

# HADLER



## Data sheet

Constant current LED control gear  
80 W Output power  
50 – 700 mA Output current  
Intelligent temperature protection

Linear VI LED

Luxtronic®

## Linear VI LED control gear

More than 25 years of experience in the design and development of electronic lighting products, the close cooperation with test authorities and the joint research in the sector of explosion protection enable the company Hadler to develop products in accordance with market trends which will exactly meet the requirements. Function and, above all, safety will take priority over other requirements.

Furthermore, in accordance with the company philosophy, Luxtronic ballasts also reflect the "second idea": Features offering an additional benefit and using the full competence of the company Hadler to allow for a unique position in the market. Both large-scale and small-scale series of the Luxtronic ballasts can be produced in a cost-effective way. The proximity to the market allows for short delivery times.

Michael Lamkowski  
Head of Research & Development

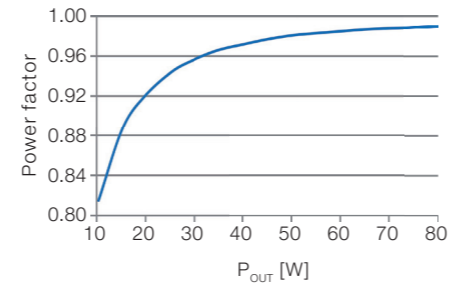


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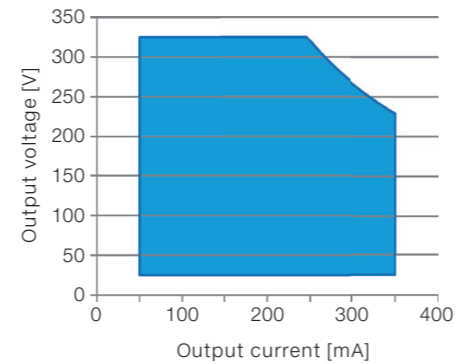
**Input**

Rated supply voltage	220 – 240 V
Mains frequency	0 / 50 – 60 Hz
Input voltage range a.c.	198 – 264 V
Input voltage range d.c.	176 – 275 V
Power factor	0.98 at full load (see graph)
Total Harmonic Distortion	≈ 12 %



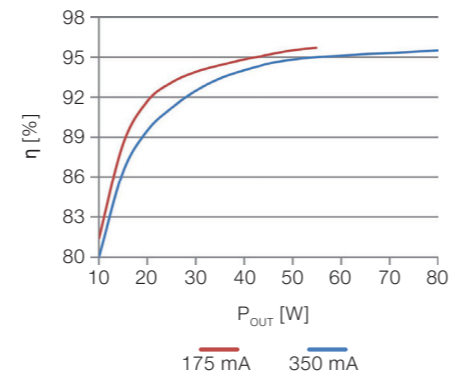
**Output**

Output characteristic	Constant current, non-SELV
Output voltage	25 – 325 V (see graph)
Output current	50 – 350 mA
Output power	10 – 80 W
No. of output channels	1
Output current accuracy	+/- 5 %
Output current ripple	< 10 % at 100 Hz
Output dimming	n.a.
Dimming range	n.a.



**Efficiency**

Stand-By Power consumption	n.a.
No-load Power consumption	0.5 W
Electrical efficiency	> 0.95 at full load (see graph)



**Interface**

Dimming Interface	n.a.
Interface control current	n.a.
Dimming curve	n.a.

**Temperature, Lifetime**

Ambient temperature range	-40 – 70 °C		
Max. case temperature	85 °C		
T <sub>a</sub>	50 °C	60 °C	70 °C
T <sub>c</sub>	65 °C	75 °C	85 °C
lifetime	> 160,000 h	100,000 h	50,000 h

**Max. No. of ECG per circuit breaker**

Type	B10	8 pcs.
	C10	13 pcs.
	B16	12 pcs.
	C16	21 pcs.

**Wiring**

Max. output cable length	200 cm
Input wire cross-section	0.5 – 1.5 mm <sup>2</sup>
Output wire cross-section	0.5 – 1.5 mm <sup>2</sup>

The wiring should be short and without crossings for best EMC results.

