	1.34	---	0.91	-20/-29	>.99	<10%	X	---	---	PS	-E	B	
E	3	277	B454PUNVPLHBE ¹	157	0.58	---	0.91	-20/-29	>.97	<10%	X	---	---	PS	-E	B	
E	4	120	B454PUNV-E	240	1.98	---	1.10	-20/-29	>.98	<10%	X	---	---	PS	-E	44	
E	4	277	B454PUNV-E	235	0.84	---	1.10	-20/-29	>.98	<10%	X	---	---	PS	-E	44	
E	4	120	B454PUNVHB-E	240	1.98	---	1.10	-20/-29	>.98	<10%	X	---	---	PS	-E	44	
E	4	277	B454PUNVHB-E	235	0.84	---	1.10	-20/-29	>.98	<10%	X	---	---	PS	-E	44	
E	4	120	B454PUNVPL-E ¹	209	1.76	---	0.91	-20/-29	>.99	<10%	X	---	---	PS	-E	B	
E	4	277	B454PUNVPL-E ¹	203	0.75	---	0.91	-20/-29	>.98	<10%	X	---	---	PS	-E	B	
E	4	120	B454PUNVPLHBE ¹	209	1.76	---	0.91	-20/-29	>.99	<10%	X	---	---	PS	-E	B	
E	4	277	B454PUNVPLHBE ¹	203	0.75	---	0.91	-20/-29	>.98	<10%	X	---	---	PS	-E	B	
55 Watts FT55W/2G11  Long Twin T5, 4-Pin	E	1	347	B254P347-D	57	0.17	---	0.92	-20/-29	>.95	<10%	X	---	---	PS	-D	43
	E	1	347	B254PHRVHB-E	61	0.19	---	0.92	-20/-29	>.98	<10%	X	---	---	PS	-E	42
	E	1	480	B254PHRVHB-E	61	0.14	---	0.92	-20/-29	>.90	<15%	X	---	---	PS	-E	42
	E	1	120	B254PUNV-D	56	0.47	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-D	43
	E	1	277	B254PUNV-D	56	0.21	---	1.00	-20/-29	>.96	<10%	X	---	---	PS	-D	43
	E	1	120	B254PUNVHB-D	56	0.47	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-D	43
	E	1	277	B254PUNVHB-D	56	0.21	---	1.00	-20/-29	>.96	<10%	X	---	---	PS	-D	43
	E	1	120	B254PUNVPL-A ¹	58	0.49	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-A	A
E	1	277	B254PUNVPL-A ¹	58	0.22	---	1.00	-20/-29	>.93	<10%	X	---	---	PS	-A	A	
E	1	120	B254PUNVPLHBA ¹	58	0.49	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-A	A	
E	1	277	B254PUNVPLHBA ¹	58	0.22	---	1.00	-20/-29	>.93	<10%	X	---	---	PS	-A	A	
E	1	347	C242/347ME	43	0.13	---	0.83	0/-18	>.99	<10%	---	X	X	PS	C4	21	
E	1	120	C242UNV◆	46	0.38	---	0.83	0/-18	>.99	<10%	---	X	X	PS	C4	21	
E	1	277	C242UNV◆	46	0.17	---	0.83	0/-18	>.95	<10%	---	X	X	PS	C4	21	

