



Driver LC 50W 250/300/350/700/1050mA fixC Ip SNC

essence series non-SELV

Product description

- Fixed output built-in LED Driver
- Constant current LED Driver
- For luminaires of protection class I and protection class II
- Temperature protection as per EN 61347-2-13 C5e
- Output current 250, 300, 350, 700 or 1,050 mA
- Max. output power 50 W
- Nominal life-time up to 50,000 h
- 5-year guarantee

Housing properties

- Casing: metal, white
- Type of protection IP20

Functions

- Overload protection
- Short-circuit protection
- No-load protection
- Burst protection voltage 1 kV
- Surge protection voltage 1 kV (L to N)
- Surge protection voltage 2 kV (L/N to earth)



Standards, page 3

Wiring diagrams and installation examples, page 4



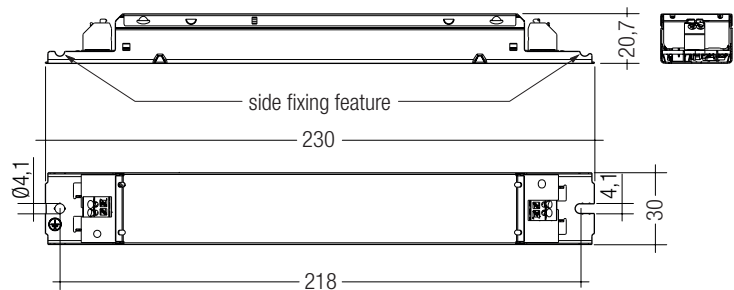
IP20       RoHS

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Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Mains frequency	50 / 60 Hz
Output power range	30 – 50 W
THD (at 230 V, 50 Hz, full load)	< 20 %
Output current tolerance [®]	± 7.5 %
Typ. current ripple (at 230 V, 50 Hz, full load)	± 30 %
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	-20 ... +50 °C
Ambient temperature ta (at life-time 50,000 h)	40 °C
Storage temperature ts	-40 ... +80 °C
Life-time	up to 50,000 h
Dimensions L x W x H	230 x 30 x 21 mm
Hole spacing D	218 mm



Ordering data

Type	Article number [®]	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LC 50W 250mA fixC Ip SNC	87500444	50 pc(s).	1,050 pc(s).	3,150 pc(s).	0.144 kg
LC 50W 300mA fixC Ip SNC	87500446	50 pc(s).	1,050 pc(s).	3,150 pc(s).	0.142 kg
LC 50W 350mA fixC Ip SNC	87500445	50 pc(s).	1,050 pc(s).	3,150 pc(s).	0.142 kg
LC 50W 700mA fixC Ip SNC	87500447	50 pc(s).	1,050 pc(s).	3,150 pc(s).	0.145 kg
LC 50W 1050mA fixC Ip SNC	87500466	50 pc(s).	1,050 pc(s).	3,150 pc(s).	0.143 kg

Specific technical data

Type	Output current [®]	Input current (at 230 V, 50 Hz, full load)	Max. input power	Typ. power consumption (at 230 V, 50 Hz, full load)	λ at full load [®]	Efficiency at full load [®]	λ at min. load [®]	Efficiency at min. load [®]	Min. forward voltage [®]	Max. forward voltage [®]	Max. output voltage	Max. peak output current at full load ^{®/®}	Max. peak output current at min. load ^{®/®}	Max. casing temperature tc
LC 50W 250mA fixC Ip SNC	250 mA	242 mA	55 W	54.0 W	0.95	92 %	0.9C	91.5 %	120.0 V	200.0 V	400 V	300 mA	320 mA	75 °C
LC 50W 300mA fixC Ip SNC	300 mA	242 mA	55 W	54.0 W	0.95	92 %	0.9C	91.5 %	100.0 V	167.0 V	400 V	360 mA	380 mA	75 °C
LC 50W 350mA fixC Ip SNC	350 mA	242 mA	55 W	54.0 W	0.95	92 %	0.9C	91.5 %	86.0 V	143.0 V	350 V	430 mA	460 mA	75 °C
LC 50W 700mA fixC Ip SNC	700 mA	242 mA	55 W	54.0 W	0.95	91 %	0.9C	90.0 %	43.0 V	71.5 V	300 V	900 mA	940 mA	75 °C
LC 50W 1050mA fixC Ip SNC	1,050 mA	253 mA	56 W	55.5 W	0.95	89 %	0.9C	88.0 %	28.5 V	47.5 V	300 V	1,320 mA	1,460 mA	80 °C

[®] Test result at 230 V, 50 Hz.

