

Highest performance dimming to 1% at a low cost  
EcoSystem digital link controlled

**CE, CSA, CCC AND INMETRO  
MODELS AVAILABLE**



Shown above: EcoSystem H-Series, M-case

**Model numbers are organized by lamp type, refer to pg.568 for additional information.**

EcoSystem H-Series digitally addressable ballasts offer a low-cost, flexible solution for any space in an application. Providing industry-leading dimming to 1% or less, they meet the needs of the most demanding applications. The EcoSystem digital link also provides individual control, which eliminates the need to rewire, reduces design time, and provides a scalable solution from a small area to an entire building.

### Operating voltage

- Universal input (120V, 220/240V and 277V @ 50/60Hz) and 347V @ 60Hz

### Lamp types and wattages

#### UL Listed (for North America):

- T8 linear and U-bent: 17W, 25W, 32W
- T5 HO linear: 24W, 39W, 54W
- T5 linear: 14W, 21W, 28W

#### Global models:

- T8 linear: 32W
- T5 HO linear: 24W, 39W, 54W
- T5 linear: 14W, 21W, 28W

### Control option

- EcoSystem digital link

### Available case types

- G-case
- M-case
- C-case (347V only)

### Key standards

- California Energy Commission Listed
- UL Listed (evaluated to the requirements of UL 935)
- CSA Certified (evaluated to the requirements of C22.2 No. 74)
- Meets FCC Part 18 Non-Consumer requirements for EMI/RFI emissions
- Select models are NOM listed
- Models are also available to meet global country-specific standards. See pg. 588 for a listing of global model numbers

[Download specification submittal for 120V-220V-277V](#)  
[Download specification submittal for 347V](#)  
[Download specification submittal for 220V-240V](#)  
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## Features

- Continuous, flicker-free dimming down to 0.70% or 1% of full light output for T8 lamps, 1% for T5 and T5 HO lamps
- The EcoSystem digital link allows for re-zoning without rewiring, and can be wired as Class 1 or Class 2—perfect for retrofit and new construction
- The EcoSystem® digital link supports up to 64 digital ballasts, 64 occupancy sensors, 16 daylight sensors, and 64 wall stations or infrared (IR) receivers
- The PowPak® dimming module with EcoSystem supports 32 EcoSystem ballasts or drivers, nine Pico® wireless controls, six occupancy/vacancy sensors and one daylight sensor
- Low-voltage, 2-conductor EcoSystem digital link provides individual, reconfigurable fixture control
- Sensors cannot connect directly to EcoSystem H-Series ballasts
- Communicates with wired or wireless sensors and controls via compatible device
- Line-voltage miswire protection of EcoSystem link
- Slim-profile design
- Ballasts maintain consistent light output for different lamp lengths, ensuring fixture-to-fixture uniformity
- Lamps turn on at any dimmed level without going to full brightness
- 100% performance-tested, including burn-in at the factory

## Mounting

- Ballast mounts using two screws (or sheet metal feature and one screw) within a fluorescent fixture
- Ballast is grounded via a mounting screw to the fixture
- Lutron and NEMA® recommend sockets complying with IEC 60400. Sockets must have a UL mark as well. Use rapid start sockets, not instant start sockets.
- Terminals accept 16-18AWG (0.75 to 1.50mm<sup>2</sup>) solid copper or tinned stranded wire

## Specifications

- Total Harmonic Distortion (THD): less than 10%
- Power factor greater than 0.95
- Ballast factor equal to 1.00 or 1.17 for T8 lamps
- Ballast factor equal to 1.00 for T5 and T5 HO lamps and all international models
- Non-volatile memory restores all ballast settings after power failure
- Frequency of operation greater than 42 kHz
- Built-in inrush-current limiting circuitry (maximum of 7 amps at 120V and 3 amps at 277V)
- Factory-tuned ballast factors available to customize the ballast for different applications (not available for models outside the US)

