Control Solutions for Creative Professionals

DIMMERS
The high density, plug-in dimmer cabinet is a blend of innovative design and elegance, with a front door and safety key lock for easy insertion and removal of the dimmer drawers. A combination of different dimmer drawers can be mixed in one cabinet. Features include: External LED indication of power, 3 phase cooling system (top mounted fans), front and easy access for all power and data connections, ingoing and outgoing cables from the top or bottom of the cabinet. Available in configurations of 6, 12, 18 or 24 slots, with single or dual control module.

The power input is distributed inside the cabinet through 5 specially designed copper-plated bus-bars, allowing the ultimate power distribution in permanent installations and mobile racks. Each dimmer drawer is powered from a different phase. CompuDim 2000 cabinets are available for STAR, STAR with NEUTRAL disconnection per dimmer and DELTA (2 pole) power systems.

Power switches, contactors etc., can be added in the cabinet level. Cabinets can be installed against the wall and attached to each other.

The fans control correct operating temperature for all rack components, when operating under the full dimmer load. In case of over temperature failure, the rack can be programmed to shut down the affected dimmer drawers only.

CompuDim 2000 cabinets have a local Master Panic Switch, that sets all dimmers to a predetermined level. The panic switch may be controlled locally, remotely, or via Dimmer Monitor software.

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MobileDim
A mobile version of CompuDim 2000 is available in 6 or 12 slot configuration. To suit your needs we offer customized back panels for input / output connectors and optional hard patch on top.

Electrical Specs
- 3 phase 240/480 VAC/50Hz, Neutral, Ground
- Automatic frequency and line voltage compensation
- Total current measurement per phase
- Optional 2 pole circuit breaker (Delta) protection per dimmer
- Optional Live + Neutral disconnecting (DPN) protection per dimmer
- Optional RCD protection per drawer or per dimmer
- Optional mains breaker (4P) + RCD per 3 drawers

Technical specs
<table>
<thead>
<tr>
<th>Cabinet # of slots</th>
<th>Weight</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>134.5 Kg (296.5 lb.)</td>
<td>54 cm (21.2&quot;)</td>
<td>59.5 cm (23.4&quot;)</td>
<td>1,950 mm (76.8&quot;)</td>
</tr>
<tr>
<td>18</td>
<td>115 Kg (253.5 lb.)</td>
<td>54 cm (21.2&quot;)</td>
<td>59.5 cm (23.4&quot;)</td>
<td>1,550 mm (61&quot;)</td>
</tr>
<tr>
<td>12</td>
<td>87 Kg (191.8 lb.)</td>
<td>54 cm (21.2&quot;)</td>
<td>59.5 cm (23.4&quot;)</td>
<td>1,150 mm (45.3&quot;)</td>
</tr>
<tr>
<td>6</td>
<td>45 Kg (191.8 lb.)</td>
<td>54 cm (21.2&quot;)</td>
<td>59.5 cm (23.4&quot;)</td>
<td>600 mm (23&quot;)</td>
</tr>
</tbody>
</table>
Rack Control Module (RCM)
The RCM is a fully embedded PC. The cabinet is controlled by a RCM supporting full Ethernet networking, dual DMX512 input and internal soft-patch. In addition to the 3 phase, Ethernet and DMX-512 LED indicators, the RCM has a graphic LCD display showing various status screens or alarm displays in case of an error.

Full keyboard for programming and status monitoring, 3 phase voltage, current and frequency, temperature, circuit breakers status, DMX addresses, drawer’s power capacity and more.

The RCM is based on advanced, 32-bit Digital Signal Processor (DSP) technology. Detecting zero-crossing in presence of noise, regulated output specially for operating in unstable power input conditions, automatic frequency and line voltage compensation. Communication between the RCM and dimmer drawers is via reliable CAN-BUS interface. The RCM can store up to 99 backup files and be triggered from the Dimmer Monitor software without the necessity of lighting console or DMX-512 source. Dual RCM units work in full harmony and back-up each other in zero time.

