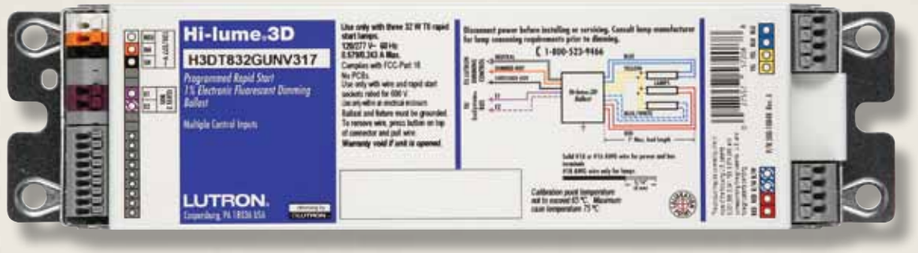
Highest performance dimming to 1%

EcoSystem® digital link or 3-wire controlled



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

Model numbers are organized by lamp type, refer to pg. 41 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 (120 V, 220/240 V, 277 V @ 50/60 Hz)

Lamp types and wattages

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

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

[1]80 W T5 HO model and T5 twin-tube models dim to 5%

For system compatibility information, see pg. 12.

Features

- Industry-leading ballast efficacy of up to 100 lumens per watt
- Broadest dimming range: continuous, flicker-free dimming down to 0.7% of full light output for T8 lamps, 1% for T5 and T5 HO lamps, and 5% for T5 twin-tube and T5 HO 80 W lamps
- The EcoSystem digital link supports up to 64 digital ballasts, 64 occupancy sensors, 16 daylight sensors, and 64 wallstations or IR receivers
- The PowPak™ dimming module with EcoSystem supports 32 EcoSystem ballasts or drivers, 9 Pico® wireless controls, 6 occupancy/vacancy sensors and 1 daylight sensor
- 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
- 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 1.0 or 1.17 for T8 lamps
- Ballast factor equal to 1.0 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 16-18 AWG (0.75 to 1.5 mm^2) 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 16-18 AWG solid copper Class 1 or Class 2 wire per terminal

  3-Wire: Hi-lume 3D ballasts require 3 wires plus Ground (Dimmed Hot, Switched Hot and Neutral); one 16-18 AWG solid copper Class 1 wire per terminal
- The 16 AWG control wire must not exceed 900 ft, and the 18 AWG must not exceed 550 ft; maximum ballast-to-lamp-socket lead length is 7 ft (2 m) for T8, T5 and T5 HO linear lamps, and 3 ft (1 m) for T5 twin-tube lamps
- Ballast is grounded via case
- For control wiring diagrams, see pg. 68, and for lamp wiring diagrams, see pg. 78.

Light management performance dimming to 10%

EcoSystem digital link or 3-wire controlled

Shown above: EcoSystem ballast, G-case

Model numbers are organized by lamp type, refer to pg. 41 for additional information.

EcoSystem digitally addressable dimming ballasts employ revolutionary technology allowing each device to listen, think, decide, remember, and react to its environment. EcoSystem fluorescent lighting control solutions are built on a simple building block architecture of fluorescent dimming ballasts, sensors, and controls, free from interfaces and power packs. EcoSystem redefines fluorescent lighting control as easy to design, easy to install, easy to maintain, and cost effective.

Operating voltage

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

Lamp types and wattages

- T8 linear and U-bent: 17 W, 25 W, 32 W
- T8 linear Reduced Wattage: 25 W, 28 W, 30 W
- T5 HO linear: 24 W, 39 W, 54 W
- T5 linear: 14 W, 21 W, 28 W, 35 W
- T5 twin-tube: 36 W, 39 W, 40 W, 50 W, 55 W
- T5 twin-tube Reduced Wattage: 25 W

Control options

- EcoSystem digital link
- 3-Wire control

Available case types

- G-case
- J-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)
- Select models are NOM listed
- Meets FCC Part 18 Non-Consumer requirements for EMI/RFI emissions

For system compatibility information, see pg. 12.