1 Consult factory for availability

Compact Fluorescent

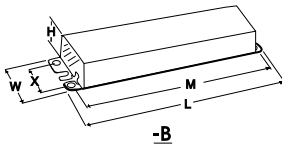
MAGNETIC AND ELECTRONIC COMPACT FLUORESCENT BALLASTS DIMENSIONS

**LONG TWIN
T5 LAMPS**

QUICK REFERENCE Nominal lamp watts and configuration	Mag or Elec	Qty of Lamps	Line Volt	Catalog [®] Number	Input Watts	Line Current Amps	Starting Current Amps	Ballast Factor	Min Start Temp (F/C)	Power Factor	THD	Lead Configuration			Starting Method ¹	Wir Dim	Wir Diag
												Side Exit	Multi Exit	Multi Exit Studs			
Lamp Type	Electrical Characteristics - 60 Hz																
55 Watts	E	2	347	B254P347-D	102	0.30	---	0.90	-20/-29	>.98	<10%	X	---	---	PS	-D	27
FT55W/2G11 	E	2	347	B254PHRVHB-E	109	0.33	---	0.90	-20/-29	>.98	<10%	X	---	---	PS	-E	41
	E	2	480		108	0.24	---	0.90	-20/-29	>.95	<10%	X	---	---	PS	-E	41
Long Twin T5, 4-Pin	E	2	120	B254PUNV-D	112	0.93	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-D	29
	E	2	277		109	0.39	---	1.00	-20/-29	>.98	<10%	X	---	---	PS	-D	29
	E	2	120	B254PUNVHB-D	112	0.93	---	1.00	-20/-29	>.99	<10%	X	---	---	PS	-D	29
	E	2	277		109	0.39	---	1.00	-20/-29	>.98	<10%	X	---	---	PS	-D	29
	E	2	120	B254PUNVPL-A ¹	107	0.89	---	0.93	-20/-29	>.99	<10%	X	---	---	PS	-A	A
	E	2	277		104	0.38	---	0.93	-20/-29	>.97	<10%	X	---	---	PS	-A	A
	E	2	120	B254PUNVPLHBA ¹	107	0.89	---	0.93	-20/-29	>.99	<10%	X	---	---	PS	-A	A
	E	2	277		104	0.38	---	0.93	-20/-29	>.97	<10%	X	---	---	PS	-A	A
	E	3	120	B454PUNV-E	174	1.45	---	0.93	-20/-29	>.98	<10%	X	---	---	PS	-E	44
	E	3	277		171	0.62	---	0.93	-20/-29	>.95	<10%	X	---	---	PS	-E	44
	E	3	120	B454PUNVHB-E	174	1.45	---	0.93	-20/-29	>.98	<10%	X	---	---	PS	-E	44
	E	3	277		171	0.62	---	0.93	-20/-29	>.95	<10%	X	---	---	PS	-E	44
	E	3	120	B454PUNVPL-E ¹	148	1.25	---	0.93	-20/-29	>.99	<10%	X	---	---	PS	-E	B
	E	3	277		146	0.54	---	0.93	-20/-29	>.97	<10%	X	---	---	PS	-E	B
	E	3	120	B454PUNVPLHBE ¹	148	1.25	---	0.93	-20/-29	>.99	<10%	X	---	---	PS	-E	B
	E	3	277		146	0.54	---	0.93	-20/-29	>.97	<10%	X	---	---	PS	-E	B
	E	4	120	B454PUNV-E	229	1.91	---	0.90	-20/-29	>.98	<10%	X	---	---	PS	-E	44
	E	4	277		223	0.80	---	0.90	-20/-29	>.98	<10%	X	---	---	PS	-E	44
	E	4	120	B454PUNVHB-E	229	1.91	---	0.90	-20/-29	>.98	<10%	X	---	---	PS	-E	44
	E	4	277		223	0.80	---	0.90	-20/-29	>.98	<10%	X	---	---	PS	-E	44
	E	4	120	B454PUNVPL-E ¹	191	1.61	---	0.93	-20/-29	>.99	<10%	X	---	---	PS	-E	B
	E	4	277		187	0.69	---	0.93	-20/-29	>.98	<10%	X	---	---	PS	-E	B
	E	4	120	B454PUNVPLHBE ¹	191	1.61	---	0.93	-20/-29	>.99	<10%	X	---	---	PS	-E	B
	E	4	277		187	0.69	---	0.93	-20/-29	>.98	<10%	X	---	---	PS	-E	B

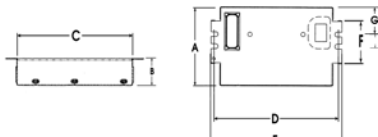
1 Consult factory for availability

REFERENCE DRAWING FOR -B



Dwg.	L	W	H	M	X
-B	9.50"	1.50"	1.00"	8.89"	0.88"

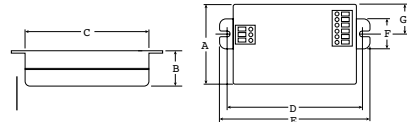
REFERENCE DRAWING FOR C4



Dwg.	A	B	C	D	E	F	G
C4	2.98"	1.00"	4.25"	4.61"	4.94"	1.56"	1.00"

Leadless-Poke-in wire connection

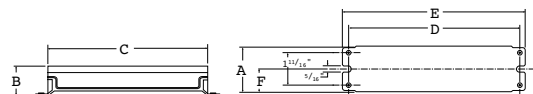
REFERENCE DRAWING FOR C3



Dwg.	A	B	C	D	E	F	G
C3	2.31"	1.00"	4.25"	4.61"	4.94"	0.98"	1.00"

Leadless-Poke-in wire connection

REFERENCE DRAWING FOR C6



Dwg.	A	B	C	D	E	F
C6	2.40"	1.55"	8.31"	8.89"	9.50"	1.19"

Lead Lengths: Side

- Black/White-11"
- Red/Blue-16"
- Yellow-16"

Note: Nominal dimensions provided above
Contact Universal for drawings and/or tolerances

MAGNETIC AND ELECTRONIC COMPACT FLUORESCENT BALLASTS WIRING DIAGRAMS

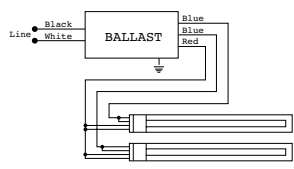


DIAGRAM 12
Parallel lamp operation

* Cap unused blue lead; insulate to 600 volts.