- Data Control: HTP or Merge; 2 DMX-512 inputs + Ethernet
- Patch Menu: Wizard or Standard
- Parameters Menu: Curves, Preheat, Maximum current load, Speed, Over temperature shutdown for each drawer
- Test Menu: set intensity, fade or flash
- Configuration Menu: IP Address, Custom Curve, LCD control, Test Rate, Communication Break behavior
- Password: set password to prevent unauthorized access to the RCM menus
- Diagnostic: display, keys and fans
- Software Upgrade: via PC serial RS-232 or Ethernet

Drawers
The drawers include high quality chokes to reduce RF and audible noise; with standard Rise-Time of 300μsec for 2.5kW/3kW and 400μsec for 5kW. High quality circuit breakers are designed to handle the inrush current, LED status indication per dimmer, plus COM and Temperature. Each dimmer drawer has an on-board DSP controller communicating with the RCM via CAN-Bus interface, powering the dimmers and reporting back the following info:
- Load current for each dimmer
- Drawer temperature
- Open Load
- Circuit breaker status

<table>
<thead>
<tr>
<th>Drawer type</th>
<th>Weight (kg)</th>
<th>Width (cm)</th>
<th>Depth (cm)</th>
<th>Height (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x 2.5 kW</td>
<td>6 Kg (13.2 lb)</td>
<td>32.5 cm (12.8&quot;)</td>
<td>41.5 cm (16.3&quot;)</td>
<td>60 mm (2.3&quot;)</td>
</tr>
<tr>
<td>4 x 3 kW</td>
<td>7 Kg (13.2 lb)</td>
<td>32.5 cm (12.8&quot;)</td>
<td>41.5 cm (16.3&quot;)</td>
<td>60 mm (2.3&quot;)</td>
</tr>
<tr>
<td>4 x 16A relay</td>
<td>3.5 Kg (7.7 lb)</td>
<td>32.5 cm (12.8&quot;)</td>
<td>41.5 cm (16.3&quot;)</td>
<td>60 mm (2.3&quot;)</td>
</tr>
<tr>
<td>2 x 5 kW</td>
<td>7 Kg (15.4 lb)</td>
<td>32.5 cm (12.8&quot;)</td>
<td>41.5 cm (16.3&quot;)</td>
<td>60 mm (2.3&quot;)</td>
</tr>
<tr>
<td>2 x 25A relay</td>
<td>2.5 Kg (5.5 lb)</td>
<td>32.5 cm (12.8&quot;)</td>
<td>41.5 cm (16.3&quot;)</td>
<td>60 mm (2.3&quot;)</td>
</tr>
<tr>
<td>1 x 10 kW</td>
<td>6.85 Kg (15.1 lb)</td>
<td>32.5 cm (12.8&quot;)</td>
<td>41.5 cm (16.3&quot;)</td>
<td>60 mm (2.3&quot;)</td>
</tr>
<tr>
<td>Blank</td>
<td>1 Kg (2 lb)</td>
<td>32.5 cm (12.8&quot;)</td>
<td>41.5 cm (16.3&quot;)</td>
<td>60 mm (2.3&quot;)</td>
</tr>
<tr>
<td>RCM</td>
<td>3.1 Kg (6.8 lb)</td>
<td>34 cm (13.4&quot;)</td>
<td>33 cm (13&quot;)</td>
<td>90 mm (3.5&quot;)</td>
</tr>
</tbody>
</table>

*Optional RCD per drawer/dimmer; DP & DPN (Live + Neutral).
Sine dimmers offer phase control dimming methods based on high frequency chopping. CompuSine is a pure voltage transformer which has a controllable ratio between the input and output voltage. Both input and output are pure sine wave at any load and at any dimming level, thereby eliminating the problems of conventional dimmer technology, such as: overheated transformers; tripping circuit breakers; vibrating panels and lamp noise.

CompuSine engineers in co-operation with the Department of Electrical Engineering at “Ben-Gurion” University have developed CompuSine, a controllable electronic transformer.