Features

- Continuous, flicker-free dimming from 100% to 10%
- 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 wallstations or IR receivers
- The PowPak™ dimming module with EcoSystem supports 32 EcoSystem ballasts or drivers, 9 Pico® wireless controls, 6 occupancy/vacancy sensors and 1 daylight sensor
- Low-voltage, 2-conductor EcoSystem digital link provides individual, reconfigurable fixture control
- Supports digital control and standard 3-wire line-voltage phase control technology
- Sensors can connect directly to EcoSystem ballasts; all sensor and wallstation wiring is Class 2
- Communicates with wired or wireless sensors and controls via local wired sensor connections or 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% (select models are less than 15%)
- Power factor greater than 0.95
- Ballast factor equal to 0.85 for T8 lamps
- Ballast factor equal to 1.0 for T5 and T5 HO lamps
- Non-volatile memory restores all ballast settings after power failure
- Frequency of operation ensures that ballast does not interfere with infrared devices
- 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 16-18 AWG (0.75 to 1.5 mm^2) solid copper or tinned stranded wire

Wiring

- **EcoSystem digital link:** EcoSystem ballasts require 4 wires plus Ground (E1, E2, Constant Hot and Neutral); one 16-18 AWG solid copper Class 1 or Class 2 wire per terminal

  3-Wire: EcoSystem ballasts require 3 wires plus Ground (Dimmed Hot, Switched Hot and Neutral); one 16-18 AWG solid copper Class 1 wire per terminal
- The 16 AWG control wire must not exceed 900 ft, and the 18 AWG must not exceed 550 ft; maximum ballast-to-lamp-socket lead length is 7 ft (2 m) for T8, T5 and T5 HO linear lamps, and 3 ft (1 m) for T5 twin-tube lamps
- Ballast is grounded via case
- For control wiring diagrams, see pg. 68, and for lamp wiring diagrams, see pg. 78.

T8 and U-bent (continued)

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

- Dimming to 1% or less
- 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)†	System Efficacy (lm/W)†	Ballast Efficacy Factor (BEF)	Relative System Efficacy (RSE)
17W (24 in)	1	**H3D T817 C U 1 10** **H3D T817 G U 1 10**	C G	277	0.08	22.2	1.00	1,300	59	4.51	0.77
				240	0.09	21.6	1.00	1,300	60	4.63	0.79
				120	0.18	21.6	1.00	1,300	60	4.63	0.79
		H3D T817 C U 1 17 **H3D T817 G U 1 17**	C G	277	0.08	22.2	1.17	1,521	69	5.28	0.90
				240	0.10	24.0	1.17	1,521	63	4.88	0.83
				120	0.19	22.8	1.17	1,521	67	5.13	0.87
	2	**H3D T817 C U 2 10** **H3D T817 G U 2 10**	C G	277	0.15	41.6	1.00	2,600	63	2.41	0.82
				240	0.18	43.2	1.00	2,600	60	2.31	0.79
				120	0.35	42.0	1.00	2,600	62	2.38	0.81
		H3D T817 C U 2 17 **H3D T817 G U 2 17**	C G	277	0.15	41.6	1.17	3,042	73	2.82	0.96
				240	0.17	40.8	1.17	3,042	75	2.87	0.98
				120	0.35	42.0	1.17	3,042	72	2.79	0.95
	3	**H3D T817 G U 3 10**	G	277	0.21	58.2	1.00	3,900	67	1.72	0.88
				240	0.25	60.0	1.00	3,900	65	1.67	0.85
				120	0.48	57.6	1.00	3,900	68	1.74	0.89
		H3D T817 G U 3 17	G	277	0.23	63.7	1.17	4,563	72	1.84	0.94
				240	0.27	64.8	1.17	4,563	70	1.81	0.92
				120	0.55	66.0	1.17	4,563	69	1.77	0.90
25W (36 in)	1	**H3D T825 C U 1 10**	C	277	0.11	30.5	1.00	1,900	62	3.28	0.82
				240	0.11	26.4	1.00	1,900	72	3.79	0.95
				120	0.26	31.2	1.00	1,900	61	3.21	0.80
		H3D T825 C U 1 17	C	277	0.12	33.2	1.17	2,223	67	3.52	0.88
				240	0.14	33.6	1.17	2,223	66	3.48	0.87
				120	0.28	33.6	1.17	2,223	66	3.48	0.87
	2	**H3D T825 C U 2 10**	C	277	0.20	55.4	1.00	3,800	69	1.81	0.90
				240	0.23	55.2	1.00	3,800	69	1.81	0.91
				120	0.47	56.4	1.00	3,800	67	1.77	0.89
		H3D T825 C U 2 17	C	277	0.22	60.9	1.17	4,446	73	1.92	0.96
				240	0.25	60.0	1.17	4,446	74	1.95	0.98
				120	0.51	61.2	1.17	4,446	73	1.91	0.96