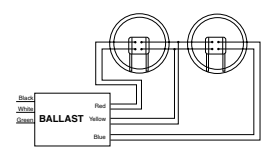


DIAGRAM 23
Series lamp operation

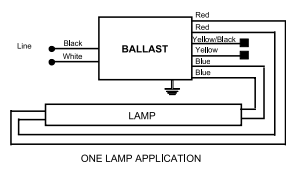


DIAGRAM 42
ONE LAMP APPLICATION
For one lamp application, individually cap yellow and yellow/black leads, insulate to 600V

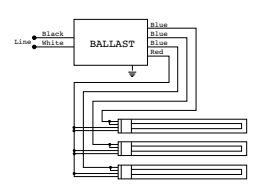


DIAGRAM 14
Parallel lamp operation

* Cap unused blue lead; insulate to 600 volts.

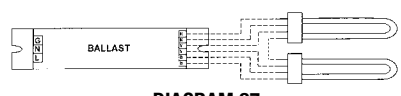


DIAGRAM 27
Series lamp operation

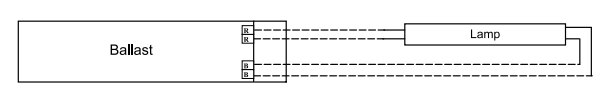


DIAGRAM 43

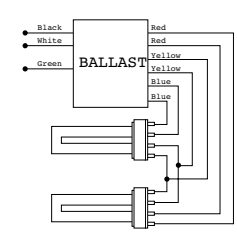


DIAGRAM 20
Series lamp operation

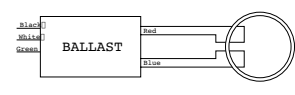
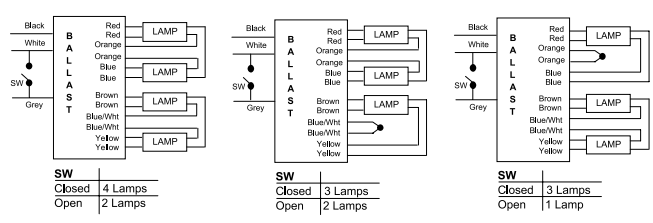


DIAGRAM 28



SW
Closed | 4 Lamps
Open | 2 Lamps

SW
Closed | 3 Lamps
Open | 2 Lamps

SW
Closed | 3 Lamps
Open | 1 Lamp

Application Notes:
 - 'SW' controls the lamps connected between the Brown and Yellow leads
 - For lamp switching applications, connect 'SW' between the white and the grey leads as shown in the wiring diagram above OR between the Black and Grey leads. The switch 'SW' may be an on-off switch, an occupancy sensor, a relay, etc.
 - If lamp switching is not required, short the white and grey leads OR the black and the grey leads
 - A single control device, 'SW', may be connected to control multiple ballasts
 - For three lamp use: Short Blue/White leads or Orange leads and cap

DIAGRAM 44

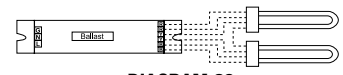


DIAGRAM 29

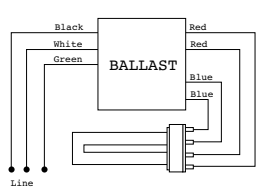


DIAGRAM 21

Mount lamp within 1" of grounded metal reflect

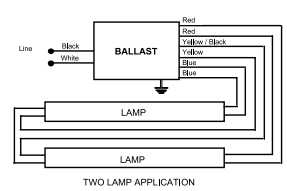
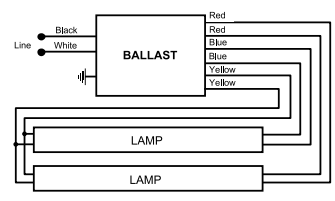
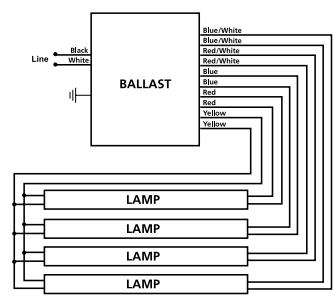


DIAGRAM 41



For one lamp operation, cap blue leads individually, insulate to 600V.

DIAGRAM A



For three lamp operation, cap Blue/White leads individually, insulate to 600V.

DIAGRAM B

Notes