**Principle of operation**

The Sine dimmer has 2 stages of circuitry; input stage and output stage. In the input stage the line voltage is converted to the high frequency pulse width modulated (PWM) waveform. Input filter keeps high frequency harmonics inside the dimmer; nothing penetrates the input line, which means that sine dimmer introduces no noise to input line.

The pulse width is proportional to the amplitude of the output voltage, equivalent to the phase shift angle of conventional dimmer.

The high frequency of the modulated waveform reduces the size of the passive filter components and ensures that any acoustic noise produced within the dimmer is above audible range. The output stage is a passive filter which acts as a demodulator; removing the high frequency elements. The reconstructed output voltage is a pure sine wave with less than 1% harmonic distortion reflected into the line voltage.

- Plug-in Models: 4 x 2.5 kW, 4 x 3 kW, 2 x 5 kW
- Fully interchangeable with standard CompuDim drawers
- Full status report
- CompuSine is available in a single pole, double pole and RCD configurations

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**Electrical Specs**

<table>
<thead>
<tr>
<th>Input</th>
<th>100-250 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>Sine waveform</td>
</tr>
<tr>
<td>Line Frequency</td>
<td>50 Hz</td>
</tr>
<tr>
<td>Max. Current</td>
<td>13A, 16A, 25A</td>
</tr>
<tr>
<td>Min. Current</td>
<td>None</td>
</tr>
<tr>
<td>In-rush Current</td>
<td>None</td>
</tr>
<tr>
<td>Dimming Control</td>
<td>CAN Bus at any dimming level</td>
</tr>
<tr>
<td>Dimmer Response</td>
<td>2-3 msec.</td>
</tr>
<tr>
<td>Max. Ambient temp</td>
<td>40°C</td>
</tr>
<tr>
<td>Efficiency</td>
<td>At least 97%</td>
</tr>
<tr>
<td>Power Factor</td>
<td>1</td>
</tr>
<tr>
<td>Harmonic Distortion</td>
<td>Less than 1% reflected into input line voltage</td>
</tr>
<tr>
<td>Protection</td>
<td>Overload, Short circuit (electronic shutdown + circuit breaker + internal components protection), High temperature, High/low line voltage</td>
</tr>
<tr>
<td>Indicators LED Display</td>
<td>Communication status, Input level, Overload, Short circuit, No load, High temperature limit</td>
</tr>
<tr>
<td>PWM Dimmer Resolution</td>
<td>1200 steps (i.e. FCR dimmers resolution is 256 steps)</td>
</tr>
</tbody>
</table>

* Specifications are subject to change without prior notice
A Windows based, PC software program for remote monitoring; configuration setting, online status feedback, errors handling, remote testing of every rack/slot or dimmer, creating and controlling backup looks.

- Patching and properties configuration for every rack, slot and dimmer in the Compulite Ethernet Network, including standard and advanced RSD bulk patching; set data merging between dimmer inputs (HTP or MERGE);
- Configuration and patching of VCs (virtual connectors);
- Allows mapping of the entire network, to enable easy orientation and patching on the console level
- Online monitoring providing comprehensive error and status reports, including: slot overheating; short circuit; dimmer's circuit breaker status; communication break; dimmer open load; over current and fan status
- Generating online selection of cross-reference reports including: entire network patch and configuration report; rack status report including total current and voltage per phase
- Capturing, editing, storing and playing back of lighting looks to each/all Rack Control Module
- Perform manual and automatic tests

Stand alone PDA Ethernet wireless remote, communicating with the whole DimNet family. Allowing direct access to dimmers, without the necessity of a lighting console. The bi-directional communication shows online data from the racks and can be updated when needed.

- Adjust Dimmer value settings
- Run tests on groups of dimmers
- Receive status reports
- Editing / playback of backup looks
CompuPack offers a reliable and affordable 19" Rack Mount digital dimming solution. Based on advanced, 32-bit Digital Signal Processor (DSP) technology, CompuPack provides the highest quality of dimming available for any type of application whether fixed or mobile. A built in graphic LCD display is included for easy access and monitoring of all controls and settings. CompuPack provides a wide range of features suited to any budget.