*For case type information see pgs. 20-23.
Factory-tuned ballast factors available. To customize, visit **www.lutron.com/BallastTool
†Actual number may vary with lamp model. Please consult the lamp manufacturer for lamp-specific data.

Ballasts and drivers | **Fluorescent ballast model numbers**

T8 and U-bent (continued)

(cont.) Hi-lume 3D (1% or less dimming) universal voltage digital dimming ballasts

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)†	System Efficacy (lm/W)†	Ballast Efficacy Factor (BEF)	Relative System Efficacy (RSE)
32W (48 in)	1	**H3D T832 C U 1 10** **H3D T832 G U 1 10**	C G	277	0.12	33.2	1.00	3,000	90	3.01	0.96
				240	0.14	33.6	1.00	3,000	89	2.98	0.95
				120	0.29	34.8	1.00	3,000	86	2.87	0.92
		H3D T832 C U 1 17 **H3D T832 G U 1 17**	C G	277	0.15	41.6	1.17	3,510	84	2.82	0.90
				240	0.17	40.8	1.17	3,510	86	2.87	0.92
				120	0.34	40.8	1.17	3,510	86	2.87	0.92
	2	**H3D T832 C U 2 10** **H3D T832 G U 2 10**	C G	277	0.24	66.5	1.00	6,000	90	1.50	0.96
				240	0.28	67.2	1.00	6,000	89	1.49	0.95
				120	0.57	68.4	1.00	6,000	88	1.46	0.94
		H3D T832 C U 2 17 **H3D T832 G U 2 17**	C G	277	0.28	77.6	1.17	7,020	91	1.51	0.97
				240	0.32	76.8	1.17	7,020	91	1.52	0.98
				120	0.65	78.0	1.17	7,020	90	1.50	0.96
	3	**H3D T832 G U 3 10**	G	277	0.37	102.5	1.00	9,000	88	0.98	0.94
				240	0.40	96.0	1.00	9,000	94	1.04	1.00
				120	0.83	99.6	1.00	9,000	90	1.00	0.96
		H3D T832 G U 3 17	G	277	0.41	113.6	1.17	10,530	93	1.03	0.99
				240	0.47	112.8	1.17	10,530	93	1.04	1.00
				120	0.95	114.0	1.17	10,530	92	1.03	0.99
40W (60 in)	1	**H3D T840 C U 1 10**	C	277	0.16	42.8	1.00	3,800	89	2.34	0.94
				240	0.18	43.0	1.00	3,800	88	2.33	0.93
				120	0.37	43.8	1.00	3,800	87	2.28	0.91
		H3D T840 C U 1 17	C	277	0.18	49.6	1.17	4,446	90	2.36	0.94
				240	0.21	49.4	1.17	4,446	90	2.37	0.95
				120	0.43	50.6	1.17	4,446	88	2.31	0.92
	2	**H3D T840 C U 2 10**	C	277	0.32	88.9	1.00	7,600	86	1.13	0.90
				240	0.37	88.4	1.00	7,600	86	1.13	0.91
				120	0.77	90.9	1.00	7,600	84	1.10	0.88
		H3D T840 C U 2 17	C	277	0.36	98.2	1.17	8,892	91	1.19	0.95
				240	0.41	97.2	1.17	8,892	92	1.20	0.96
				120	0.84	100.3	1.17	8,892	89	1.17	0.93

*For case type information see pgs. 20-23.
Factory-tuned ballast factors available. To customize, visit **www.lutron.com/BallastTool
†Actual number may vary with lamp model. Please consult the lamp manufacturer for lamp-specific data.