

Tu-Wire® Overview

Tu-wire® ballasts are primarily intended for retrofit applications where fluorescent dimming must be achieved without changing the existing switching wiring scheme. Tu-wire® ballasts require only two input wires (hot and neutral), used both for power and dimming control. Tu-wire® ballasts offer high performance dimming from 100% down to 5% for linear and compact fluorescent lamps.

Features

- Continuous, flicker-free dimming from 100% to 5%
- 2-wire line voltage control for wiring simplicity
- Models for T4 compact and T8 lamp types
- Programmed rapid start design will preheat lamp cathodes before applying full arc voltage
- Lamps turn on to any dimmed level without flashing to full brightness
- 1 in (25 mm) high, low-profile design for use in low-profile architectural fixtures
- Frequency of operation ensures that ballast does not interfere with infrared devices operating between 38 and 42 kHz
- Inrush current limiting circuitry eliminate circuit breaker tripping, switch arcing, and relay failure
- End-of-lamp-life protection circuitry ensures safe operation throughout entire lamp life cycle for T4 lamps
- Ultra quiet operation
- Protected from shorts between any one lamp lead and ground
- Low-line voltage protection circuitry prevents damage to the ballast or lamps if the ballast is connected to an incompatible dimmer
- 100% compatible with all Lutron® 2-wire fluorescent controls
- 100% performance tested at factory
- Designed and assembled in the U.S.A.
- Ballasts that dim T4 compact fluorescent lamps are intended for factory installation by OEM fixture manufacturers
- 5-year limited warranty with Lutron® field service commissioning (3-year standard warranty) from date of purchase



Tu-Wire®, case type A

3.00 in (76 mm) W x 1.00 in (25 mm) H x 4.90 in (124 mm) L



Tu-Wire®, case type B

3.00 in (76 mm) W x 1.00 in (25 mm) H x 6.75 in (171 mm) L



Tu-Wire®, case type C

1.18 in (30 mm) W x 1.00 in (25 mm) H x 18.00 in (457 mm) L

LUTRON® SPECIFICATION SUBMITTAL

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Specifications

Performance

- Dimming Range: 100% to 5% measured relative light output (RLO)
- Lamp Starting: programmed rapid start
- Minimum Lamp Starting Temperature: 50 °F (10 °C)
- Ambient Temperature Operating Range: 50 °F to 140 °F (10 °C to 60 °C)
- Relative Humidity: maximum 90% noncondensing
- Operating Voltage: 120 V~, 60 Hz nominal line
- Lamp Current Crest Factor: less than 1.7
- Lamp Flicker: none visible
- Light Output: constant ±5% light output for line voltage variations of ±10%
- Lamp Life: average lamp life meets or exceeds rating of lamp manufacturer
- Ballast Factor: greater than 0.85
- Power Factor: greater than 0.95
- Total Harmonic Distortion (THD): less than 20% at full light output
- Frequency of Operation: greater than 42 kHz
- Maximum Inrush Current: 7 A per ballast at 120 V~
- Sound Rating: Inaudible in a 27 dB ambient
- Maximum Ballast Case Temperature: 167 °F (75 °C)




Standards

- California Energy Commission (CEC) Listed
- UL Listed (evaluated to the requirements of UL935)
- CSA certified (evaluated to the requirements of C22.2 No. 74) *
- Class P thermally protected
- Meets ANSI C82.11 High Frequency Ballast Standard
- Meets FCC Part 18 non-consumer requirements for EMI/RFI emissions
- 1-lamp ballasts for 4-pin compact fluorescent lamps meet FCC Part 18 consumer requirements for EMI/RFI emissions (FCC ID: JP2B001)
- Meets ANSI C62.41 Category A surge protection standards up to and including 6 kV
- Manufacturing facilities employ ESD reduction practices that comply with the requirements of ANSI/ESD S20.20
- Lutron® Quality Systems registered to ISO 9001.2000

* For all models except 25 W T8

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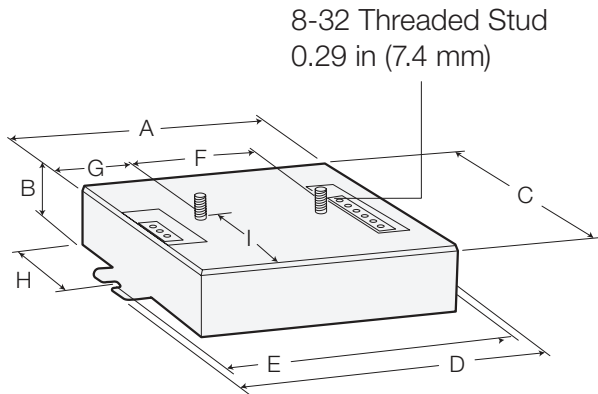
Tu-Wire® Ballast Models

