TRIDONIC

LED driver
Compact fixed output

Driver LCI 100 W 1400/1750/2100 mA TEC C

TEC series

Product description

- Fixed output built-in LED driver
- Constant current LED driver
- Output current 1,400, 1,750 or 2,100 mA
- Max. output power 100 W
- Nominal life-time up to 50,000 h
- For luminaires of protection class I and protection class II
- Temperature protection as per EN 61347-2-13 C5e
- 5-year guarantee (conditions at www.tridonic.com)

Housing properties

- Casing: polycarbonat, white
- Brush-coated for higher protection against humidity
- Type of protection IP20

Functions

- Overtemperature protection
- Overload protection
- Short-circuit protection
- No-load protection
- Burst protection voltage up to 2 kV
- Surge protection voltage up to 2 kV (L to N)
- Surge protection voltage up to 4 kV (L/N to earth)

→

Standards, page 3

Wiring diagrams and installation examples, page 4

IP20 SELV RoHS

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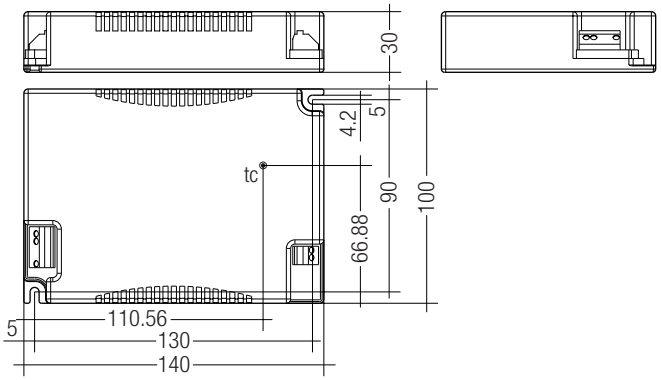
Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Current at 50 Hz 230 V	0.47 A
Mains frequency	50 / 60 Hz
Overvoltage protection	300 V AC, 1 h
Max. input power	115 W
Output power range	50 – 100 W
THD (at 230 V, 50 Hz, full load)	< 10 %
THD (at 230 V, 50 Hz, min. load)	< 15 %
Output current tolerance[2]	± 7.5 %
Typ. current ripple (at 230 V, 50 Hz, full load)	< 3 %
Output P_{st}^{LM} (at full load)	≤ 1
Output SVM (at full load)	≤ 0.4
Starting time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Hold on time at power failure (output)	0 s
Ambient temperature ta	-25 … +60 °C
Ambient temperature ta (at life-time 50,000 h)	60 °C
Storage temperature ts	-40 … +80 °C
Life-time	up to 50,000 h
Guarantee (conditions at www.tridonic.com)	5 years
Dimensions L x W x H	140 x 100 x 30 mm



Ordering data

Type	Article number[3]	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LCI 100W 1400mA TEC C	**87500267**	10 pc(s).	240 pc(s).	1,200 pc(s).	0.274 kg
LCI 100W 1750mA TEC C	**87500268**	10 pc(s).	240 pc(s).	1,200 pc(s).	0.276 kg
LCI 100W 2100mA TEC C	**87500269**	10 pc(s).	240 pc(s).	1,200 pc(s).	0.276 kg

[3] Article LCI 100W 1750mA TEC C (87500268) has the KC approval mark.

Specific technical data

Type	Output current[2]	Typ. power consumption (at 230 V, 50 Hz, full load)	λ at full load[1]	Efficiency at full load[1]	λ at min. load[1]	Efficiency at min. load[1]	Min. forward voltage[1]	Max. forward voltage[1]	Max. output voltage	Max. peak output current[1]	Max. casing temperature tc
LCI 100W 1400mA TEC C	1,400 mA	106.0 W	0.98	94.0 %	0.93	90 %	35.5 V	71.5 V	76.5 V	2,100 mA	80 °C
LCI 100W 1750mA TEC C	1,750 mA	106.0 W	0.99	93.5 %	0.95	90 %	28.5 V	58.0 V	62.0 V	2,625 mA	80 °C
LCI 100W 2100mA TEC C	2,100 mA	106.5 W	0.99	93.5 %	0.94	89 %	23.5 V	47.5 V	50.5 V	3,150 mA	85 °C

[1] Test result at 230 V, 50 Hz.

