**Tunable White LED Driver**

**Dual Channel With Selectable Constant Current**

HER3045 + SAM10 or SAM10/FM with HRC-08

**Typical Applications**

The simple interfaces allows cost effective implementation of tunable white LED applications outside of central control systems. Using either the remote handset or the common 1-10V and Switch-DIM wall switches, high-end functionality is achieved with realistic budgets on smaller projects.

Suitable for LED panels and downlights - insulated terminal cover with cord restraint:
- Office / Commercial Lighting
- Hotels
- Classrooms
- Retail and Display
- Home office / Domestic lighting

Use for retrofit upgrades & new luminaire designs.

**Features**

- Tunable White
- Configurable Constant Current (CC) Output via Dip-Switch
- Active PFC
- <0.5W
- 1-10V
- Switch-Dim & Synchronization
- Thermal Cut-out Protection
- Short Circuit Protection
- Over-load Protection
- Permanent Settings Memory, Protected against Loss of Power
- 5 Year, 50,000hr Warranty

**Output Configuration**

- 1200mA
- 1050mA
- 900mA
- 700mA
- 500mA
- 350mA

**Wire Preparation**

Warning: Please make sure the correct current is selected before starting the driver!

- Solid or Stranded wire type 0.75 - 1.5mm².

**De-centralised Operation:**

HER3045: 2-Channel 45W maximum fully featured LED driver. Operation from wall switches via the 1-10V and Switch-Dim inputs

SAM10 or SAM10/FM: Add remote control functionality using one of the plug in receivers

**Over-load Protection**

- De-centralised Operation:

**Switch-Dim & Synchronization**

Suitable for LED panels and downlights - insulated terminal cover with cord restraint:

**Output Configuration**

<table>
<thead>
<tr>
<th>Current</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200mA</td>
<td></td>
</tr>
<tr>
<td>1050mA</td>
<td></td>
</tr>
<tr>
<td>900mA</td>
<td></td>
</tr>
<tr>
<td>700mA</td>
<td></td>
</tr>
<tr>
<td>500mA</td>
<td></td>
</tr>
<tr>
<td>350mA</td>
<td></td>
</tr>
</tbody>
</table>

- Suitable for LED panels and downlights - insulated terminal cover with cord restraint:
- Office / Commercial Lighting
- Hotels
- Classrooms
- Retail and Display
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Use for retrofit upgrades & new luminaire designs.

**Wire Preparation**

Solid or Stranded wire type 0.75 - 1.5mm².

To make or release the wire from the terminal, use a screwdriver to push down the button.
### Technical Data

<table>
<thead>
<tr>
<th>Input</th>
<th>Mains Voltage</th>
<th>220–240VAC 50/60Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mains Current</td>
<td>0.22–0.2A</td>
</tr>
<tr>
<td></td>
<td>Power Factor</td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>Max. Efficiency</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>Dielectric Strength</td>
<td>Input→Output : 3000VAC</td>
</tr>
<tr>
<td></td>
<td>Leakage Current</td>
<td>&lt; 0.25mA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Output power handling</td>
<td>Channel 1 (CH1) + Channel 2 (CH2) = 45W max.</td>
</tr>
<tr>
<td></td>
<td>Ripple Current</td>
<td>&lt;3%</td>
</tr>
<tr>
<td></td>
<td>Uout Max.</td>
<td>75V</td>
</tr>
<tr>
<td></td>
<td>Turn-on Time</td>
<td>&lt; 0.5s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environment</th>
<th>Operation Temp.</th>
<th>Ta: -20–+45°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Case Temp. (Max.)</td>
<td>85°C</td>
</tr>
<tr>
<td></td>
<td>IP Rating</td>
<td>IP20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety and EMC</th>
<th>EMC Standard</th>
<th>EN55015, EN61547, EN61000-3-2, EN61000-3-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Standard</td>
<td>EN61347-1, EN62493, EN61347-2-13</td>
<td></td>
</tr>
<tr>
<td>Certifications</td>
<td>Semko, CB, RCM, CE, EMC</td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions and Terminals

#### Main body

- Switch Dim: N, I
- Buzzer
- Remote connection
- Dim/Tunable selection
- 1-10V
- CH2
- CH1
- LED current selection
- Additional cap for stand alone installation

#### Remote Control Receiver

- Model SAM10
- IR receiver
- Cable side entry
- Cable back entry

- Model SAM10/FM

**Dimensions**

- 185 x 185 mm
- 129.4 x 141.6 mm
- 30.4 mm
- 20.4 mm
- 4.1 mm
- 4.1 mm
- 38.9 mm
- 31.1 mm
- 20.3 mm
Loading and In-rush Current

| Inrush Current (I_{\text{max}}) | 7.2A |
| Pulse Time | 100 μs |

Number of Drivers Based upon 16A Circuit Breaker

| Type B | 30 |

Conversion table for max. quantities of drivers on other types of Miniature Circuit Breaker