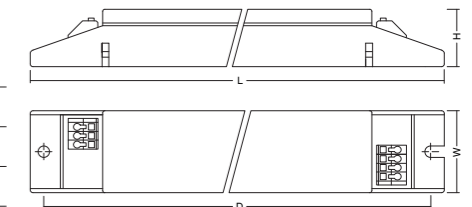
**Dimensions**

Length x Width x Height	360 x 30 x 21 mm
Mounting hole distance D	350 mm
Mounting screws	M4 max.

(see schematic view on the right)

**Ordering data**

Weight	0.2 kg
Packaging unit	72 pcs.
Order No.	<b>3 C 180 08 0</b>



### Emergency lighting, performance during DC power supply

The electronic ballast is equipped with an integrated supply voltage detection which allows a certain DC-supply mode.

The following values are factory-adjusted:

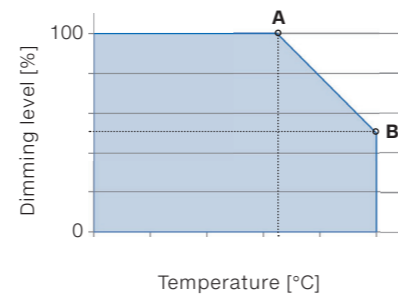
DC supply level	229	≅ 50% EOF (Emergency Output Factor)
“Time to light”	0.3 s	suitable for high-risk task area lighting

### Temperature protection

The unit operates an integrated temperature overload protection which reduces the output power by linear decrease if a certain operating point “A” is reached and reduces the output power to zero if the temperature at operating point “B” is exceeded. The control gear restarts automatically if the temperature decreases by 5 K.

The following values are factory-adjusted:

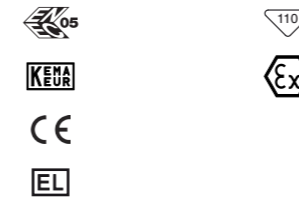
Temperature “A”	$T_{board} = 90\text{ °C} \cong T_c = 75 - 80\text{ °C}$
Temperature “B”	$T_{board} = 95\text{ °C} \cong T_c = 80 - 85\text{ °C}$
Temperature limit level “B”	229 ≅ 50%



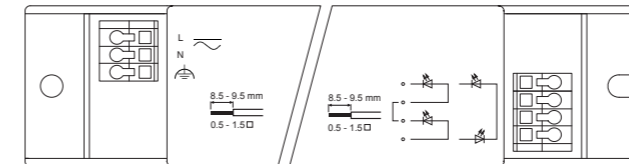
### Standards

- EN 61347-1
- EN 61347-2-13
- EN 62384
- EN 55015
- EN 61547
- EN 61000-3-2
- EN 61000-3-3
- EN 60079-0
- EN 60079-15

### Markings



### Wiring diagram



ECG 50 – 350 mA, 80 W, 220 – 240 V

### Safety instructions

Please carefully read these instructions prior to installation and keep them for later reference.

This control gear is intended for operation of LED modules in explosion protected luminaires. Please ensure that ratings of the LED module match with the output range of the ECG. Do not use this product for other than intended use.



Hadler GmbH declares that this control gear is in conformity with the EU explosion protection directive 94/9/EC (ATEX). Compliance with requirements of IEC 60079-0:2011 and IEC 60079-15:2010 is laid down in certificate number IECEX TUN 15.0001 U.

The sign „U“ placed after certificate number and ATEX marking indicates, that the corresponding certificate is not equivalent to a Statement of Conformity for an equipment or protective system. It is intended to be used as a basis for certifying an equipment or protective system.

Certificates and detailed product datasheets are available at [www.hadler-gmbh.de](http://www.hadler-gmbh.de).

For operation conditions see pages 4 – 6.

### Installation precautions

This control gear may be installed into housings of explosion protected luminaires with a minimum type of protection of the housing of IP54 according to IEC 60529.

Keep in mind that the output is NOT isolated against mains voltage. Proper insulation of the output circuits is mandatory.