[2] Output current is mean value.

Standards
EN 55015
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-13
EN 61547
EN 62384

Overload protection
If the maximum load is exceeded by a defined internal limit, the LED driver reduces the LED output current. After elimination of the overload the nominal operation is restored automatically.

Overtemperature protection
The LED driver is protected against temporary thermal overheating. If the temperature limit is exceeded, the unit shuts down itself and then turns on when it cools down. After the elimination of over temperature fault, the nominal operation is restored automatically. The temperature protection is activated typically at 7 °C above tc max.

Short-circuit behaviour
In case of a short circuit on the secondary side (LED) the LED driver will latch-up. The LED driver will recover itself when the short-circuit fault is removed and the AC is recycled (turn off the AC for longer than 0.5 s and then turn on).

No-load operation
The LED driver works in constant voltage mode. In no-load operation the output voltage will not exceed the specified max. output voltage (no-load voltage, refer to page 1).

Conditions of use and storage
Humidity: 5 % up to max. 95 %, not condensed (max. 56 days/year at 95 %)

Storage temperature: -40 °C up to max. +80 °C

The devices have to be within the specified temperature range (ta) before they can be operated.

Glow-wire test
according to EN 61347-1 with increased temperature of 850 °C passed.

Expected life-time

Type	ta	40 °C	50 °C	60 °C	65 °C
LCI 100W 1400mA TEC C	tc	60 °C	70 °C	80 °C	x
	Life-time	100,000 h	80,000 h	50,000 h	x
LCI 100W 1750mA TEC C	tc	60 °C	70 °C	80 °C	x
	Life-time	100,000 h	80,000 h	50,000 h	x
LCI 100W 2100mA TEC C	tc	65 °C	75 °C	85 °C	x
	Life-time	100,000 h	80,000 h	50,000 h	x

The LED drivers are designed for a life-time stated above under reference conditions and with a failure probability of less than 10 %.

The relation of tc to ta temperature depends also on the luminaire design. If the measured tc temperature is approx. 5 K below tc max., ta temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

Maximum loading of automatic circuit breakers in relation to inrush current

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation Ø	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	I_{max}	Time
LCI 100W 1400mA TEC C	8	10	14	15	4	5	7	8	57 A	230 µs
LCI 100W 1750mA TEC C	8	10	14	15	4	5	7	8	57 A	230 µs
LCI 100W 2100mA TEC C	8	10	14	15	4	5	7	8	57 A	230 µs

These are max. values calculated out of inrush current! Please consider not to exceed the maximum rated continuous current of the circuit breaker.
Calculation uses typical values from ABB series S200 as a reference.
Actual values may differ due to used circuit breaker types and installation environment.

Harmonic distortion in the mains supply (at 230 V / 50 Hz and full load) in %

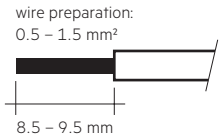
	THD	3.	5.	7.	9.	11.
LCI 100W 1400mA TEC C	10	7	3	2	2	2
LCI 100W 1750mA TEC C	10	5	3	1	1	1
LCI 100W 2100mA TEC C	10	7	3	2	2	1

Installation instructions
The LED module and all contact points within the wiring must be sufficiently insulated against 500 V surge voltage.
Creepage distances and clearances must be maintained.

Replace LED module
1. Mains off
2. Remove LED module
3. Wait for 10 seconds
4. Connect LED module again

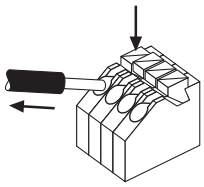
Hot plug-in or secondary switching of LEDs is not permitted and may cause a very high current to the LEDs.

Wiring type and cross section
The wiring can be stranded wires with ferrules or rigid wires with a cross section of 0.5 – 1.5 mm².
Strip 8.5 – 9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals (WAGO 250).



Wiring instructions
The secondary leads should be separated from the mains connections and wiring for good EMC performance.
Maximum lead length on secondary side is 2 m. For a good EMC performance keep the the LED wiring as short as possible.