[®] The trend between min. and full load is linear.

[®] Output current is mean value.

[®] KC approval mark for art. no.: 87500466.

Standards

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

Overload protection

If the output voltage range is exceeded the LED Driver will protect itself and LED may flicker. After elimination of the overload, the nominal operation is restored automatically.

Short-circuit behaviour

In case of a short circuit on the output side (LED) the LED Driver switches into hic-cup mode. After elimination of the short-circuit fault the LED Driver will recover automatically.

No-load operation

The LED Driver works in burst working mode to provide a constant output voltage regulation which allows the application to be able to work safely when LED string opens due to a failure.

Installation instructions

The LED module and all contact points within the wiring must be sufficiently insulated against 4 kV surge voltage.
Air and creepage distance must be maintained.

Replace LED module

1. Mains off
2. Remove LED module
3. Wait for 30 seconds
4. Connect LED module again

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

Mounting of device

Max. torque for fixing: 0.5 Nm/M4

Conditions of use and storage

Humidity: 5% up to max. 85%,
not condensed
(max. 56 days/year at 85%)

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.

Expected life-time

Type	ta	40 °C	50 °C	60 °C
LC 50W 250mA fixC Ip SNC	tc	65 °C	75 °C	x
	Life-time	50,000 h	25,000 h	x
LC 50W 300mA fixC Ip SNC	tc	65 °C	75 °C	x
	Life-time	50,000 h	25,000 h	x
LC 50W 350mA fixC Ip SNC	tc	65 °C	75 °C	x
	Life-time	50,000 h	25,000 h	x
LC 50W 700mA fixC Ip SNC	tc	65 °C	75 °C	x
	Life-time	50,000 h	25,000 h	x
LC 50W 1050mA fixC Ip SNC	tc	70 °C	80 °C	x
	Life-time	50,000 h	25,000 h	x

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

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
LC 50W 250mA fixC Ip SNC	40	50	60	80	40	50	60	80	5 A	37 µs
LC 50W 300mA fixC Ip SNC	40	50	60	80	40	50	60	80	5 A	37 µs
LC 50W 350mA fixC Ip SNC	40	50	60	80	40	50	60	80	5 A	37 µs
LC 50W 700mA fixC Ip SNC	40	50	60	80	40	50	60	80	5 A	37 µs
LC 50W 1050mA fixC Ip SNC	40	50	60	80	40	50	60	80	5 A	37 µs

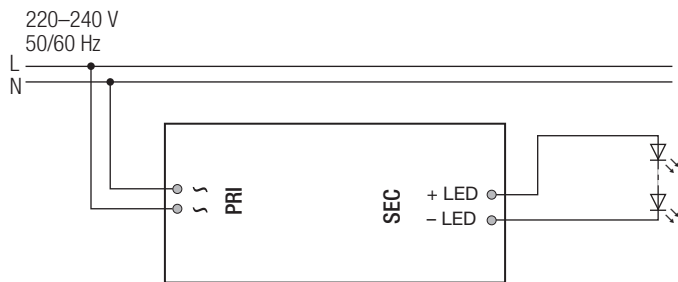
These are max. values calculated out of continuous current running the device on full load.

There is no limitation due to inrush current.

If load is smaller than full load for calculation only continuous current has to be considered.

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

	THD	3.	5.	7.	9.	11.
LCI 50W 250mA fixC Ip SNC	< 20	< 9	< 2	< 2	< 2	< 2
LCI 50W 300mA fixC Ip SNC	< 20	< 10	< 2	< 1	< 1	< 1
LCI 50W 350mA fixC Ip SNC	< 20	< 10	< 2	< 2	< 1	< 1
LCI 50W 700mA fixC Ip SNC	< 20	< 15	< 4	< 1	< 1	< 1
LCI 50W 1050mA fixC Ip SNC	< 20	< 15	< 4	< 2	< 2	< 2

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.