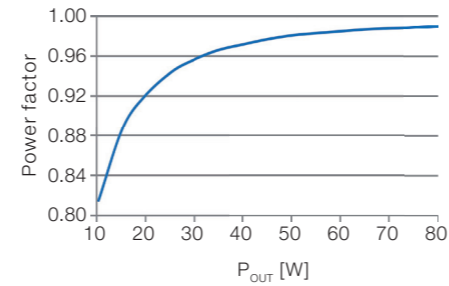
Dismantled length of wires has to be between 8.5 and 9.5 mm. At use of fine-stranded wires, conductor sleeves have to be used. Permissible cross section of wires is from 0.5 up to 1.5 mm<sup>2</sup>.

Maximum temperature rise at internal components is 48 K.

Devices contain no field-serviceable parts. In case of malfunction, contact the manufacturer.

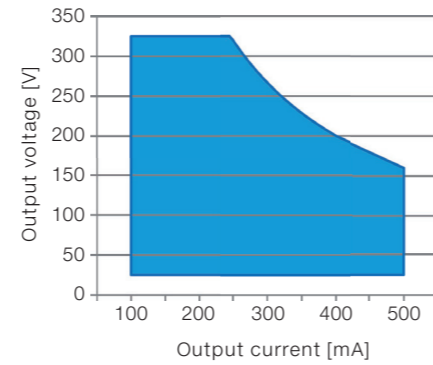
**Input**

Rated supply voltage	220 – 240 V
Mains frequency	0 / 50 – 60 Hz
Input voltage range a.c.	198 – 264 V
Input voltage range d.c.	176 – 275 V
Power factor	0.98 at full load (see graph)
Total Harmonic Distortion	≈ 12 %



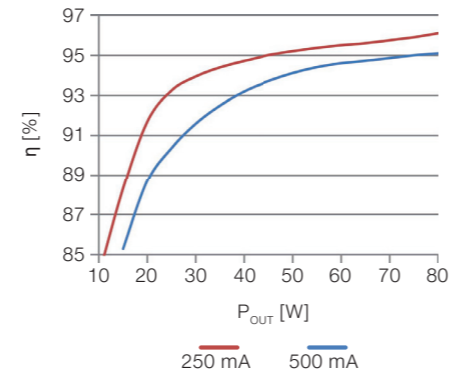
**Output**

Output characteristic	Constant current, non-SELV
Output voltage	25 – 325 V (see graph)
Output current	100 – 500 mA
Output power	10 – 80 W
No. of output channels	1
Output current accuracy	+/- 5 %
Output current ripple	< 10 % at 100 Hz
Output dimming	n.a.
Dimming range	n.a.



**Efficiency**

Stand-By Power consumption	n.a.
No-load Power consumption	0.5 W
Electrical efficiency	> 0.95 at full load (see graph)



**Interface**

Dimming Interface	n.a.
Interface control current	n.a.
Dimming curve	n.a.

**Temperature, Lifetime**

Ambient temperature range	-40 – 60 °C		
Max. case temperature	80 °C		
T <sub>a</sub>	50 °C	60 °C	70 °C
T <sub>c</sub>	65 °C	75 °C	85 °C
lifetime	> 160,000 h	100,000 h	50,000 h

**Max. No. of ECG per circuit breaker**

Type	B10	8 pcs.
	C10	13 pcs.
	B16	12 pcs.
	C16	21 pcs.

**Wiring**

Max. output cable length	200 cm
Input wire cross-section	0.5 – 1.5 mm <sup>2</sup>
Output wire cross-section	0.5 – 1.5 mm <sup>2</sup>

The wiring should be short and without crossings for best EMC results.

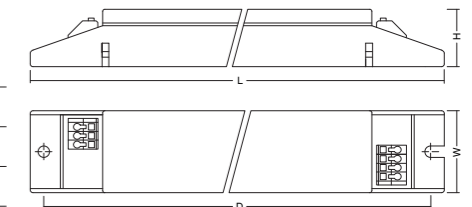
**Dimensions**

Length x Width x Height	360 x 30 x 21 mm
Mounting hole distance D	350 mm
Mounting screws	M4 max.

(see schematic view on the right)

**Ordering data**

Weight	0.2 kg
Packaging unit	72 pcs.
Order No.	<b>3 C 180 18 0</b>



### Emergency lighting, performance during DC power supply

The electronic ballast is equipped with an integrated supply voltage detection which allows a certain DC-supply mode.