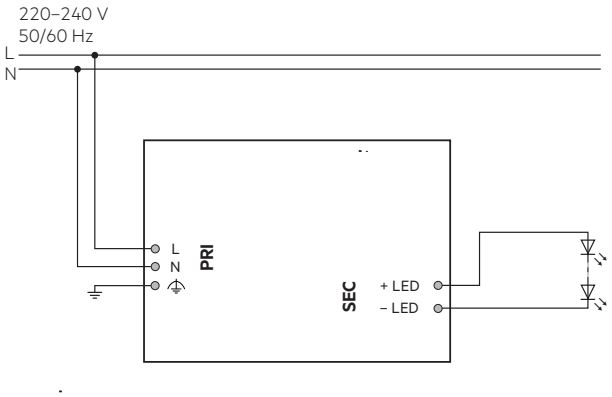
Release of the wiring
Press down the “push button” and remove the cable from front.



Mounting of device
Max. torque for fixing: 0.5 Nm/M4

Wiring guidelines
- All connections must be kept as short as possible to ensure good EMI behaviour.
- Mains leads should be kept apart from LED driver and other leads (ideally 5 – 10 cm distance)
- Max. length of output and I sel wires is 2 m.
- Secondary switching is not permitted.
- Incorrect wiring can demage LED modules.
- The wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).

Wiring diagram



Insulation and electric strength testing of luminaires
Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an insulation test with 500 V DC for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.
The insulation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V AC (or 1.414 x 1500 V DC). To avoid damage to the electronic devices this test must not be conducted.

Conditions of use

The LED driver is declared as inbuilt LED controlgear, meaning it is intended to be used within a luminaire enclosure.
If the product is used outside a luminaire, the installation must provide suitable protection for people and environment (e.g. in illuminated ceilings).

Maximum number of switching cycles

All LED driver are tested with 50,000 switching cycles.

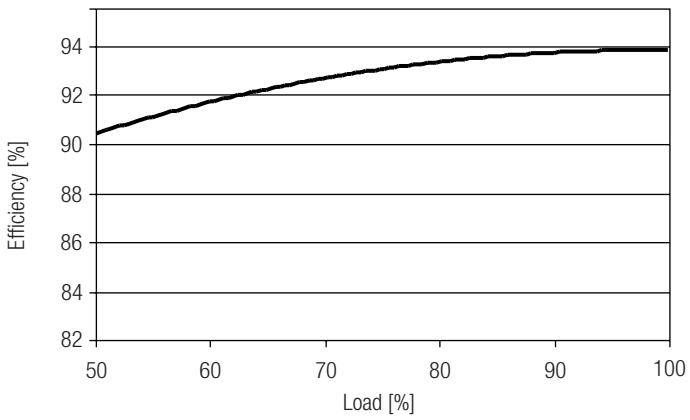
Additional information

Additional technical information at www.tridonic.com → Technical Data

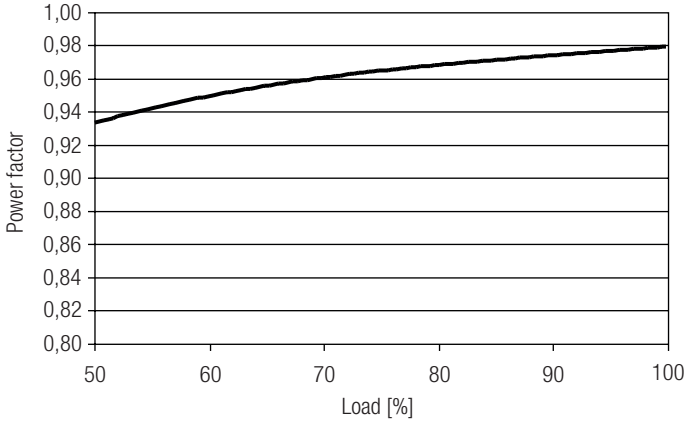
Life-time declarations are informative and represent no warranty claim.
No warranty if device was opened.

