

Feature Specifications – Energos Control System (For standard Energos fixtures consult appropriate EG spec sheets)

Feature Specifications

Electrical

Dedicated low voltage (24 VDC) circuit controls the Energos Control Systems. The line voltage circuits control all the standard ballast functions including A/B switching, Dimming and Emergency Battery Pack operations.



1. End Cap Sensor Mounting



2. Mid-mounted 8' (243.84cm) Sensor Mounting

ECS occupancy sensors are available in two variations:

- Mounted in the end cap.
- The middle of an 8' (243.84cm) module.

The ECS system control-center is the Power Pack. The Power Pack, contained in each Master Module, interrupts the circuits when parameters dictate. The Power Pack can control up to 600 watts 120 VAC, and 1300 watts 277 VAC. A maximum of 10 sensors can be used on a single Power Pack. There is no limitation to the number of Power Packs that can be "daisy-chained" to a single ECS circuit.

Emergency battery packs can be used in conjunction with ECS for emergency egress lighting since all listed packs operate for a minimum of 90 minutes. EM Packs can be used as momentary lighting for emergency circuit for power transitions, and smaller packs are recommended for this purpose.

Dimming ballasts can be used in conjunction with ECS. However, the control system will only perform ON or OFF operations and will not affect the level of dimming set by the dimming ballasts.

Factory installed ballast disconnect allows the ballast to be disconnected from and reconnected to incoming power under load without turning the entire circuit off.

Serial Row Linking (SRL) provides multiple continuous row communication. For every run that SRL is required, order the appropriate SRL end set from page 2 of this Specification Sheet. Consult Energos Application Guide for more detailed definitions and examples.

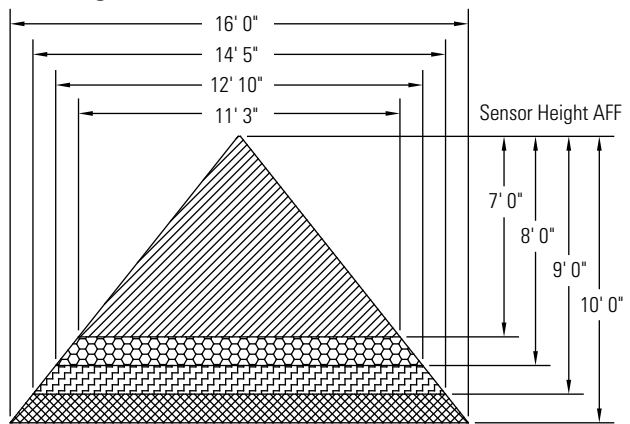
Mountings

Cable suspension distances are on 48" (121.92cm) and 96" (243.84cm) centers, and consist of a 4 1/2" (11.43cm) diameter canopy finished white enamel. A 1/16" (0.16cm) diameter stainless steel aircraft cable accomplishes suspension and is adjustable from 12" (30.48cm) to 36" (91.44cm). Power feeds are 18 gauge white cord.

Occupancy Sensors:

- Time delay is factory pre-set to 30 minutes.
- Time delay can be field adjusted from 30 minutes to a minimum of 30 seconds.
- Daylight hold-off is factory pre-set to 120 ft-candles (1291.67m-candles).
- Daylight hold-off is field adjustable from 120 ft-candles (1291.67m-candles) down to 10 ft-candles (107.64m-candles).
- Sensors are designed for a detection area (sensitivity diameter) of 16' (487.68cm) when suspended 10' (304.80cm) AFF. Lowering the sensor produces a smaller area of detection. See chart and diagram for additional information.
- Wattstopper FS-205v2

Coverage Diameter



Energos Occupancy Sensor Coverage Zone Chart

| Height of Sensor | Broadcast Diameter | Task Diameter |
|-------------------|--------------------|------------------|
| 10' 0" (304.80cm) | 16' 0" (487.68cm) | 8' 0" (243.84cm) |
| 9' 0" (274.32cm) | 14' 5" (427.99cm) | 7' 3" (214.12cm) |
| 8' 0" (243.84cm) | 12' 10" (391.16cm) | 6' 5" (184.15cm) |
| 7' 0" (213.36cm) | 11' 3" (336.04cm) | 5' 7" (154.18cm) |

Job Information

Type:

Job Name:

Cat. No.:

Lamp(s):

Notes:

Control Ordering Information

| Family | Series | Lamping & Distribution | Ballast | Lamp | Shielding | Length | Voltage | Finish | Options (Blank) |
|-----------|----------|--|---------------------|---------------------|-----------------------------|---|---|--|--|
| EC | 1 | <p>3 = 3 lamp, open top</p> <p>6 = 3 lamp, slotted top reflector</p> | See Chart on Page 3 | See Chart on Page 3 | P = Parabolic Louver | <p>4 = 4' (121.92cm)</p> <p>8 = 8' (243.84cm)</p> | <p>6 = 120 Vac Master</p> <p>7 = 277 Vac Master</p> <p>8 = 120 Vac Slave</p> <p>9 = 277 Vac Slave</p> | <p>A = Aluminum</p> <p>W = White</p> | <p>4 = 4 through wires</p> <p>5 = 5 through wires</p> <p>6 = 6 through wires</p> <p>D = Dual Switch</p> <p>T = Tandem Switch</p> <p>E = Emergency</p> |

Ordering Instructions

End Cap ECS Systems

- Order Master 4' (121.92cm) or 8' (243.84cm) ECS Module.
- Order Power Feed End Set.