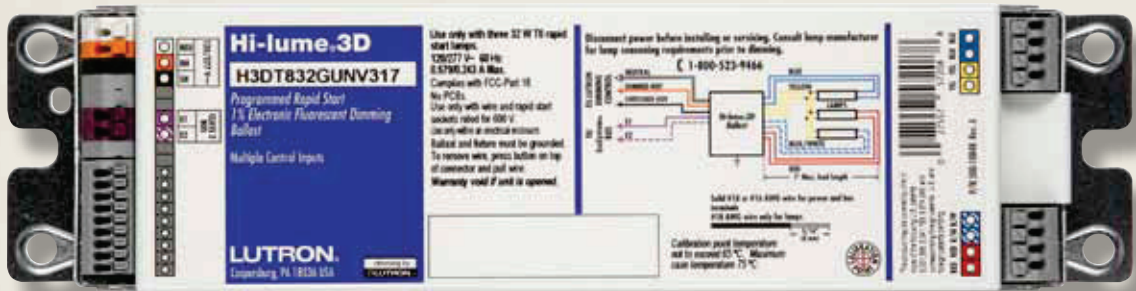
## Environment

- Sound rating: Class A
- Minimum lamp starting temperature 10°C (50°F)
- Maximum ballast case temperature 75°C (167°F)

## Wiring

- EcoSystem H-Series ballasts require four wires plus Ground (E1, E2, Constant Hot and Neutral); one 16-18AWG solid copper Class 1 or Class 2 wire per terminal
- The 16AWG control wire must not exceed 900ft, and the 18AWG must not exceed 550ft; maximum ballast-to-lamp-socket lead length is 7 ft (2 m) for T8, T5 and T5 HO linear lamps

Highest performance dimming to 1%  
EcoSystem® digital link or 3-wire controlled



Shown above: Hi-lume 3D, G-case

**Model numbers are organized by lamp type, refer to pg. 568 for additional information.**

Hi-lume 3D is a high-performance, energy-efficient, digitally addressable dimming ballast for demanding architectural applications. Hi-lume 3D is the world's first fluorescent dimming ballast that dims lights to 1% or less for T8 lamps. With Hi-lume 3D you get the highest performance fluorescent dimming with the same efficiency as non-dimmable ballasts.

**Operating voltage**

- Universal input (120V, 220/240V, 277V @ 50/60Hz)

**Lamp types and wattages**

- T8 linear and U-bent: 17W, 25W, 32W, 40W
- T5 HO linear: 24W, 39W, 54W, 80W<sup>1</sup>
- T5 linear: 14W, 21W, 28W
- T5 twin tube<sup>1</sup>: 36W, 40W, 50W

**Control options**

- EcoSystem digital link
- 3-wire control

**Available case types**

- C-case
- G-case

**Key standards**

- California Energy Commission Listed
- UL Listed (evaluated to the requirements of UL 935)
- CSA certified (evaluated to the requirements of C22.2 No. 74, specific model numbers only)
- Meets FCC Part 18 Non-Consumer requirements for EMI/RFI emissions
- Select models are NOM listed

<sup>1</sup>80W T5 HO model and T5 twin-tube models dim to 5%

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## Features

- Industry-leading ballast efficacy of up to 100 lumens per watt
- Broadest dimming range: continuous, flicker-free dimming down to 0.70% of full light output for T8 lamps, 1% for T5 and T5 HO lamps, and 5% for T5 twin-tube and T5 HO 80W lamps
- The EcoSystem® digital link supports up to 64 digital ballasts, 64 occupancy sensors, 16 daylight sensors, and 64 wallstations or infrared (IR) receivers
- The PowPak® dimming module with EcoSystem supports 32 EcoSystem ballasts or drivers, nine Pico® wireless controls, six occupancy/vacancy sensors and one daylight sensor
- EcoSystem digital link allows for rezoning without rewiring, and can be wired as Class 1 or Class 2—perfect for retrofit and new construction
- Sensors cannot connect directly to the Hi-lume 3D ballasts
- Communicates with wired or wireless sensors and controls via compatible device
- Line-voltage miswire protection of EcoSystem link
- Slim-profile design
- Ballasts maintain consistent light output for different lamp lengths, ensuring fixture-to-fixture uniformity
- Lamps turn on at any dimmed level without going to full brightness
- 100% performance-tested, including burn-in at the factory

## Specifications

- Total Harmonic Distortion (THD): less than 10%
- Power factor greater than .95
- Ballast factor equal to 1.00 or 1.17 for T8 lamps
- Ballast factor equal to 1.00 for T5 lamps
- Frequency of operation greater than 42 kHz
- Factory-tuned ballast factors available to customize the ballast for different applications