<table>
<thead>
<tr>
<th>MCB Type</th>
<th>Rating</th>
<th>Relative number of drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>16A</td>
<td>100% (see table above)</td>
</tr>
<tr>
<td>B</td>
<td>10A</td>
<td>63%</td>
</tr>
<tr>
<td>B</td>
<td>13A</td>
<td>81%</td>
</tr>
<tr>
<td>B</td>
<td>20A</td>
<td>125%</td>
</tr>
<tr>
<td>B</td>
<td>25A</td>
<td>156%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MCB Type</th>
<th>Rating</th>
<th>Relative number of drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>10A</td>
<td>104%</td>
</tr>
<tr>
<td>C</td>
<td>13A</td>
<td>135%</td>
</tr>
<tr>
<td>C</td>
<td>16A</td>
<td>170%</td>
</tr>
<tr>
<td>C</td>
<td>20A</td>
<td>208%</td>
</tr>
<tr>
<td>C</td>
<td>25A</td>
<td>260%</td>
</tr>
</tbody>
</table>

* Environmental factors (such as temperature) will also influence the maximum number of the drivers. Please refer to the MCB manufactures datasheet for loading and derating factors.

Light brightness and CCT adjust

The driver HER3045 has 2 independent output channels to tune the white colour and adjust light brightness. The colour temperature and light brightness are controlled either with the remote control (HRC-08) or manually via momentary push-switch and 1-10V output.

Remote control and push-switch wiring diagram:

Light brightness and CCT adjust by push-switch

* Brightness adjust:
  Light intensity can be finely adjusted by long pressing on the push-switch.

* CCT adjust:
  The colour temperature starts tuning after pressing the push-switch three times within 2 seconds. Set the desired colour with a short press of the push-switch.
Remote control and 1-10V wiring diagram:

Light brightness and CCT adjust by 1-10V dimmer

* Brightness adjust:
  Light intensity can be finely adjusted by rotating the 1-10V dimmer.

* CCT adjust:
  The colour temperature starts tuning after cycling off/on the 1-10V dimmer 3 times within 3 seconds. Set the desired colour by a further off/on cycle.

Performance Characteristics

![Graph showing efficiency vs load](image1)

* Typical Efficiency vs Load

![Graph showing power factor vs load](image2)

* Typical Power Factor vs Load

Dimming Characteristics

Switch-Dim Dimming Curve

![Graph showing switch-dim dimming curve](image3)

1-10V Dimming Curve

![Graph showing 1-10V dimming curve](image4)
Dual Output Control

Connection to the LED PCB is made for CH1 and CH2 output connections

CH1 = Cool white LED array
CH2 = Warm white LED array

Each channel can supply up to 45W and white balance can be controlled as such:

<table>
<thead>
<tr>
<th>Colour Temperature</th>
<th>Cool White</th>
<th>Neutral White</th>
<th>Warm White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Distribution</td>
<td>CH1=45W, CH2=0W</td>
<td>CH1=22.5W, CH2=22.5W</td>
<td>CH1=0W, CH2=45W</td>
</tr>
</tbody>
</table>

Linear Colour Tuning Profile

![Linear Colour Tuning Profile](image)

Manual Control via Push-DIM

* Colour Tuning
  Switch Action
  Step 1: Short press (3 times within 2 seconds)
  Step 2: Short press (> 1 second)
  Response
  Light starts tuning
  Set the desired colour

* On/off control and brightness adjustment
  Switch Action
  Short press (<0.4 second)
  Note: short press has to be longer than 0.1s, or it will be invalid.
  Long press (>0.4 second)
  Response
  Toggle light on / off
  Toggle dim light / increase brightness

Synchronization
Switch Action
Long press (>1.5 seconds)
Response
All lights will dim down to minimum then return to 50% brightness

* We recommend the number of drivers connected to a switch does not exceed 25 pieces.
The maximum length of the wires from push to driver should be no more than 20 meters.

Remote Control HRC-08

Permanent ON/OFF function
Press button to switch on or switch off the light.

CCT Adjust
Long press or to adjust the color of the light. means light turns to warm white, while means light turns to cool white.

Direct access to 2700k, 3500k, 4500k, 5500k are also available on the remote controller.

20% saving @ initial 10,000 hrs.

Luminaires can be overdesigned with 20% lumen output @ the initial 10,000 hours due to the lumen depreciation of LED. Press button first, then press , this 20% output can be saved during the first 10,000 hours accordingly.

Press the button to go back to the full output after 10,000 hrs to maintain the total lumen output.

Brightness +/-

Long press or to adjust the brightness of the fixture.

Note: 1. The buttons of “Function”, “Programmeroffice”, “Programmehome”, “Setting”, “Holdtime & Detection range” are disabled.
2. The buzzer beeps once when the RC signal is successfully received.