Additional information

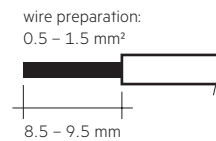
Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

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

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 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 wires is 2 m.
- Incorrect wiring can damage LED modules.
- To avoid the damage of the Driver, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).

Earth connection

The earth connection is conducted as protection earth (PE). The LED Driver can be earthed via metal housing. If the LED Driver will be earthed, protection earth (PE) has to be used. There is no earth connection required for the functionality of the LED Driver. Earth connection is recommended to improve following behaviour.

- Electromagnetic interferences (EMI)
- Transmission of mains transients to the LED output

In general it is recommended to earth the LED Driver if the LED module is mounted on earthed luminaire parts respectively heat sinks and thereby representing a high capacity against earth.

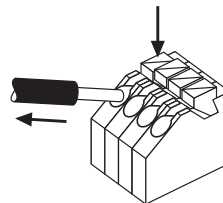
For Class I application, protection earth need to be connected with the metal housing (bottom part).

For Class II application, protection earth is no need to be connected, below 2 scenarios should be considered:

- If the LED Driver housing is screwed on a metal part inside the luminaires, both LED Driver and LED module must be insulated.
- If the LED Driver housing is screwed on a plastic part inside the luminaires, the LED module need to be insulated.

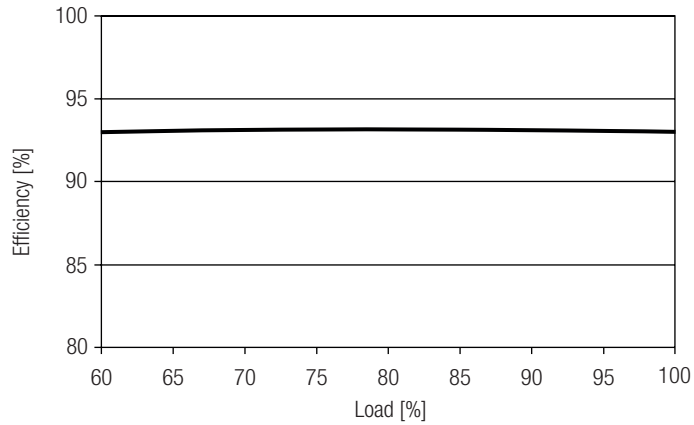
Release of the wiring

Press down the "push button" and remove the cable from front.