**Main Features**

- **Configuration**
  - + 12 x 2.3 kW, 3 kW
  - + 6 x 5 kW

- **Hardware (DSP)**
  - + Detect zero-crossing in presence of noise
  - + Regulated output specially designed for operating under unstable power input conditions
  - + Automatic frequency and line voltage compensation

- **User Interface**
  - + Graphic (128 x 64) LCD display for monitoring status
  - + 7 Input buttons
  - + 12 Tri-Color status LEDs
  - + 3 Phase (Line) indications

- **Control Input**
  - + 1 or 2 DMX-512
  - + Ethernet

- **Status Feedback**
  - + Temperature
  - + No Load
  - + Short Circuit
  - + Dimmer level

- **Software**
  - + Patch - DMX input offset settings for each individual dimmer
  - + Test Menu
  - + 50 programmable scenes triggered via RS232, DMX-512 or Ethernet
  - + Built in sequencer for stand alone operation
  - + 6 pre-programmed dimmer curves
  - + 4 programmable dimmer curves
  - + Individual Curve for each Dimmer
  - + Diagnostic

- **Circuit Breakers (MCB)**
  - + One MCB protection per dimmer
  - + Mains MCB protection per pack (option)

- **Chokes**
  - + Minimum 150, up to 300 μs rise time

- **Software Upgrade**
  - + Through RS232 / Ethernet (C-Net manager)

- **Dimensions**
  - + 19" x 3U (482 mm x 133.2 mm)

- **Outlets Options**
  - + Terminals
  - + Socapex
  - + Harting
  - + Ceeform
The new look of the CompuRack 12/24 permanent installation dimmer rack is based on the same hardware as the CompuPack. Designed to provide a cost effective, non plug-in solution for venues and architectural installations. Its low profile depth and highly designed look, makes it perfect for wall mount installations. Equipped with a convection cooling system assures quiet operation. Possessing CompuDim 2000 / CompuPack capabilities, the CompuRack completes the dimming network.

### Main Features

#### Configuration

| 12 x 2.3 kW / 12 x 3 kW / 6 X 5 kW (CompuRack 12) |
| 24 x 2.5 kW / 24 x 3 kW / 12 x 5 kW (CompuRack 24) |
| Dual SCR or Trac |
| 3 Phase or Single Phase operation |

#### Hardware (DSP)

- Detect zero crossing in presence of noise
- Regulated output specially designed for operating under unstable power input conditions
- Automatic frequency and line voltage compensation

#### User Interface

- Graphic (128 x 64) LCD display for monitoring status
- 7 Input buttons
- 12 / 24 Tri-color status LEDs
- 3 Phase (Line) indications

#### Control Input

- 1 or 2 DMX-512
- Ethernet
- Remote panels

#### Status Feedback

- Temperature
- No Load
- Short Circuit
- Dimmer level

#### Software

- Patch - DMX input offset settings for each individual dimmer
- Test Menu
- 50 programmable scenes triggered via RS232, DMX-512 or Ethernet
- Built in sequencer for stand alone operation
- 6 pre-programmed dimmer curves
- 4 programmable dimmer curves
- Individual Curve for each Dimmer
- Diagnostic

#### Circuit Breakers (MCB)

- One MCB protection per dimmer
- Mains MCB protection per Rack (optional)
- Mains RCD protection per Rack (optional)
- RCD protection per 4 or 1 dimmers (optional)
- Line + Neutral (DPN) protection per dimmer (optional)
- Double Pole protection (DELTA) per dimmer (optional)

#### Chokes

- Minimum 150, up to 300 μs rise time

#### Software Upgrade

- Through RS232 / Ethernet (C-NET Manager)

#### Dimensions

- 890 mm (H) x 352 mm (W) x 165 mm (D) - CompuRack 12
- 890 mm (H) x 650 mm (W) x 165 mm (D) - CompuRack 24

#### Outlets Options

- Terminals (standard)
- Customized