Continuous Row Mounted ECS Systems:

- Determine run length
- Order a minimum of one master per run. Please see Application Guide for master requirements on runs that exceed 16' (487.68cm).
- Order the required remaining Master and Slave modules to complete the run.
- Order Power Feed End Set.
- Order one CABLE ASSEMBLY per MODULE minus one per run.
- Order additional Single Cable & Cord Sets for every Master Module in run.

ECS Sensor Sample Runs



4' Run: 4' (121.92cm) Master Module with Single Sensor End Set.



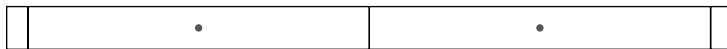
8' Run: 8' (243.84cm) Master Module and standard Energos End Set.



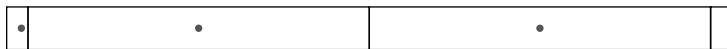
8' Run: 8' (243.84cm) Master Module and Dual Sensor End Set.



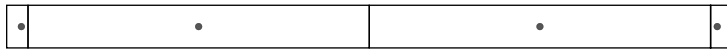
12' Run: 8' (243.84cm) Master Module, 4' (121.92cm) Slave Module, Dual Sensor End Set, and Intermediate Cable Assembly.



16' Run: 8' (243.84cm) Master Module, 8' (243.84cm) Slave Module, standard Energos End Set, and Intermediate Cable Assembly.



16' Run: 8' (243.84cm) Master Module, 8' (243.84cm) Slave Module, Single Sensor End Set, and Intermediate Cable Assembly.



16' Run: 8' (243.84cm) Master Module, 8' (243.84cm) Slave Module, Single Sensor End Set, and Intermediate Cable Assembly.

Notes:

- See page 1 of Specification Sheet or consult Application Guide for the definition of Serial Row Linking (SRL).
- Consult the matching EG specification sheet for Luminaire related specifications (i.e. Housing materials, shielding, mounting dimensions, and photometry).

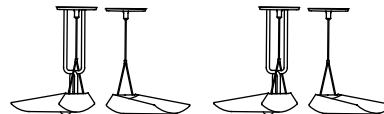
ECS End Sets



Single Sensor End Set EC1SE36W

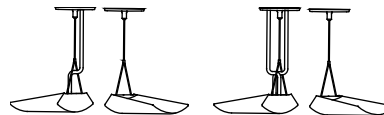
Dual Sensor End Set EC1DE36W

Single Cable & Power Cord EGCC36



Single Sensor SRL End Set EC1SR36W

Dual Sensor SRL End Set EC1DR36W



Standard End Set EG1EC36W

SRL Standard End Set EC1ER36W

Job Information

Type:

Ballast Ordering Information

| Design | Lamp Type | Ballast Factor | Start Type | THD % |
|--------|-----------|----------------|------------|-------|
| D | T8 | 0.71 | Program | <10 |
| E | T8 | 0.88 | Program | <10 |
| H | Dim T8 | 1.00/.05 | Program | <10 |

Lamp Ordering Information

| Design | Lamp Type | Wattage | Rated Output (Lumens) | Color (K) |
|--------|-----------|---------|-----------------------|-----------|
| A | T8 | 28 | 2725 | 3000 |
| B | T8 | 28 | 2725 | 3500 |
| C | T8 | 28 | 2725 | 4100 |
| D | T8 | 30 | 2850 | 3000 |
| E | T8 | 30 | 2850 | 3500 |
| F | T8 | 30 | 2850 | 4100 |
| G | T8 | 32 | 3000 | 3000 |
| H | T8 | 32 | 3000 | 3500 |
| I | T8 | 32 | 3000 | 4100 |
| J | T8 | 32 | 3100 | 3000 |
| K | T8 | 32 | 3100 | 3500 |
| L | T8 | 32 | 3150 | 4100 |