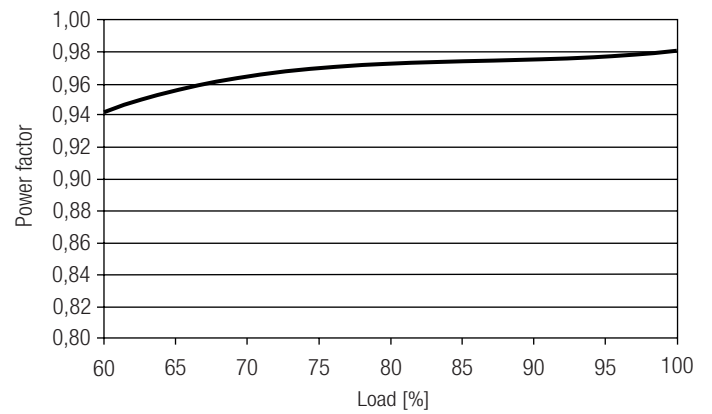


Diagrams LC 50W 250mA fixC Ip SNC

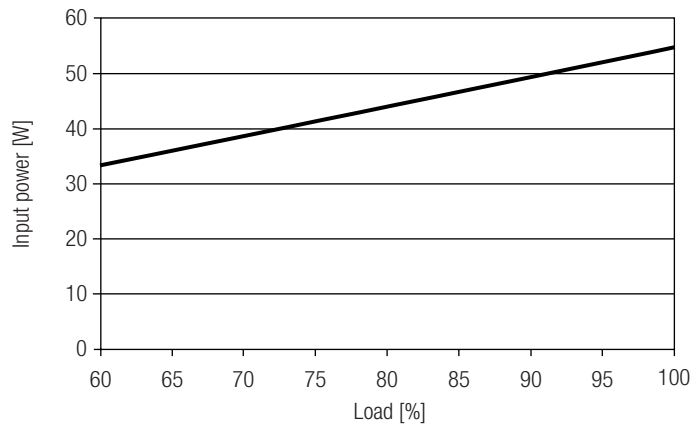
Efficiency vs load



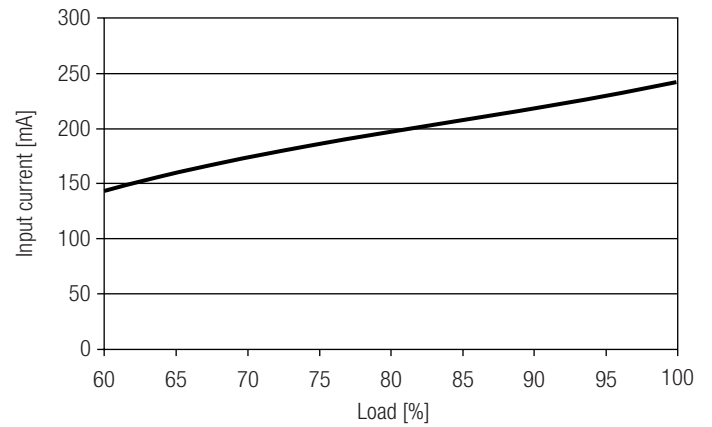
Power factor vs load



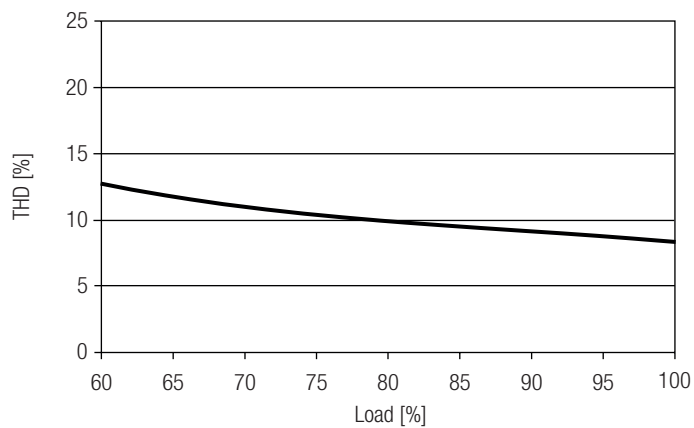
Input power vs load



Input current vs load

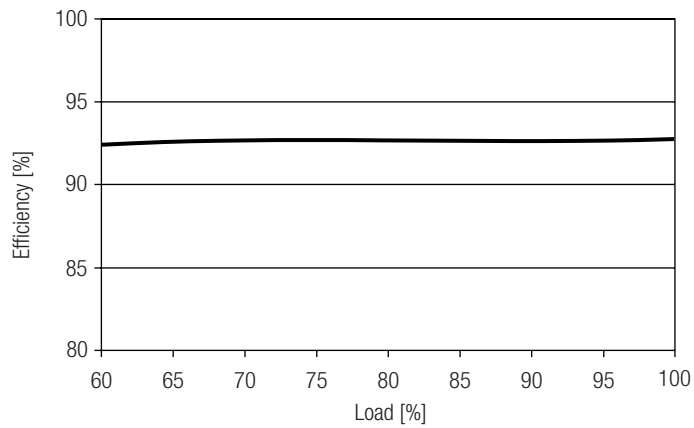


