



CD80 DIMMER MODULES

Dim and Non-Dim, Standard or Reporter Types

DIMMING SYSTEM

Features:

- Dimmer and Non-Dim modules may be Standard or Reporter types
- Capable of "hot patching" cold incandescent loads up to full rated capacity
- Dimmer power efficiency at least 97% at full load
- No-load loss of 3V RMS for standard 2.4kW dimmers
- Modules are keyed so that dimmers of different capacities cannot be interchanged.
- Circuit breakers fully magnetic with 10,000 AIC surge rating
- Circuit breakers rated for 100% switching duty applications
- Circuit breakers are UL and cUL recognized devices
- 2.4kW GFI protected modules available
- SSR optically isolated between AC and control lines to 2.500 V RMS



General

The dimmer modules shall be designed using advanced, state-of-the-art components specifically for entertainment lighting.

Physical

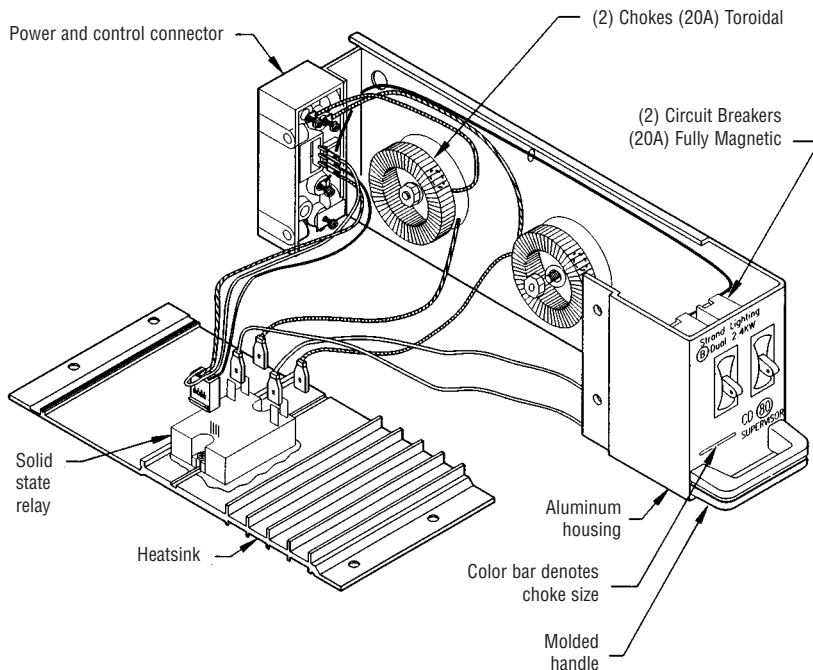
The dimmer modules shall be fully plug in and factory wired. Dimmer modules shall be of rugged and heavy duty construction enclosed by a formed aluminum chassis. Power and signal pins shall be recessed in a self aligning housing to avoid handling, storage, and insertion damage. A contoured handle shall be provided for ease of insertion and withdrawal. All chassis parts, except heat sinks, shall be properly treated, primed and finished in fine texture, scratch resistant, gray powder coat paint. Each module shall be labeled with the manufacturer's name, catalog number and rating. Modules constructed of molded plastic for structural support shall not be acceptable. Dimmer modules shall be UL and cUL recognized devices.

Dimmer modules shall be keyed so that dimmer modules of greater capacity shall not be interchangeable.

Standard factory modules shall be available to provide dedicated non-dim circuits not employing SSR devices. Dual modules shall be available providing non-dim/dimmer, dimmer/non-dim and non-dim/non-dim configurations. Each non-dim shall be provided with a primary circuit breaker of the appropriate rating. Non-dims shall be designed so they can be used for inductive loads.

Standard factory modules shall be available to provide hard fired output for use with neon, cold cathode, and fluorescent loads. Hard Fired modules shall provide a current source independent of the load current for the SCR Gate Drive Signal. Hard fired dimmers shall function independent of load as a result and shall drive loads of 1 watt or less.

