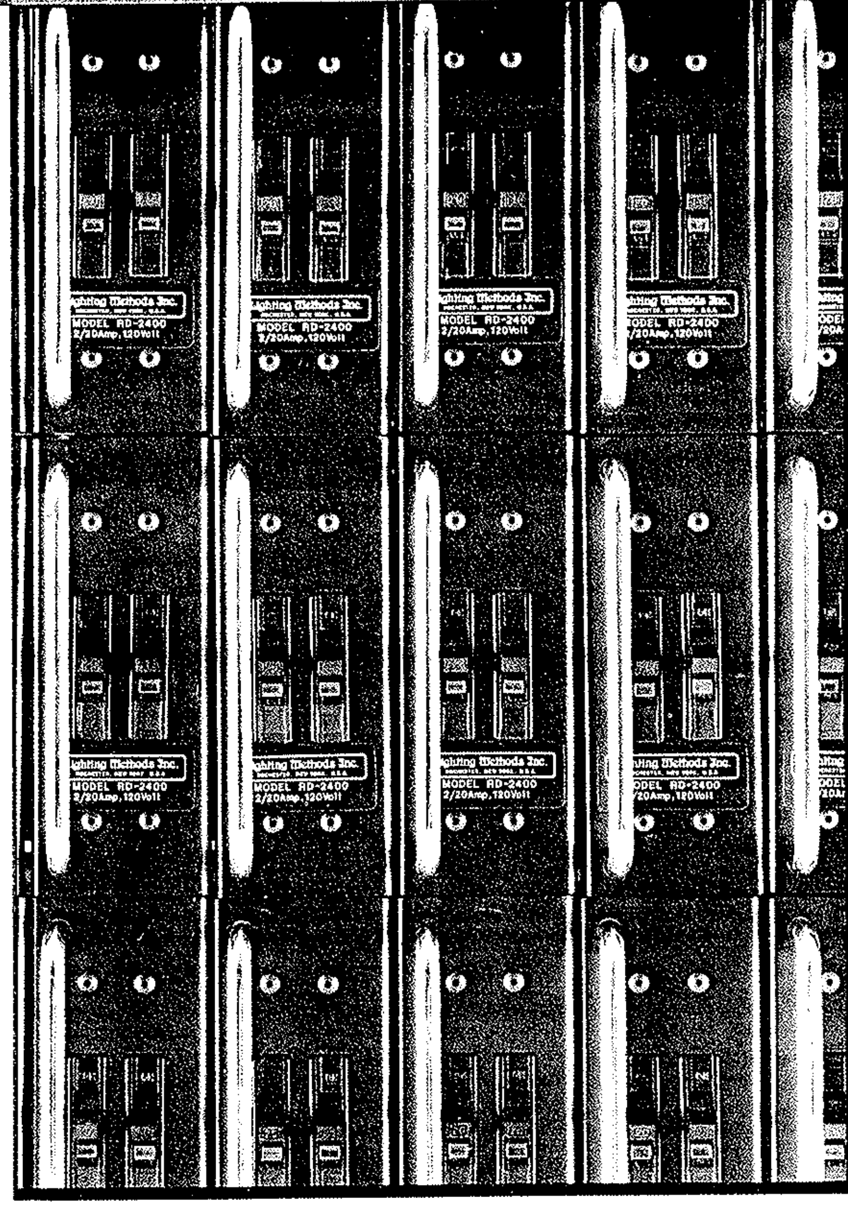
RD Digital Dimming System

RD-1200 (1200W), RD-2400 (2400W) and RD-6600 (6000W) Dimmers

- ☐ *Complete Plug In Modules*
- ☐ *Thermal/Magnetic Circuit Breakers*
- ☐ *Torroidal Choke*
- ☐ *Compact Design*
- ☐ *Heavy Duty SCR's Standard*
- ☐ *Extra Duty SCR's Optional*
- ☐ *Complete Range of Sizes*



This series of RD-Digital Dimming System dimmers is designed specifically for permanent installations in theatres and auditoriums, television studios, civic centers and other venues where reliable lighting control is required.

