



Features

- ENR Dimmer modules are available in 120 volt dual 1.8kW, 2.4kW and single 6.0kW, or 220 volt dual 2.5kW and single 5.0kW capacities.
- The ENR Universal Dimmer Module operates with incandescent, fluorescent, low voltage, neon, cold-cathode and non-dim loads.
- Each module consists of a fully enclosed two piece "engineering grade" plastic chassis.
- All heat generating components shall have separate ambient air intakes to eliminate heat build-up from component to component.
- Safe, non-conductive, cool surface construction
- UL Recognized
- CSA Certified

Dimensional Data – in. [cm] lbs.[kg]

Width	12.0 [30.4]
Depth	4.0 [10.2]
Height	1.3 [3.2]
Weight (w/dimmers)	2.5 [1.1]

Specifications

- Each plug-in module shall consist of a fully enclosed two piece plastic chassis containing one or two circuit breakers, a solid state power device and two filter chokes. The bottom chassis shall be injection molded of high temperature engineering grade composite plastic. The cover shall be injection molded of a high impact plastic and shall include an integral handle. Three independent molded air channels shall provide high velocity ambient air cooling for the power device and filter chokes while preventing airflow over connection points and other components. Dimmers with a single air channel (which develops a thermal gradient from component to component) or dimmers allowing air flow over connection points (which allows the build up of oil and dust on these connections) shall not be acceptable.
- The module shall be electrically and thermally non-conductive with no thermally hot components accessible when the module is removed from the rack. All internal power connections shall be made of stamped and formed bronze or silver-plated copper. All internal signal connections shall be made of stamped and roll-formed gold-plated phosphor bronze. The module shall be completely enclosed with no exposed wires, connections or components and with all external connectors fully recessed. Dimmers with exposed wires, connections, and components of dimmers made of electrically and thermally conductive material shall not be acceptable.

Electrical - Dimming

- Each dimming channel shall be capable of hot patching and cold incandescent loads up to its full rated capacity.
- Each dimming channel shall operate satisfactorily on 50/60 Hz, 100 volts to 130 Volts or 200 Volts to 260 Volts AC lines and in ambient air temperatures from 0-40°C.
- Each dimming channel shall produce essentially a full sine wave when the control signal is full on, and an output of zero volts when the control signal is off.
- The output voltage of each dimming channel shall be automatically regulated for incoming line voltage variations except that output voltage cannot be increased above a level equal to the difference

between incoming line voltage and dimmer voltage drop. Dimmer voltage drop shall not exceed 3 V for 120 V units and 5V for 230 V units. Line regulation shall be +/- 2 volts for 1% to 100% of rated current at any control setting.

- The output voltage of each dimming channel shall follow a modified square-law curve from 0 to 100% control signal and shall be repeatable with +/- 2 volts. The response time of the dimmer shall not exceed 0.1 second. All dimming curve characteristics shall be factory set with no user adjustments required.

Electrical - Module

- Each dimmer module shall contain a solid state power device with two or four SCR's in an anti-parallel configuration which are reflow soldered to nickel-plated copper lead frames which are in turn reflowed to a beryllium oxide ceramic substrate. The ceramic substrate shall be reflow soldered to an integral nickel-plated aluminum heat sink for maximum thermal conductivity and maximum semiconductor reliability. Dimmers using separate semiconductor assemblies (such as solid state relays) attached to a heat sink and requiring heat sink grease and mechanical mounting hardware shall not be acceptable. Surface mounted optical isolators shall be utilized to provide a minimum of 250 volts of electrical isolation between the power semiconductors and the control signal. The active components in the power device shall be encapsulated in a high dielectric potting compound for mechanical protection and electrical isolation. The SCR's shall have the following minimum ratings shown below.
- Each 120V dimmer module shall be a recognized component of Underwriters' Laboratory for incandescent and inductive loads and shall be so labeled.

Environmental

- Each Dimmer Module shall include a toroidal filter choke to limit objectionable harmonics, radiated radio frequencies, electromagnetic interference on the conductors and acoustical noise in the load lamp filament.
- Power efficiency of each dimming channel shall be at least 97% at full load.

Description

Cat. No.

Filler Module	166-360
1.8kW Dual Universal Dimmer Module	166-361
2.4kW Dual Universal Dimmer Module	166-362
6.0kW Single Universal Dimmer Module	166-363
2.5kW, 220/240V Dual Dimmer Module	166-364
5.0kW, 220/240V Single Dimmer Module	166-370

Specifications subject to change without notice

Description		Curcuit Breakers	Single Cycle Surge	Transient Voltage	Max Heat Loss Per Channel		
					Watts	BTU's/hr	Ton of AC
Dual 1.8kW	120V	2 x 15A	650A	600V	36	122	.010
Dual 2.4kW	120V	2 x 20A	650A	600V	54	184	.015
Single 6.0kW	120V	50A	1200A	600V	117	398	.033
Dual 2.5kW	230V	2 x 15A	650A	600V	43	146	.012
Single 5.0kW	230V	25A	1200A	600V	93	316	.026