Standard factory modules shall be available to provide ground fault circuit interrupting protection for wet applications. GFI modules shall be used in-conjunction with shielded load cables for optimum results.



Weights and dimensions

	width	depth	height	weight/ship.	vol/packed
2.4kW Module	0"	0"	0"	0 lbs	0 lbs
6.0kW Module	0"	0"	0"	0 lbs	0 lbs
12.0kW Module	0"	0"	0"	0 lbs	0 lbs

Electrical

Each dimmer module shall contain one or two single pole circuit breakers, associated solid state switching modules, filters, power and control components.

Dimmer electronics shall be completely solid state. They shall utilize two silicon controlled rectifiers in a back-to-back electrical configuration. The full load of the circuit is to be carried and controlled by the silicon controlled rectifiers.

Each dimmer shall be protected by a fully magnetic circuit breaker of the appropriate current rating and 10,000 AIC surge rating mounted on the face plate of the dimmer module so that the trip current is not affected by ambient or rack temperature. The circuit breaker shall be rated for tungsten loads having an inrush rating of no less than 20 times normal current and shall disconnect the power to the dimmer module before damage can be done to the dimmer power components. The circuit breakers shall be rated for 100 percent switching duty applications and shall be a UL and cUL recognized device.

Filtering

Each dimmer module shall have an integral inductive filter to reduce the rate of current rise time resulting from the SCR switching on. The filter shall limit objectionable harmonics, reduce lamp filament sing and limit the radio frequency interference on line and load conductors.

Type (i) dimmers shall have a rise time of not less than 350 microseconds measured at 90 degrees conduction angle from 10% to 90% of output wave form with dimmer operating at maximum load. Voltage rate of rise (slew rate) must not exceed 420 millivolts per microsecond in any point of the wave under full load conditions.

Type (ii) dimmers shall have a rise time of not less than 500 microseconds measured at 90 degrees conduction angle from 10% to 90% of output wave form with dimmer operating at maximum load. Voltage rate of rise (slew rate) must not exceed 300 millivolts per microsecond in any point of the wave under full load conditions.

Type (iii) dimmers shall have a rise time of not less than 800 microseconds measured at 90 degrees conduction angle from 10% to 90% of output wave form with dimmer operating at maximum load. Voltage rate of rise (slew rate) must not exceed 210 millivolts per microsecond in any point of the wave under full load conditions.

The use of type i, ii, or iii dimmers shall not reduce rack density. 2.4kW and 6.0kW modules are available as types i, ii, or iii. 12.0kW modules are available as type i.

Solid State Relay (SSR)

SSR devices shall be encapsulated, epoxy filled high impact plastic cases with optically isolated firing circuits, control circuitry, and two silicon controlled rectifiers (SCRs). There shall be a minimum of 2,500 volts RMS of isolation between the AC line and the control lines of the SSR.

The SCR shall be in an industry standard format that is easily field replaceable without removing any other electrical or electronic devices.

Performance

The dimmer shall be capable of "hot patching" cold incandescent loads up to its full rated capacity without malfunction with the control signal at full ON.

The dimmer power efficiency shall be at least 97% at full load with a no load loss of 3V for type (1) dimmers.

Ordering Information

120 Volt Standard Dimmer Modules (Suitable for 90V to 120V)

Cat. No.	Power	Firing Type	Rise Time
72314	Dual 2.4kW	FF Dimmer	350 μs
72315	Dual 2.4kW	FF Dimmer	500 μs
72316	Dual 2.4kW	FF Dimmer	800 μs
72318	Dual 2.4kW	HF Dimmer	350 μs

72382	Dual 2.4kW	FF Dim/ Non-Dim	350 μs
72384	Dual 2.4kW	FF Non-Dim/ Dim	350 μs
72386	Dual 2.4kW	FF Non-Dim	

72302

72302	Dual 2.4kW	Dual Constant	
72354	Dual 1.8kW	FF Dimmer	300 μs
72356	Dual 1.8kW	FF Dimmer	450 μs
72324	6.0 kW	FF Dimmer	350 μs
72325	6.0 kW	FF Dimmer	500 μs
72326	6.0 kW	FF Dimmer	800 μs
72332	12.0kW	FF Dimmer	350 μs
72310	2.4kW	FF Dim/GFCI	800 μs