Lamp Type				120 VOLTS	
	Lamp Watts (length)	Lamps per ballast	Case Type	Ballast Current (A)	Tu-Wire® Model Number
T4 4-pin Quad-tube or Triple-tube  1/2 in (12.7 mm) diameter	18 W	2	B	0.41	2W-T418-120-2-S (studded) 2W-T418-120-2 (non-studded)
	26 W	1	A	0.27	2W-T426-120-1-S (studded) 2W-T426-120-1 (non-studded)
		2	B	0.53	2W-T426-120-2-S (studded) 2W-T426-120-2 (non-studded)
T4 4-pin Triple-tube  1/2 in (12.7 mm) diameter	32 W	1	A	0.33	2W-T432-120-1-S (studded) 2W-T432-120-1 (non-studded)
		2	B	0.58	2W-T432-120-2-S (studded) 2W-T432-120-2 (non-studded)
T8 Linear and U-bent  1 in (25 mm) diameter	17 W [24 in (610 mm)]	2	C	0.40	2W-T817-120-2
	25 W [36 in (914 mm)]	1	C	0.30	2W-T825-120-1
		2	C	0.50	2W-T825-120-2
32 W [48 in (1219 mm)]	1	C	0.37	2W-T832-120 1	
	2	C	0.70	2W-T832-120 2	

Job Name:	Model Numbers:
Job Number:	

Case Dimensions

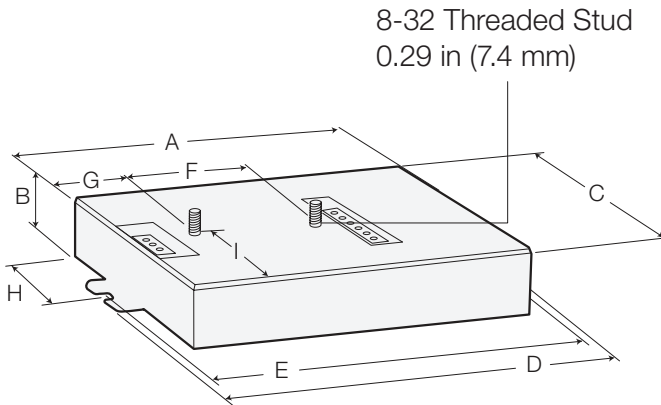
A¹



8-32 Threaded Stud
0.29 in (7.4 mm)

A	4.20 in (107 mm)
B	1.00 in (25 mm)
C	3.00 in (76 mm)
D	4.90 in (124 mm)
E	4.60 in (117 mm) (mounting centers)
F	2.00 in (51 mm)
G	1.08 in (27 mm)
H	1.60 in (41 mm)
I	1.39 in (35 mm)

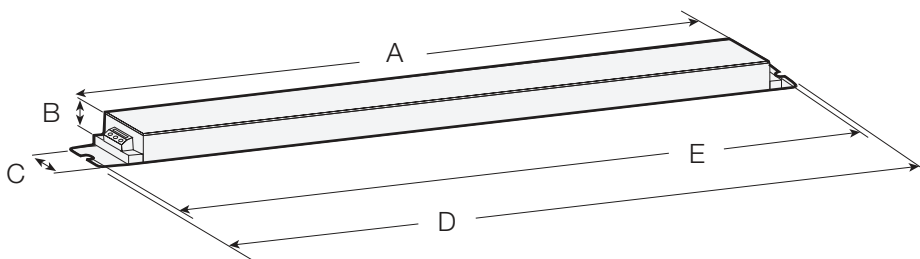
B¹



8-32 Threaded Stud
0.29 in (7.4 mm)

A	6.00 in (152 mm)
B	1.00 in (25 mm)
C	3.00 in (76 mm)
D	6.75 in (171 mm)
E	6.50 in (165 mm) (mounting centers)
F	2.00 in (51 mm)
G	1.00 in (25 mm)
H	1.60 in (41 mm)
I	1.39 in (35 mm)