Lamp and Ballast System Data

| Design | Lamp Type (T8 or T5) | Ballast Factor (BF) | Ballast THD (%) | Lamp Rated Wattage | Lamp Rated Output | Lamp Color (Kelvin) | IES Output (lumens) | System Input Watts | System Efficacy (lum/watt) | System Lamp Life (Hours) | Start Type |
|--------|----------------------|---------------------|-----------------|--------------------|-------------------|---------------------|---------------------|--------------------|----------------------------|--------------------------|------------|
| DA | T8 | 0.71 | <10 | 28 | 2725 | 3000 | 2199 | 20.0 | 96.74 | 24000 | Program |
| DB | T8 | 0.71 | <10 | 28 | 2725 | 3500 | 2199 | 20.0 | 96.74 | 24000 | Program |
| DC | T8 | 0.71 | <10 | 28 | 2725 | 4100 | 2199 | 20.0 | 96.74 | 24000 | Program |
| DD | T8 | 0.71 | <10 | 30 | 2850 | 3000 | 2299 | 21.5 | 94.12 | 24000 | Program |
| DE | T8 | 0.71 | <10 | 30 | 2850 | 3500 | 2299 | 21.5 | 94.12 | 24000 | Program |
| DF | T8 | 0.71 | <10 | 30 | 2850 | 4100 | 2299 | 21.5 | 94.12 | 24000 | Program |
| DG | T8 | 0.71 | <10 | 32 | 3000 | 3000 | 2420 | 23.0 | 92.61 | 24000 | Program |
| DH | T8 | 0.71 | <10 | 32 | 3000 | 3500 | 2420 | 23.0 | 92.61 | 24000 | Program |
| DI | T8 | 0.71 | <10 | 32 | 3000 | 4100 | 2420 | 23.0 | 92.61 | 24000 | Program |
| DJ | T8 | 0.71 | <10 | 32 | 3100 | 3000 | 2501 | 23.0 | 95.70 | 30000 | Program |
| DK | T8 | 0.71 | <10 | 32 | 3100 | 3500 | 2501 | 23.0 | 95.70 | 30000 | Program |
| DL | T8 | 0.71 | <10 | 32 | 3150 | 4100 | 2541 | 23.0 | 97.24 | 30000 | Program |
| EA | T8 | 0.88 | <10 | 28 | 2725 | 3000 | 2725 | 25.5 | 94.04 | 24000 | Program |
| EB | T8 | 0.88 | <10 | 28 | 2725 | 3500 | 2725 | 25.5 | 94.04 | 24000 | Program |
| EC | T8 | 0.88 | <10 | 28 | 2725 | 4100 | 2725 | 25.5 | 94.04 | 24000 | Program |
| ED | T8 | 0.88 | <10 | 30 | 2850 | 3000 | 2850 | 27.5 | 91.20 | 24000 | Program |
| EE | T8 | 0.88 | <10 | 30 | 2850 | 3500 | 2850 | 27.5 | 91.20 | 24000 | Program |
| EF | T8 | 0.88 | <10 | 30 | 2850 | 4100 | 2850 | 27.5 | 91.20 | 24000 | Program |
| EG | T8 | 0.88 | <10 | 32 | 3000 | 3000 | 3000 | 29.0 | 91.03 | 24000 | Program |
| EH | T8 | 0.88 | <10 | 32 | 3000 | 3500 | 3000 | 29.0 | 91.03 | 24000 | Program |
| EI | T8 | 0.88 | <10 | 32 | 3000 | 4100 | 3000 | 29.0 | 91.03 | 24000 | Program |
| EJ | T8 | 0.88 | <10 | 32 | 3100 | 3000 | 3100 | 29.0 | 94.07 | 24000 | Program |
| EK | T8 | 0.88 | <10 | 32 | 3100 | 3500 | 3100 | 29.0 | 94.07 | 24000 | Program |
| EL | T8 | 0.88 | <10 | 32 | 3150 | 4100 | 3150 | 29.0 | 95.59 | 24000 | Program |
| HG | T8 DIM | 1.0 / 0.5 | <10 | 32 | 2850 | 3000 | 2850 / 143 | 34 / 8 | 83.80 | NA | Program |
| HH | T8 DIM | 1.0 / 0.5 | <10 | 32 | 2850 | 3500 | 2850 / 143 | 34 / 8 | 83.80 | NA | Program |
| HI | T8 DIM | 1.0 / 0.5 | <10 | 32 | 2850 | 4100 | 2850 / 143 | 34 / 8 | 83.80 | NA | Program |

*25°C Rating

All data is per 1 lamp on a two lamp system at 277 VAC.

Data is based on Osram Sylvania specifications.

When ordering no lamps provided by Lightolier, use lamp code "Z".

The lumen value for the lamp (within a Lighting Design program) will be the IES Output value shown on this table.

The lamp life table demonstrates the effects of shortened cycle-times with both program start and instant start ballasts. The graph shows that instant ballasts are susceptible to shortened lamp life if short cycle periods of less than 3 hours are used. For cycle periods of greater than 3 hours program start ballast are not required.



Lamp Life Table using program start and instant start ballasts.

Job Information **Type:**