120 Volt Status Reporting Dimmer Modules (Suitable for 90V to 120V)

Cat. No.	Power	Firing Type	Rise Time
72311	Dual 2.4kW	FF Dimmer	350 μs
72312	Dual 2.4kW	FF Dimmer	500 μs
72313	Dual 2.4kW	FF Dimmer	800 μs
72317	Dual 2.4kW	HF Dimmer	350 μs

Cat. No.	Power	Firing Type	Rise Time
72381	Dual 2.4kW	FF Dim/ Non-Dim	350 μs
72383	Dual 2.4kW	FF Non-Dim/ Dim	350 μs
72385	Dual 2.4kW	FF Non-Dim	
72351	Dual 1.8kW	FF Dimmer	300 μs
72353	Dual 1.8kW	FF Dimmer	450 μs
72321	- 6.0kW	FF Dimmer	350 μs
72322	- 6.0kW	FF Dimmer	500 μs
72323	- 6.0kW	FF Dimmer	800 μs
72331	- 12.0kW	FF Dimmer	350 μs
72307	- 2.4kW	FF Dimmer/ GFCI	800 μs

220 Volt Standard Dimmer Modules (Suitable for 220V to 240V)

Cat. No.	Power	Firing Type	Rise Time
72364	Dual 3.3kW	FF Dimmer	190 μs
72366	Dual 3.3kW	FF Dimmer	435 μs
72368	Dual 3.3kW	HF Dimmer	190 μs
72392	Dual 4.4kW	FF Dim/ Non-Dim	190 μs
72394	Dual 4.4kW	Non-Dim/ FF-Dim	190 μs
72396	Dual 4.4kW	Non-Dim	190 μs
72373	Dual 5.5kW	FF Dimmer	
72366	Dual 5.5kW	FF Dimmer	435 μs
72378	11.0kW	FF Dimmer	190 μs

220 Volt Status Reporting Dimmer Modules (Suitable for 220V to 240V)

Cat. No.	Power	Firing Type	Rise Time
72361	Dual 3.3kW	FF Dimmer	190 μs
72363	Dual 3.3kW	FF Dimmer	435 μs
72361	Dual 3.3kW	HF Dimmer	190 μs
72391	Dual 4.4kW	FF Dim/ Non-Dim	190 μs
72393	Dual 4.4kW	Non-Dim/ FF-Dim	190 μs
72395	Dual 4.4kW	Non-Dim	
72371	Dual 5.5kW	FF Dimmer	190 μs
72374	5.5kW	FF Dimmer	435 μs
72377	11.0kW	FF Dimmer	190 μs

Note: 220 modules can be used as high as 240 VAC without modification, however the listed power rating will be increased by a factor of 1.09. A 3.3kW dimmer shall therefore be capable of driving a 3.6kW load. Dimmer risetimes will be reduced by a factor of approximately 0.93 when used at the higher voltage.

Cat. No. Description

72303	Test Module
72301	Single Filler Module
72304	Row Filler Module = (6 Dual Module Spaces)



The Company reserves the right to make any variation in design or construction to the equipment described.
© Strand Lighting Ltd. 1998.

Strand™, Strand Lighting™, Strand Quartzcolor™ are trademarks of Strand Lighting Limited and Strand Lighting Inc.

Strand Lighting Inc

PO Box 9004 18111 South Santa Fe Avenue Rancho Dominguez, CA 90221, USA Tel: +1 310 637 7500 Fax +1 310 632 5519
Second Floor 151 West 25th Street New York, NY 10001, USA Strand Lighting Inc. Tel: +1 212 242 1042 Fax +1 212 242 1837

Strand Lighting (Canada) Inc / Eclairages Strand (Canada) Inc

2430 Lucknow Drive No 15 Mississauga Ontario L5S 1V3 Canada Tel: +1 905 677 7130 Fax: +1 905 677 6859