C



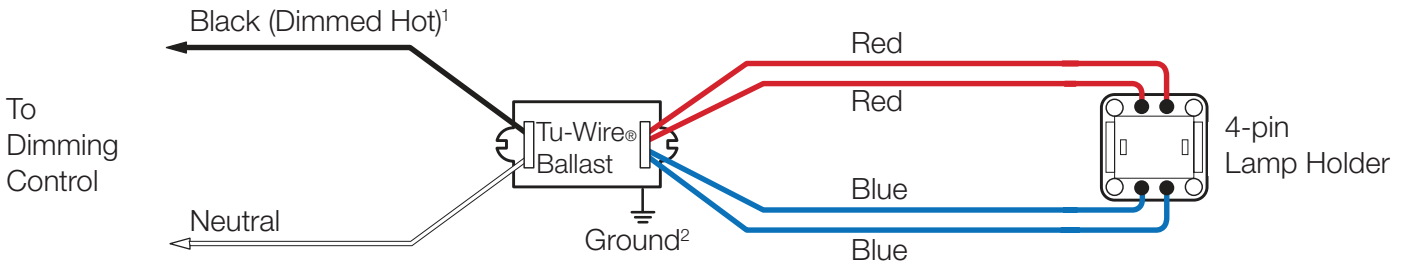
A	16.12 in (409 mm)
B	1.00 in (25 mm)
C	1.18 in (30 mm)
D	18.00 in (457 mm)
E	7.70 in (450 mm) (mounting centers)

¹ Mounting studs are provided on models ending in "-S". When ordering, delete the suffix -S in the ballast model number if the mounting studs are not needed.

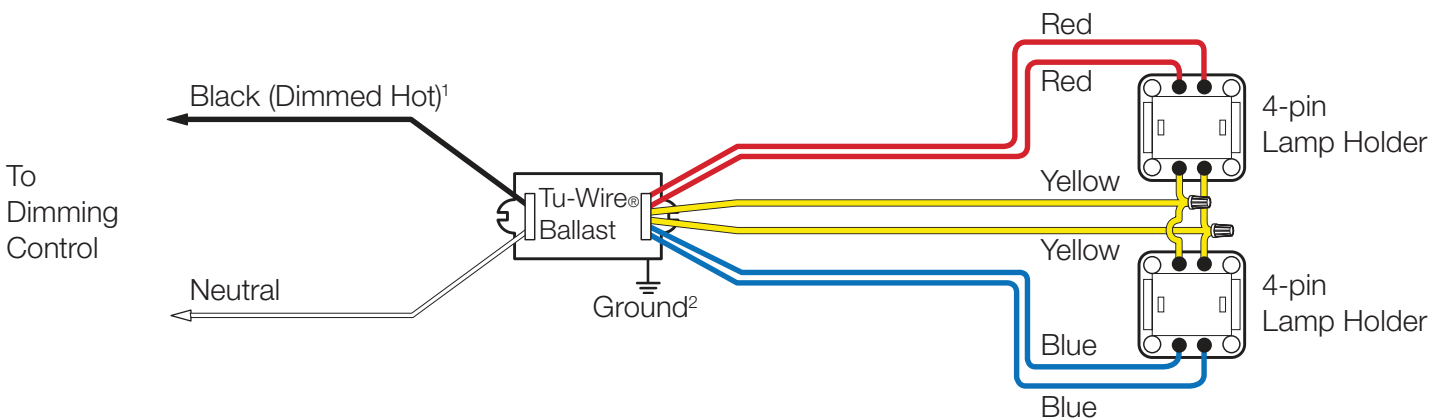
Job Name:	Model Numbers:
Job Number:	

Wiring Diagrams

One T4 Compact Lamp



Two T4 Compact Lamps



¹ Dimming control wire colors do not necessarily match the ballast wire colors (e.g. control “dimmed hot” may be red and ballast “dimmed hot” may be black). Wire colors shown are for Lutron® ballasts and controls only.

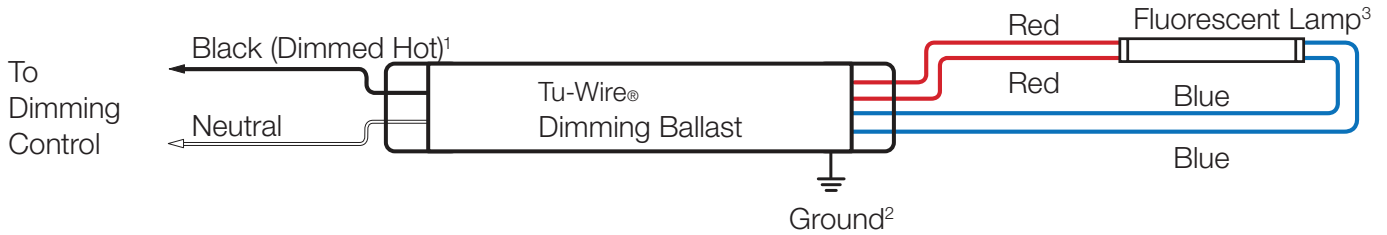
² Ballast and lighting fixture must be effectively grounded.

