Product Specifications

MDS

DIMMER MODULES

Leviton Lighting Control Division manufactures a wide range of dimmers to control the majority of modern lighting sources available today. These include Neon/Cold Cathode, Fluorescent (using virtually any type or brand of fluorescent dimming ballasts), Low Voltage and Incandescent (including Quartz Halogen). Twenty ampere, 2400 watt dimmers are supplied as two dimmers in one chassis, larger sizes are supplied as one dimmer per chassis.

The dimmers are built on a rugged extruded aluminum chassis with a finned surface for convection cooling. Power and control connection are plug-in for ease of maintenance. The dimming function is performed by Leviton Lighting Control Division's exclusive solid state circuitry using high inrush silicon controlled rectifiers (SCR) in a back to back configuration for handling high power. Dimmer output is highly filtered, with high rise times. Each dimmer type is available in a full range of capacities from 1440 watts to 12,000 watts at 120 volts, and up to 27,700 watts at 277 volts. Primary circuit breakers and branch circuit breakers are provided as required. Canadian 347 volt dimmers are available.

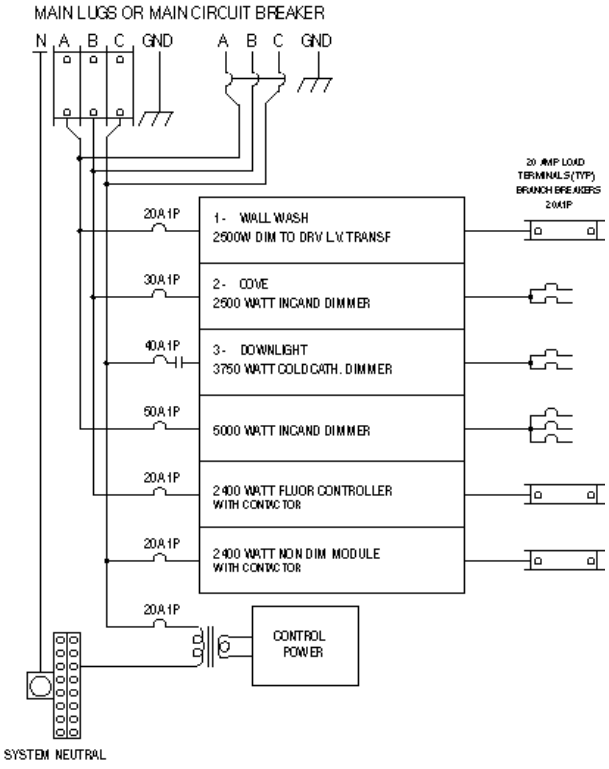


DIMMER CABINETS

The key to Leviton Lighting Control Division's Modular Dimming System (MDS) flexibility is the variety of dimming cabinets available. They go together like building blocks to make the exact size cabinet needed for any job requirements. Further, they are easily barriered into sections to accommodate multi-voltage feeds (example 120V and 277V) including emergency feeds all into the same cabinet. Dimmers are available for virtually all brands and varieties of fluorescent dimmer ballasts, as well as incandescent dimmers, and non dims. The cabinets easily accommodate main circuit breakers as well as main lugs. The cabinet can contain bypass contactors for emergency circuits, or where required, can contain UL 1008 emergency transfer contactors, all in a single cabinet structure.

Both wall mount and floor standing cabinets are available depending on the quantity of dimmers required. Typical dimmer per circuit designs require only 20 ampere dimmers. However, for special requirements such as driving 5,000 watt and 10,000 watt fresnels, larger dimmers offering up to 12,000 watts of load capacity are available. Dimmers are all convection cooled, eliminating fan noise. They are ideal for applications where fan noise would be unacceptacle.

Typical Internal Wiring Schematic



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Product Specifications

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Dimmer Cabinet Size

The following method is a simple way to estimate the size of the dimmer cabinet. All dimmer cabinets are custom fabricated in the Leviton plant. If a special size or shape dimmer cabinet is required, contact your factory representative or Leviton for assistance. As change can occur during engineering and fabrication, Leviton Lighting Control Division reserves the right to change the cabinet size when necessary to meet the job requirements.

CALCULATING CABINET SIZE

1. Find the total number of 4" module units using Table 1. Note: Dual dimmer modules contain 2 dimmers in one 4-inch dimmer unit space.
2. Locate the total height on the chart below. All cabinet dimensions are based on 4 inch units.
3. Follow it across and down to the cabinet drawing.
4. Read the cabinet width and the bottom of the cabinet drawing, and the height at the side.