The complete range of 10A, 20A, and 50A dimmers are plug in modules and can be installed in a RD-9000 series rack in almost any combination.

The dimmers are ideal for use in dimmer per circuit systems or combination racks with patch panels.

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SPECIFICATIONS

GENERAL: The RD-1200, RD-2400 and RD-6600 dimmers are designed using advanced state-of-the-art components for dependable, economical use in all lighting control situations. Dimmer modules plug into a chassis mounted in a RD-9000 series rack.

CHASSIS PHYSICAL: Chassis are designed to accommodate up to 6 dimmer modules. Chassis are constructed of .100 aluminum and .125 fiberglas and are punched for mounting to recessed EIA standard angles in a RD-9000 series rack. All visible parts of the chassis shall be primed and finished with baked black textured enamel. The rear of the chassis shall contain terminals for field wiring of load circuits. All terminals shall be appropriately labeled for convenience of the installing contractor.

MODULE PHYSICAL: Dimmer modules shall consist of faceplate, primary circuit breaker, SCR assembly including heat sink, choke and chassis mating connector. Faceplate shall be .100 aluminum finished with baked black textured enamel. Dimmer name plate shall include manufacturer, model number and dimmer rating. Each module shall have a pull handle for ease of insertion and removal. Dimmer modules shall be 7"H x 2¾"W x 16⅝"D and weigh 7½ lbs. Dimmer modules of the same capacity shall be interchangeable. Connectors and receptacles of modules of different capacities shall be polarized so that modules of different capacity cannot be interchanged.

SCR ASSEMBLY: SCR assemblies (SSR's) shall be electrically isolated, mounted on a substrate and encapsulated in an epoxy filled plastic case. Screw terminals shall be provided for line, load and control wiring. SSR shall contain an optical isolator, steering bridge and snubber network. SSR shall maintain a minimum of 2500 volts isolation between power and control lines. SSR's shall be sized at 25A, for a 10A dimmer, 50A for a 20A dimmer and 80A for a 50A dimmer. I^2t for 25A device shall be 350, for 50A shall be 1700 and for 80A shall be 6000.

FILTERING: Dimmers shall be supplied with an inductive torriodal filter designed to reduce the rate of current risetime resulting from the switching of the SSR. This filter shall limit objectionable harmonics, reduce lamp filament sing and limit radio frequency interference on line and load conductors. The current risetime shall not be less than 500 microseconds measured at 90° conduction angle from 10-90% of the output waveform with the dimmer operating at rated load.

ELECTRICAL: Each dimming circuit shall have a thermal/magnetic 10,000 A.I.C. circuit breaker of rated capacity located on the front of the dimmer module. This circuit breaker shall be a U.L. listed branch circuit protector. Breaker shall serve as a power disconnect device and shall automatically disconnect power to protect the SSR in case of overload.

Dimmers shall accept hot patching of a cold incandescent load up to the full rated capacity of the dimmer.

Dimmers shall operate over the 90-140 volt range of the RD dimmer electronics. Power pins shall be brass and, along with control connections, shall "float" for accurate alignment.

Dimmer shall have no load losses of less than 3 volts RMS for all capacity ratings. Power effeciency at full load shall exceed 95%.

CONTROL: Each dimmer, in conjunction with RD-Digital Dimming System electronics in the rack will maintain dimmer output RMS voltage within ± 1% for up to a 15% variation in line. Dimmer shall maintain output RMS voltage within ± 2% with changes in load from 10 watts to full load at any point in the dimming curve.

Control setting versus output RMS voltage shall follow a "Munsell" or modified square law dimming curve. Dimmer curve shall be adjustable at the rack using 1 trim pot. No other adjustments shall be needed or required.

Response to control shall be less than 100 milliseconds for all loads.

Dimmer electronics shall exhibit no oscillating or hunting for levels. Dimmer output shall repeat exactly regardless of the direction or length of the move of the controller.

For additional control specifications and integral diagnostic routines see the RD-Digital Dimming System electronics data sheets.

In the event of failure of the data link from the control console the dimmers shall maintain the last set of levels for 3 minutes and then fade to black in 1 minute. These times are minimums and can be adjusted to suit installation requirements.