Diagrams LCI 100W 1,400mA TEC C

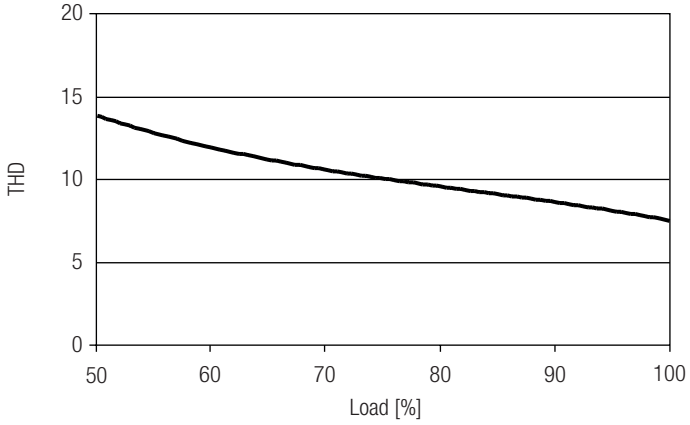
Efficiency vs Load



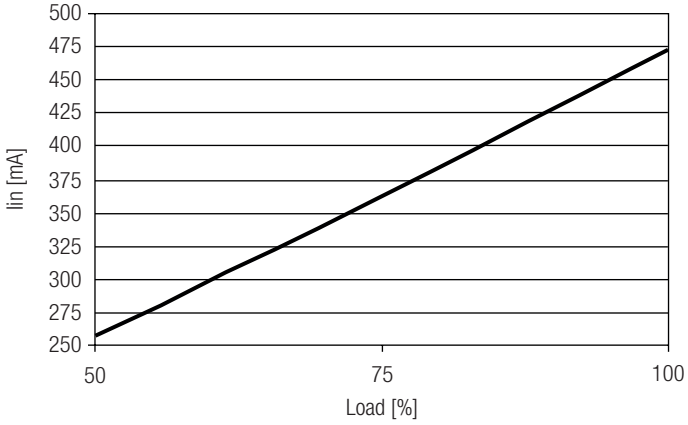
Power factor vs Load



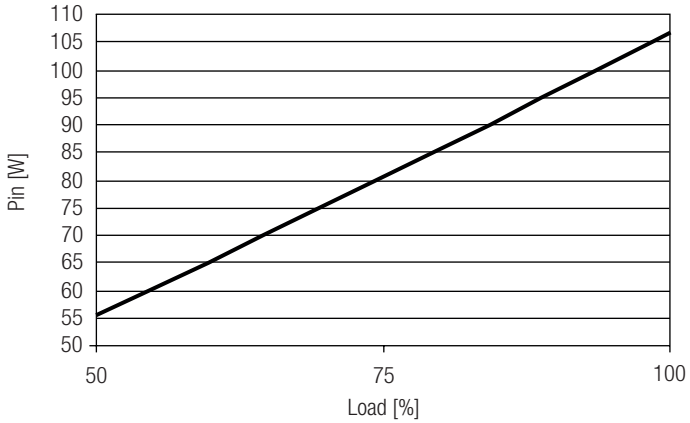
THD vs Load



Input current vs load

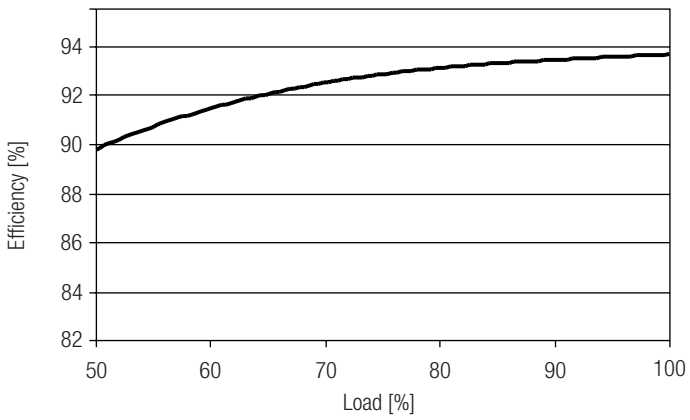


Input power vs load

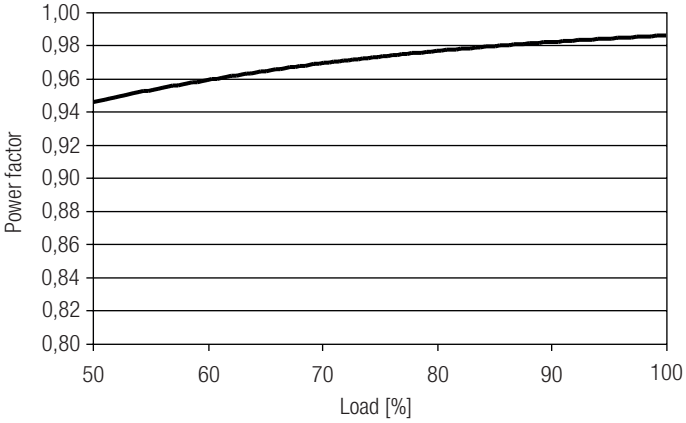