## Environment

- Sound rating: Class A
- Minimum lamp starting temperature 10°C (50°F)
- Maximum ballast case temperature 75°C (167°F)

## Mounting

- Ballast mounts using two screws (or sheet metal feature and one screw) within a fluorescent fixture
- Ballast is grounded via a mounting screw to the fixture
- Lutron and NEMA® recommend sockets complying with IEC 60400. Sockets must have a UL mark as well. Use rapid start sockets, not instant start sockets.
- Terminals accept 16-18AWG (0.75 to 1.50mm<sup>2</sup>) solid copper or tinned stranded wire

## Wiring

- **EcoSystem digital link:** Hi-lume 3D ballasts require 4 wires plus Ground (E1, E2, Constant Hot and Neutral); one 16-18AWG solid copper Class 1 or Class 2 wire per terminal
- **3-Wire:** Hi-lume 3D ballasts require three wires plus Ground (Dimmed Hot, Switched Hot and Neutral); one 16-18AWG solid copper Class 1 wire per terminal
- The 16AWG control wire must not exceed 900ft, and the 18AWG must not exceed 550ft; maximum ballast-to-lamp-socket lead length is 7 ft (2m) for T8, T5 and T5 HO linear lamps, and 3ft (1m) for T5 twin-tube lamps
- Ballast is grounded via case

T5 Linear (continued) 

**Hi-lume® 3D (1% dimming) universal voltage digital dimming ballasts**

- Dimming to 1%
- Compatible with Lutron 3-wire fluorescent controls and EcoSystem® digital controls
- Energy saving

Lamp Watts (Length)	Lamps per Ballast	Model Number	Case Type*	Input Voltage (VAC)	Input Current (A)	Input Power (W)	Ballast Factor (BF)**	System Lumens (lm) <sup>†</sup>	System Efficacy (lm/W) <sup>†</sup>	Ballast Efficacy Factor (BEF)	Relative System Efficacy (RSE)
14W (21.6 in)	1	<b>H3D T514 C U 1 10</b>	C	277	0.07	19.40	1.00	1,350	70	5.16	0.72
				240	0.08	19.20	1.00	1,350	70	5.21	0.73
				120	0.16	19.20	1.00	1,350	70	5.21	0.73
	2	<b>H3D T514 C U 2 10</b>	C	277	0.13	36.00	1.00	2,700	75	2.78	0.78
				240	0.15	36.00	1.00	2,700	75	2.78	0.78
				120	0.30	36.00	1.00	2,700	75	2.78	0.78
21W (33.4 in)	1	<b>H3D T521 C U 1 10</b>	C	277	0.10	26.60	1.00	2,100	79	3.76	0.79
				240	0.11	26.30	1.00	2,100	80	3.81	0.80
				120	0.22	26.30	1.00	2,100	80	3.81	0.80
	2	<b>H3D T521 C U 2 10</b>	C	277	0.18	48.50	1.00	4,200	87	2.06	0.87
				240	0.20	48.60	1.00	4,200	86	2.06	0.86
				120	0.41	48.70	1.00	4,200	86	2.05	0.86
28W (45.2 in)	1	<b>H3D T528 C U 1 10</b>	C	277	0.12	33.00	1.00	2,900	88	3.63	0.85
				240	0.13	31.20	1.00	2,900	93	3.21	0.90
				120	0.28	33.60	1.00	2,900	86	2.98	0.83
	2	<b>H3D T528 C U 2 10</b>	C	277	0.22	59.80	1.00	5,800	97	1.67	0.94
				240	0.26	62.40	1.00	5,800	93	1.60	0.90
				120	0.52	62.40	1.00	5,800	93	1.60	0.90

Refer to the online ballast selection tool for additional information, [www.lutron.com/BallastTool](http://www.lutron.com/BallastTool)

\*For case type information see pgs. 548-551.

\*\*Factory-tuned ballast factors available. To customize, visit [www.lutron.com/BallastTool](http://www.lutron.com/BallastTool)

<sup>†</sup>Actual number may vary with lamp model. Please consult the lamp manufacturer for lamp-specific data.