THD vs load

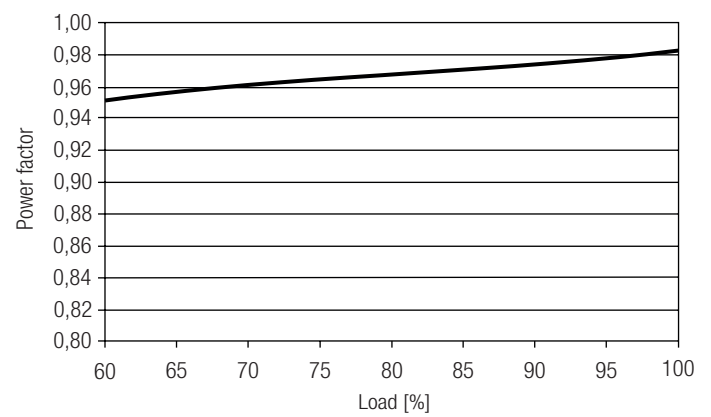


Diagrams LC 50W 300mA fixC Ip SNC

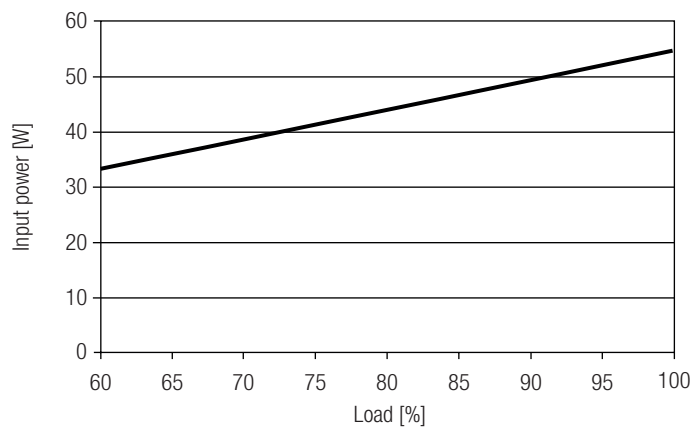
Efficiency vs load



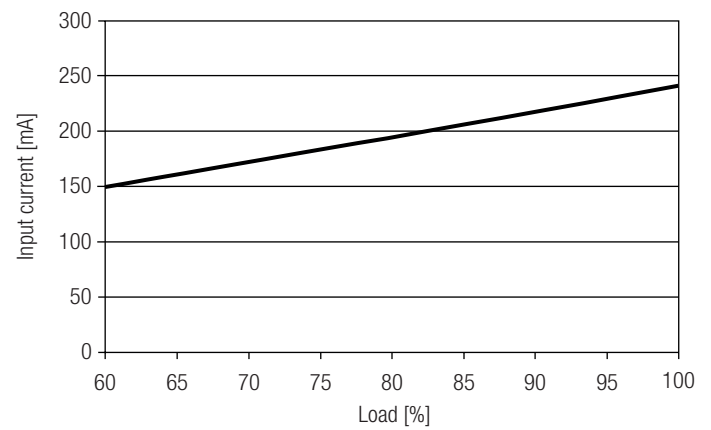
Power factor vs load



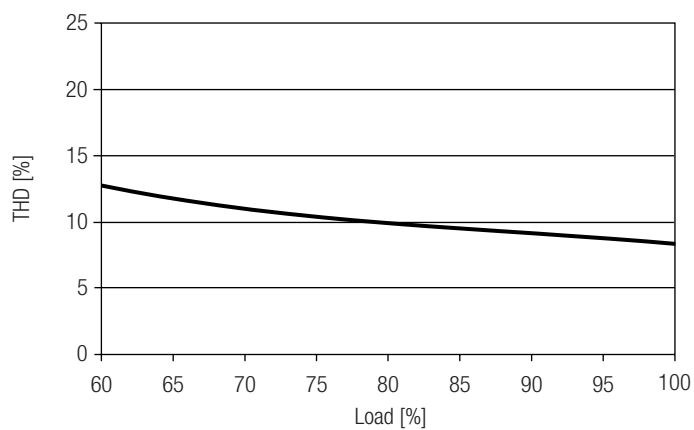
Input power vs load



Input current vs load