Diagrams LCI 100W 1,750mA TEC C

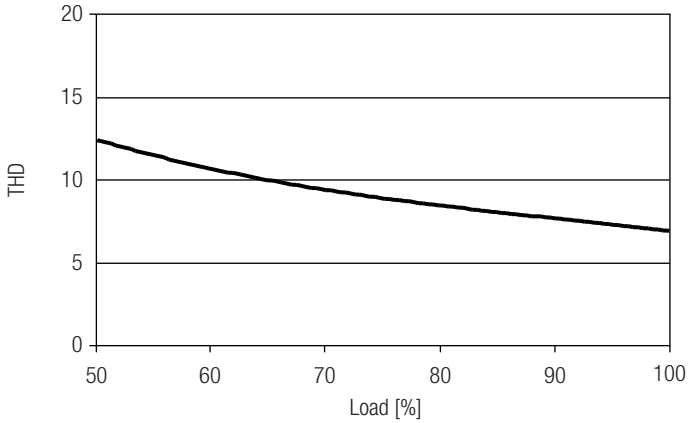
Efficiency vs Load



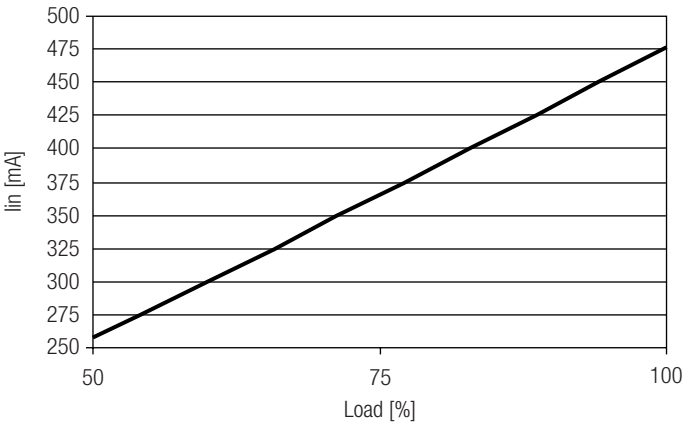
Power factor vs Load



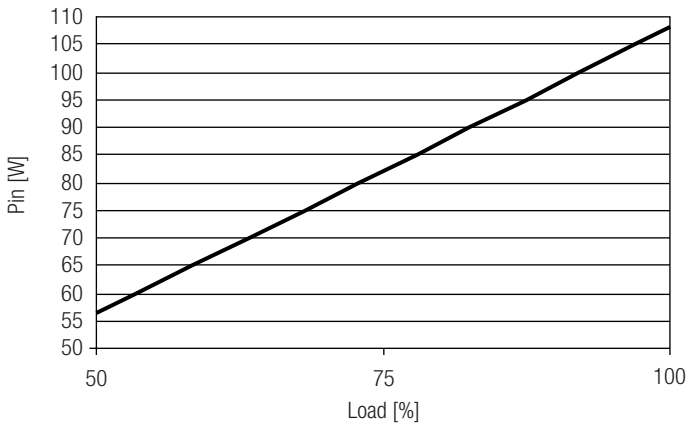
THD vs Load



Input current vs load

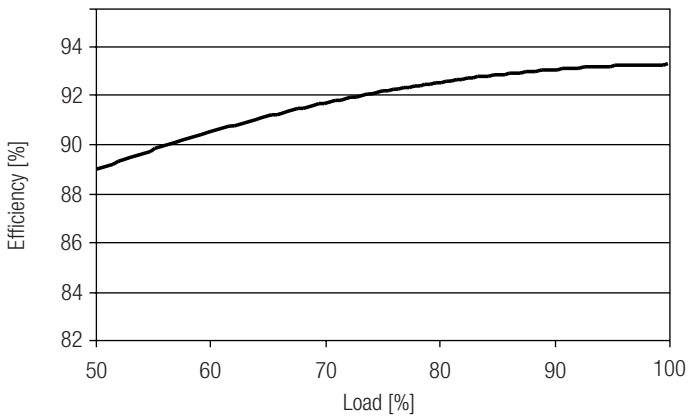


Input power vs load

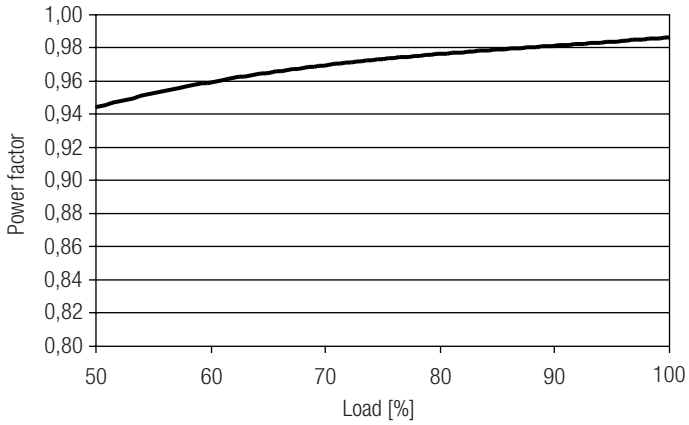