The following values are factory-adjusted:

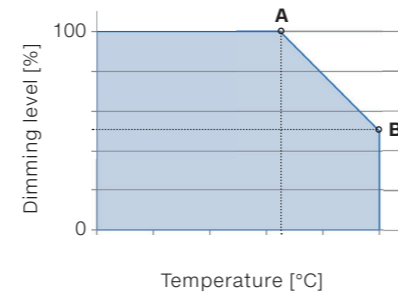
DC supply level	229	≈ 50% EOF (Emergency Output Factor)
“Time to light”	0.3 s	suitable for high-risk task area lighting

### Temperature protection

The unit operates an integrated temperature overload protection which reduces the output power by linear decrease if a certain operating point “A” is reached and reduces the output power to zero if the temperature at operating point “B” is exceeded. The control gear restarts automatically if the temperature decreases by 5 K.

The following values are factory-adjusted:

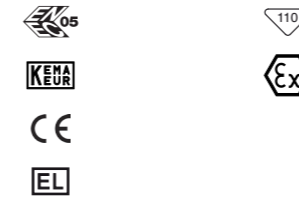
Temperature “A”	$T_{board} = 90\text{ °C} \approx T_c = 75 - 80\text{ °C}$
Temperature “B”	$T_{board} = 95\text{ °C} \approx T_c = 80 - 85\text{ °C}$
Temperature limit level “B”	229 ≈ 50%



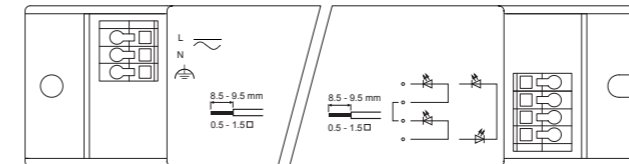
### Standards

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- EN 61347-2-13
- EN 62384
- EN 55015
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- EN 61000-3-2
- EN 61000-3-3
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- EN 60079-15

### Markings



### Wiring diagram



ECG 100 – 500 mA, 80 W, 220 – 240 V

### Safety instructions

Please carefully read these instructions prior to installation and keep them for later reference.

This control gear is intended for operation of LED modules in explosion protected luminaires. Please ensure that ratings of the LED module match with the output range of the ECG. Do not use this product for other than intended use.



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For operation conditions see pages 10 – 12.

### Installation precautions

This control gear may be installed into housings of explosion protected luminaires with a minimum type of protection of the housing of IP54 according to IEC 60529.

Keep in mind that the output is NOT isolated against mains voltage. Proper insulation of the output circuits is mandatory.

Dismantled length of wires has to be between 8.5 and 9.5 mm. At use of fine-stranded wires, conductor sleeves have to be used. Permissible cross section of wires is from 0.5 up to 1.5 mm<sup>2</sup>.

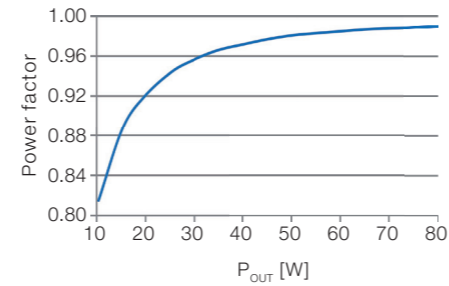
Maximum temperature rise at internal components is 48 K.

Devices contain no field-serviceable parts. In case of malfunction, contact the manufacturer.



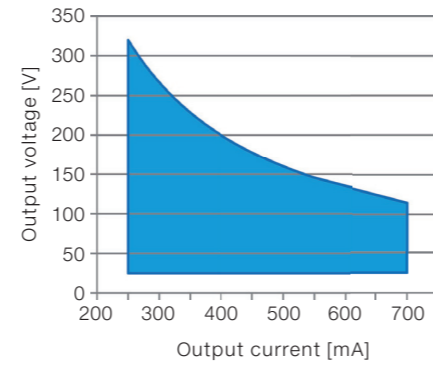
**Input**

Rated supply voltage	220 – 240 V
Mains frequency	0 / 50 – 60 Hz
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Input voltage range d.c.	176 – 275 V
Power factor	0.97 at full load (see graph)
Total Harmonic Distortion	≈ 12 %