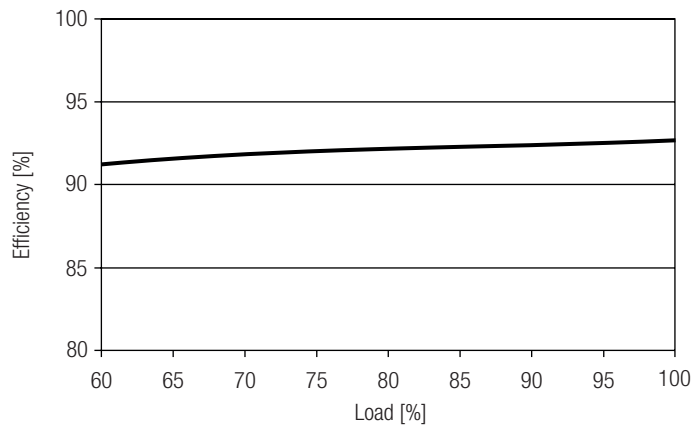


THD vs load

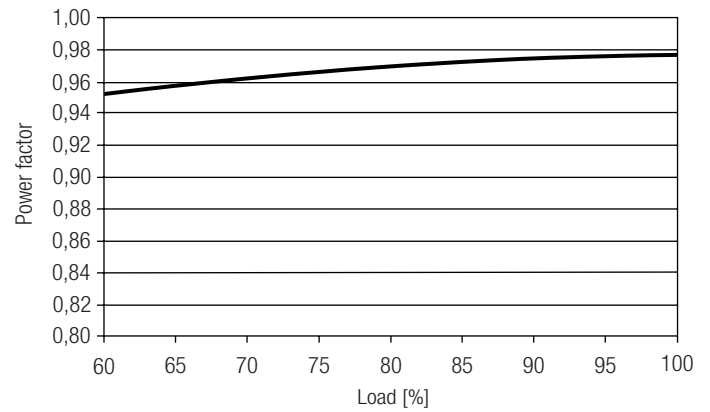


Diagrams LC 50W 350mA fixC Ip SNC

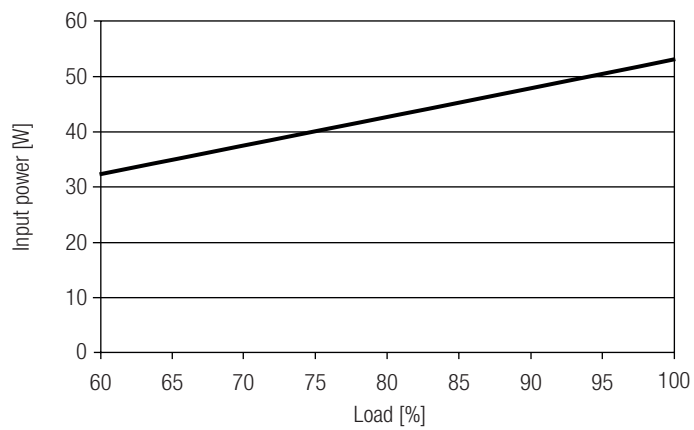
Efficiency vs load



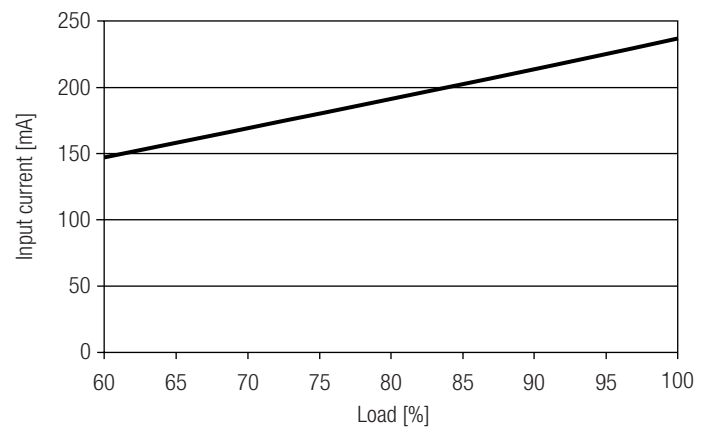
Power factor vs load



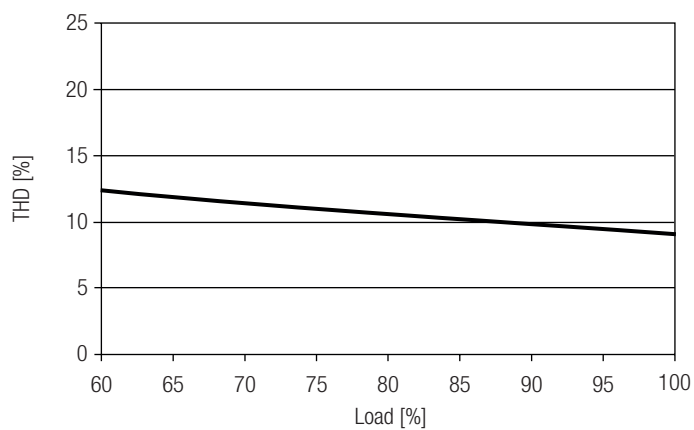
Input power vs load