Note: For T4 compact lamps, the maximum lamp-to-ballast wire length is 3 ft (1 m).

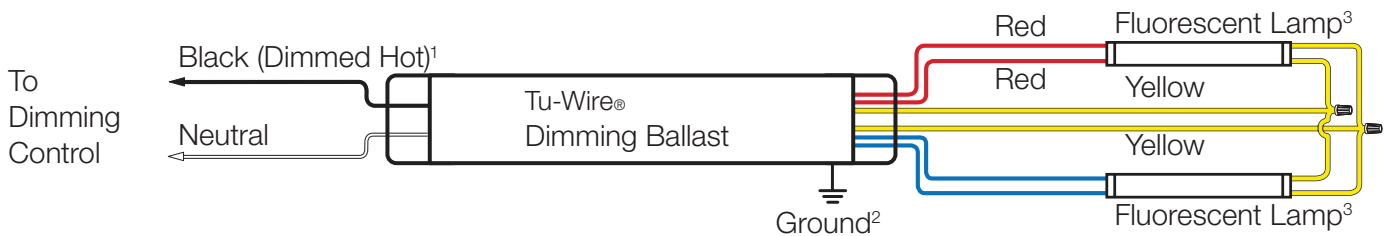
Job Name:	Model Numbers:
Job Number:	

Wiring Diagrams

One T8 Lamp



Two T8 Lamps



¹ Dimming control wire colors do not necessarily match the ballast wire colors (e.g. control “dimmed hot” may be red and ballast “dimmed hot” may be black). Wire colors shown are for Lutron® ballasts and controls only.

² Ballast and lighting fixture must be effectively grounded.

³ Includes 6 in (152 mm) T8 U-bent lamps.

Note: For T8 lamps, the maximum lamp-to-ballast wire length is 7 ft (2 m).

Job Name:	Model Numbers:
Job Number:	

ATTENTION ELECTRICIANS AND CONTRACTORS

Ballast/Socket Leads

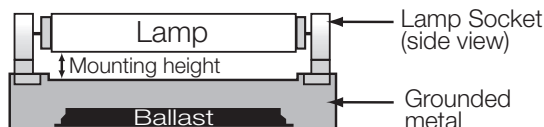
Lead lengths from ballast to socket must not exceed 7 ft (2 m) for T8 linear lamps, and 3 ft (1 m) for T4 compact lamps.

Lamp Sockets

Quality lamp sockets are required to ensure positive lamp-pin to socket contact. T8 lamps require knife-edge sockets. U-bent lamps require locking sockets and proper lamp support to hold lamp pins in full contact with the socket.

Lamp Mounting

Many fluorescent lamp sockets are available with mounting slots to vary the height of the lamp away from the grounded metal surface. Having a fluorescent lamp too close to the grounded metal will reduce lamp life. Having a fluorescent lamp too far away from the grounded metal will make the lamp flicker or not turn on at all. Please note that all of the lamp heights are measured between the grounded metal surface and the glass wall of the lamp.



IMPORTANT: Lamps must never touch ground plane and should be placed without obstruction.

Mounting for T4 Lamps

Do not allow lamp glass to come in direct contact with any grounded metal surface.

Mounting for T8 Lamps

Mount lamps 1/8 to 3/4 in (3.2 to 19 mm) away from the grounded metal surface.

Ballast Operating Temperature

Ballast case temperature must not exceed 167 °F (75 °C) at any point on ballast.

Cold Air Flow

Ensure that no cold air (from HVAC system, etc) is blowing across the lamps. Cooling the lamp will cause performance issues as noted in NEMA LSD-34.

Wiring and Grounding

All wiring from the dimming control to the Tu-Wire® ballasts is line voltage wiring and may be run together in the same conduit.

Ballast and lighting fixture must be effectively grounded. Ballasts must be installed per national and local electrical codes.

Number of Ballasts per Control

To calculate the maximum number of ballasts allowed per control, divide control’s current capacity by individual ballast current. Certain controls allow a specific maximum number of ballasts.

ATTENTION FACILITIES MANAGERS

PERFORMANCE

Lamps Seasoning Requirements

Some fluorescent lamp manufacturers recommend that new fluorescent lamps be operated at full output (“seasoned”) before they can be dimmed, to render lamp impurities inert, ensuring proper dimming performance and average rated lamp life. Please contact your lamp manufacturer for seasoning requirements.

SERVICE

Replacement Parts

Use replacement parts with exact Lutron® model numbers. Consult Lutron if you have any questions.

Further Information

For further information, please visit us at www.lutron.com/ballasts or contact our 24-hour Technical Support Center at 1.800.523.9466.

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Job Number:	