TABLE 1

120 VOLT DIMMERS	Height	Dimmer Unit Spaces Required
1920 watt dual dimmer	= 4 inches	one 4 inch unit
2500 watt dual dimmer	= 4 inches	one 4 inch unit
3750 watt single dimmer	= 4 inches	one 4 inch unit
5000 watt single dimmer	= 4 inches	one 4 inch unit
7200 watt single dimmer	= 12 inches	three 4 inch units
9600 watt single dimmer	= 12 inches	three 4 inch units
12000 watt single dimmer	= 12 inches	three 4 inch units

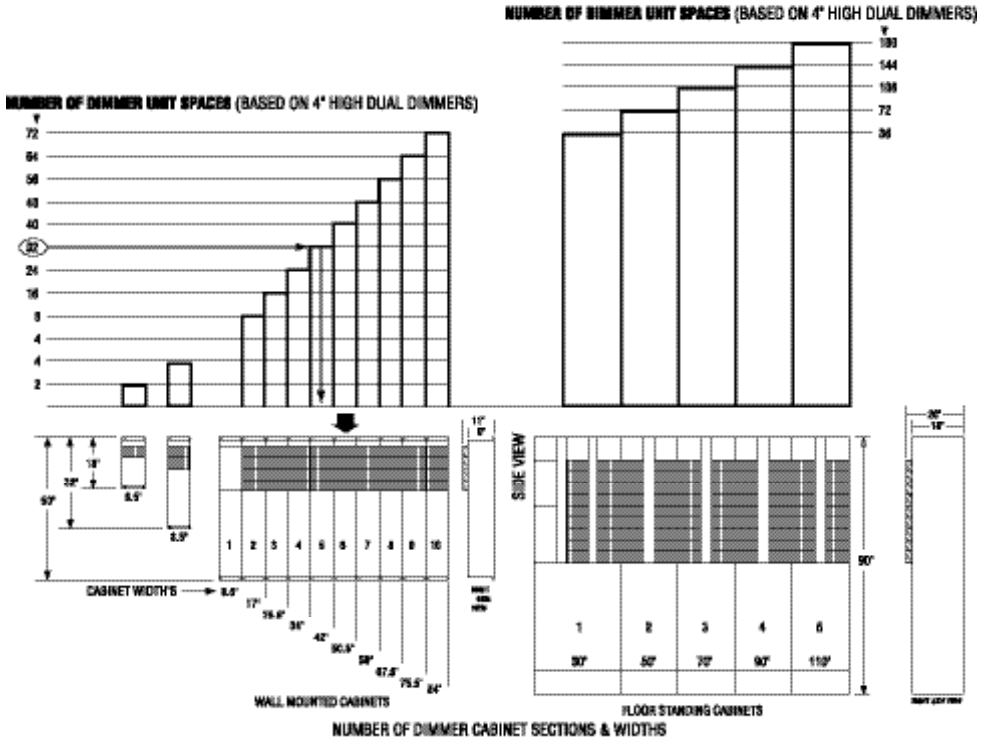
For complementary assistance in determining dimming cabinet dimensions, please call the Leviton quotations group at 1-800-996-2 276.

POWER FAILURE TRANSFER

If UL 1008 Transfer Contactors are required, considerable space is required as the contactors are physically large. For 2 pole through to 8 pole (up to 4 circuits) allow two 50 inch cabinet sections, a total of 16.75 inches of width; for additional poles contact the factory. These contactors are barriered off from the normal dimmer section of the cabinet.

EMERGENCY BYPASS

For an emergency section using dimmers with by-pass relays, consider cabinet space as a dimmer module plus a non-dim module. Emergency sections require a barriered section for power separation, so at least one more cabinet section is always needed.



NUMBER OF DIMMER CABINET SECTIONS & WIDTHS

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Dimmer Cabinet Specifications

The dimmer cabinet assembly shall contain all the dimmer modules, control circuitry, relays, contactors, power supplies, primary and secondary circuit breakers, main lugs or main circuit breakers, and barriered sections for emergency lighting circuits or different feed voltages. Main Lugs (or Main Breakers) and neutral bus shall be provided for 120/208, 120/240 (single phase), 230/400, 277/480, 347/600 voltage ratings, at 50 or 60 Hertz. Projects requiring 50 hertz operation shall be called out at time of order placement.