Input current vs load

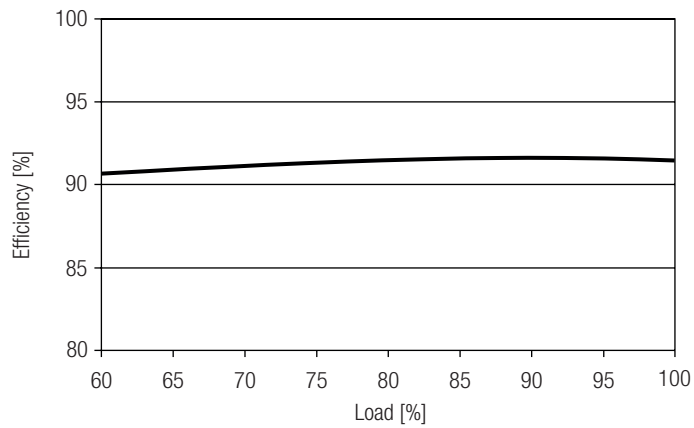


THD vs load

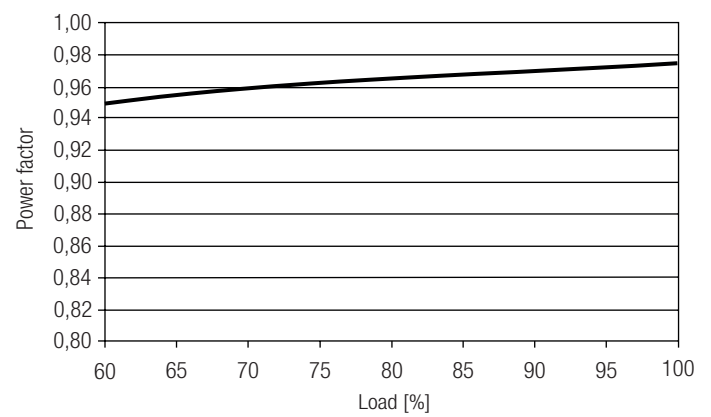


Diagrams LC 50W 700mA fixC Ip SNC

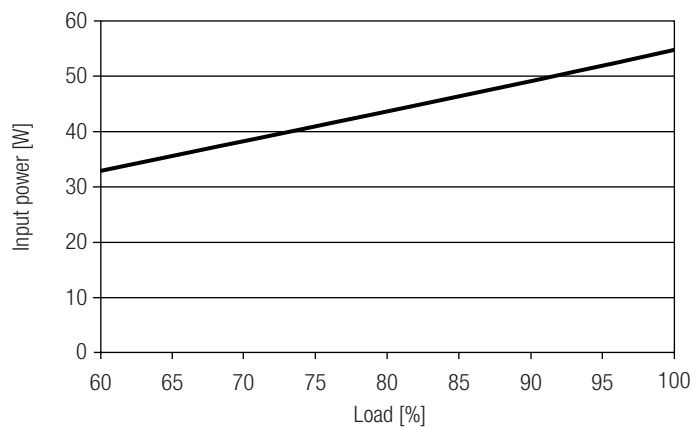
Efficiency vs load



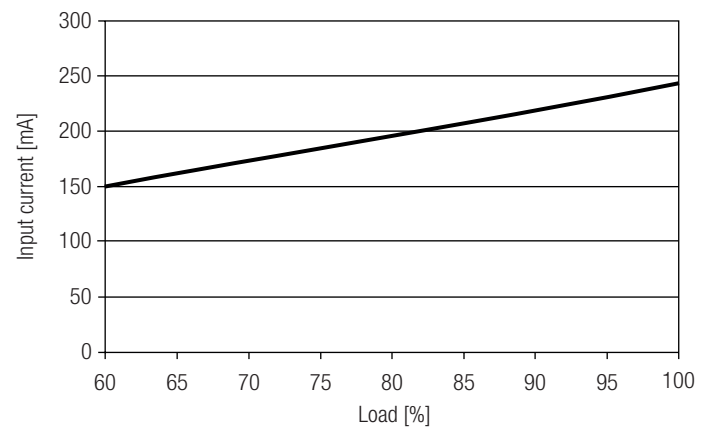
Power factor vs load



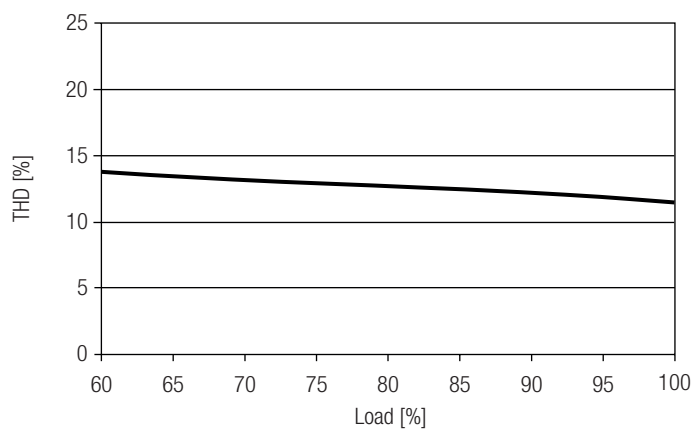