Diagrams LCI 100W 2,100mA TEC C

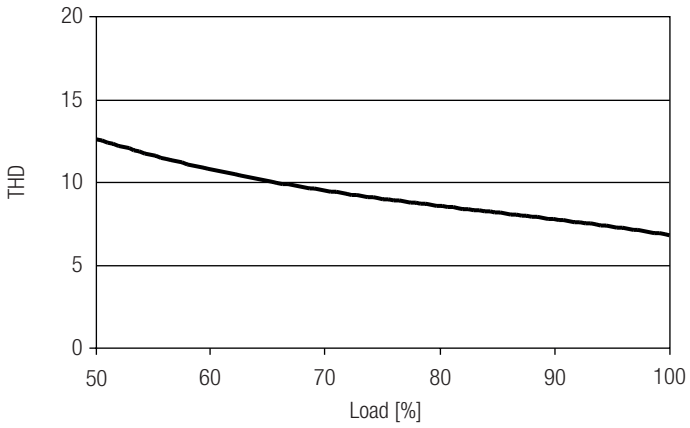
Efficiency vs Load



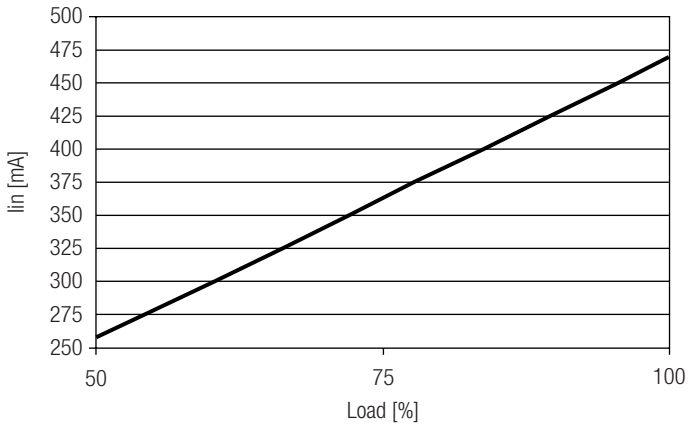
Power factor vs Load



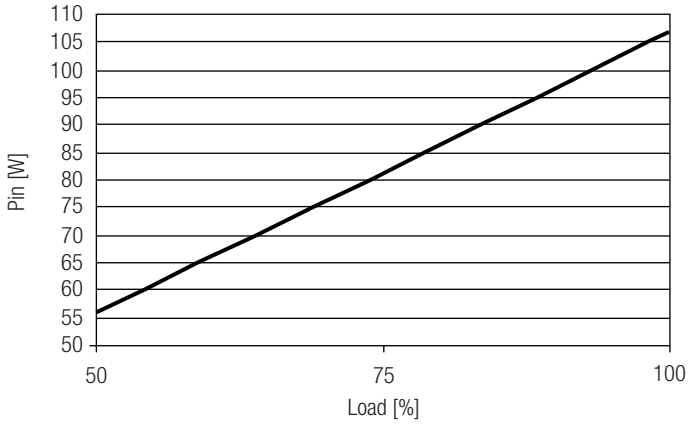
THD vs Load



Input current vs load



Input power vs load



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