The dimmer cabinets shall be constructed of 14 U.S. gauge steel, welded, and coated in medium textured medium blue color powder coating. Cabinets shall be dead front, dead rear, and wall mounted or floor standing. All components shall be so arranged that they are serviceable from the front.

Internal power wiring shall be U.L. Listed 125º C. rated and shall be neatly placed and bundled. Control and power wiring shall be separate. Contractor field wiring shall terminate in compression type terminal or branch circuit breakers. For ease of service, dimmers, power supplies and other electronic components shall be plug-in. The completed dimmer cabinet assembly shall be listed by Underwriters Laboratories (U.L.) as a switchboard, and shall be so labeled when shipped to the job site.

Dimmer modules shall be fully plug-in type. They shall contain a filter choke having a minimum rise time of 500 microseconds. Dimmer modules shall employ Silicon Controlled Rectifiers (SCR) type Thyristor devices. Triac based dimming circuits shall not be acceptable. Dimmer modules shall provide voltage regulation circuitry to minimize light fluctuation in controlled spaces.Dimmer cabinets shall be cooled by natural convection air flow, and shall not require cooling fans. Dimmers shall operate in 0º to 40º C (32º to 104º F) ambient air temperature. Heat generated by the dimmer cabinet is not determined by the combined dimmer ratings, but is determined by the connected load to the dimmer cabinet. The heat generated by the dimmer cabinet shall not exceed 3% of the connected load in watts.

Dimmer cabinet shall contain necessary communication electronics to communicate with the control systems that become part of this system. The control systems and dimmer cabinet shall retain in memory the settings that were in operation at the time of any power outage, and shall return the system automatically to that light setting upon return of normal power to the system.

If an emergency system is part of this system, that emergency system shall continually monitor "normal" power and at the loss of any one or more normal supply power phases, it shall turn on all lighting circuits connected to the emergency power source. The emergency power is supplied by others, this system only provides a path to the emergency circuits. Upon sensing the return of normal power, this system shall automatically reset all lighting to the conditions at the start of the power outage.

The dimmer cabinet and associated remote control systems shall be stored in their original cartons or crates in a dry location free from dirt and dust until they are installed. Dimmers shall not be used to furnish any temporary light or power for construction activities. Dimmer cabinets and controls shall be protected from job site dust and dirt such as drywall sanding dust until ready to be energized.

Several types of Electronic Control Systems shall be available for the dimmer cabinet, depending upon the control system chosen.

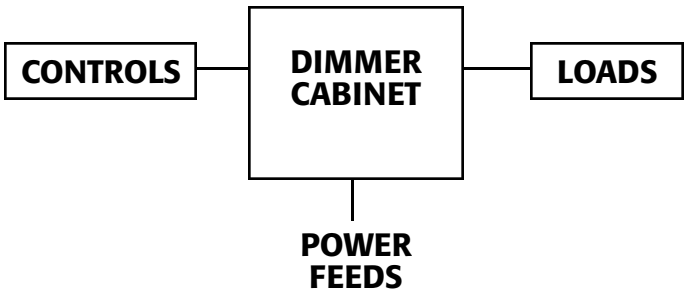
Systems employing D8000 or D4200 controls shall be fitted with a control system containing a Liquid Crystal Display (LCD) and software that allows choosing between dimmer types, dimmer response curves, and allows dimmer to control channel assignment.

Using the prompting from the LCD panel a variety of fluorescent dimmer ballast types shall be selectable and controlled by standard dimmer modules. These shall include ballasts employing zero to plus 10 volt DC control signals, dimmer ballasts like the Advance Mark X requiring only two wires for both power and control, and Hi-lume™ dimmer ballasts. Selecting ballast types shall automatically set required low light limits and other dimmer ballast requirements.

The digital electronics assembly shall be fully plug in, facilitating field change out. Digital communications shall be built in to talk via DMX 512, LumaNet® III, RS485, and RS232. System shall contain an all on and emergency full on external input. Using the digital control module, each dimmer shall be capable of controlling incandescent, fluorescent, step down transformers for low voltage lamps, plus neon and cold cathode loads.

Systems employing DMS controls shall be fitted with a digital control module and backup control system as well.

Systems employing the DPS controls shall have a choice of two different control systems available for the dimmer cabinet. They shall be designed to handle any number of controls and dimmers, but shall be applied as multiple circuits, each controlling groups of up to 24 dimmers.



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