Input power vs load



Input current vs load

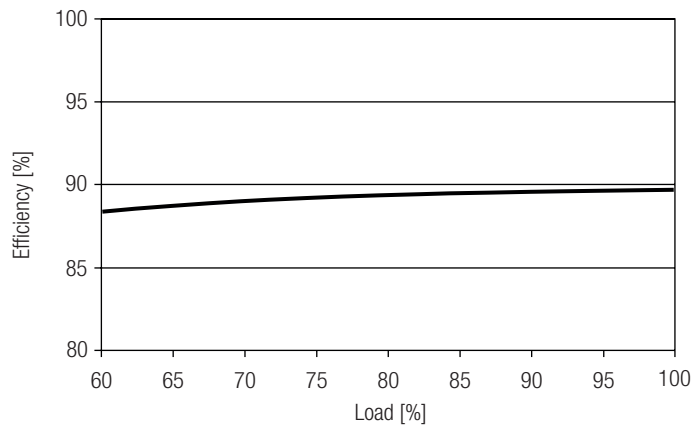


THD vs load

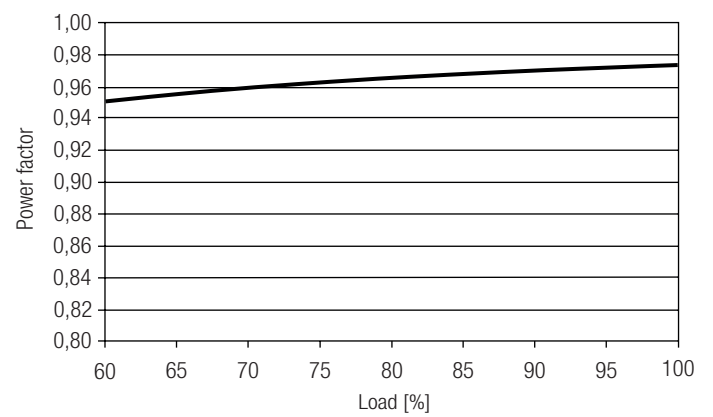


Diagrams LC 50W 1050mA fixC Ip SNC

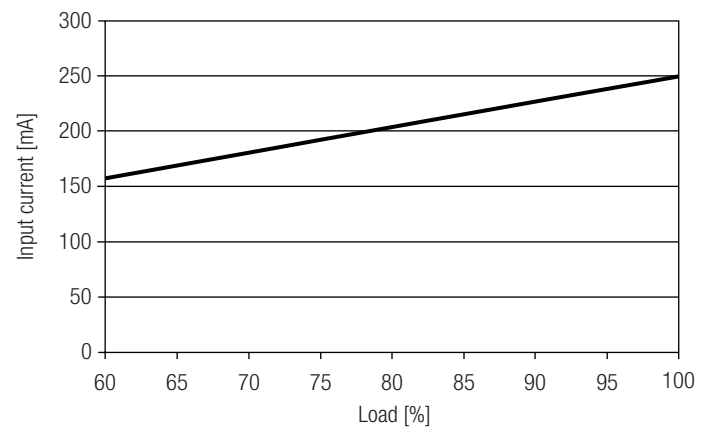
Efficiency vs load



Power factor vs load



Input current vs load



THD vs load