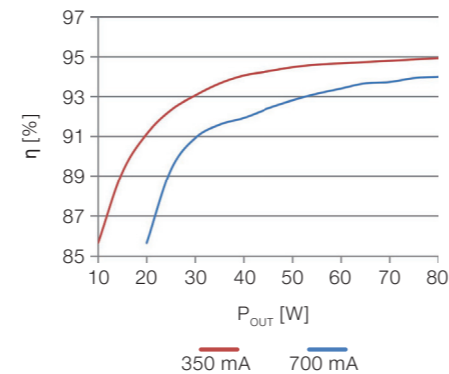
**Output**

Output characteristic	Constant current, non-SELV
Output voltage	25 – 325 V (see graph)
Output current	250 – 700 mA
Output power	10 – 80 W
No. of output channels	1
Output current accuracy	+/- 5 %
Output current ripple	< 10 % at 100 Hz
Output dimming	n.a.
Dimming range	n.a.



**Efficiency**

Stand-By Power consumption	n.a.
No-load Power consumption	0.5 W
Electrical efficiency	> 0.95 at full load (see graph)



**Interface**

Dimming Interface	n.a.
Interface control current	n.a.
Dimming curve	n.a.

**Temperature, Lifetime**

Ambient temperature range	-40 – 50 °C		
Max. case temperature	75 °C		
T <sub>a</sub>	40 °C	45 °C	50 °C
T <sub>c</sub>	65 °C	70 °C	75 °C
lifetime	100,000 h	75,000 h	50,000 h

**Max. No. of ECG per circuit breaker**

Type	B10	8 pcs.
	C10	13 pcs.
	B16	12 pcs.
	C16	21 pcs.

**Wiring**

Max. output cable length	200 cm
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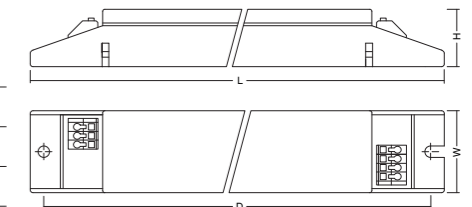
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Mounting hole distance D	350 mm
Mounting screws	M4 max.

(see schematic view on the right)

**Ordering data**

Weight	0.2 kg
Packaging unit	72 pcs.
Order No.	<b>3 C 180 28 0</b>



### Emergency lighting, performance during DC power supply

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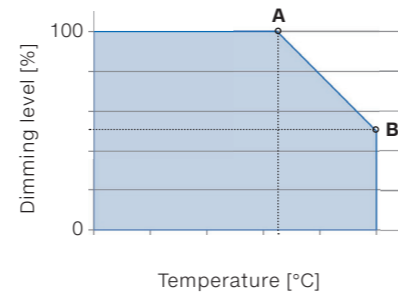
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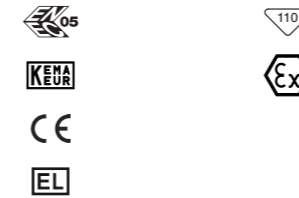
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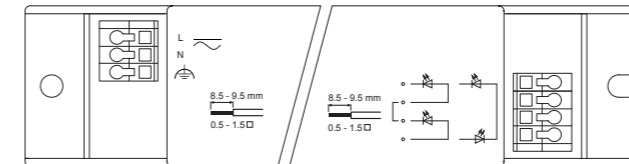
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- EN 61000-3-3
- EN 60079-0
- EN 60079-15

### Markings



### Wiring diagram



ECG 250 – 700 mA, 80 W, 220 – 240 V

### Safety instructions

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For operation conditions see pages 16 – 18.

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Maximum temperature rise at internal components is 48 K.

Devices contain no field-serviceable parts. In case of malfunction, contact the manufacturer.



<http://www.hadler-gmbh.de/en/luxtronic/all-products/>

**Hadler GmbH**  
Fritzlärer Straße 19  
34587 Felsberg-Neuenbrunslar  
Tel.: +49 5662 9399-0  
Fax: +49 5662 9399-29  
E-Mail: [info@hadler-gmbh.de](mailto:info@hadler-gmbh.de)

**Luxtronic®**