



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

ESSENCE series

#### Product description

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

#### 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)



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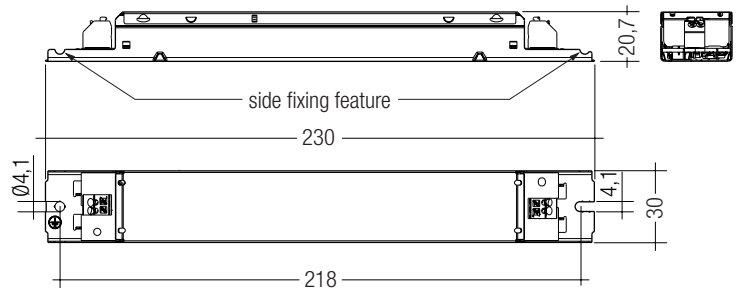
IP20

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

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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 <sup>®</sup>	± 7.5 %
Typ. current ripple (at 230 V, 50 Hz, full load)	± 30 %
Turn on 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
Dimensions L x W x H	230 x 30 x 21 mm
Hole spacing D	218 mm



#### Ordering data

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

#### Specific technical data

Type	Output current <sup>®</sup>	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 <sup>®</sup>	Efficiency at full load <sup>®</sup>	λ at min. load <sup>®</sup>	Efficiency at min. load <sup>®</sup>	Min. forward voltage <sup>®</sup>	Max. forward voltage <sup>®</sup>	Max. output voltage	Max. peak output current at full load <sup>®</sup>	Max. peak output current at min. load <sup>®</sup>	Max. casing temperature tc
<b>LC 50W 250mA fixC Ip SNC</b>	250 mA	0.242 A	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
<b>LC 50W 300mA fixC Ip SNC</b>	300 mA	0.242 A	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
<b>LC 50W 350mA fixC Ip SNC</b>	350 mA	0.242 A	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
<b>LC 50W 700mA fixC Ip SNC</b>	700 mA	0.242 A	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
<b>LC 50W 1050mA fixC Ip SNC</b>	1,050 mA	0.253 A	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

<sup>®</sup> Test result at 230 V, 50 Hz.

<sup>®</sup> The trend between min. and full load is linear.

<sup>®</sup> Output current is mean value.

<sup>®</sup> 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.

**Expected life-time**

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

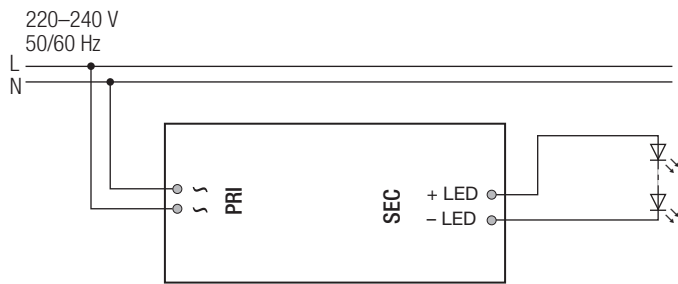
The LED Driver is designed for a life-time stated above under reference conditions and with a failure probability of less than 10 %.

**Maximum loading of automatic circuit breakers**

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current
Installation Ø	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	I <sub>max</sub> Time
<b>LC 50W 250mA fixC Ip SNC</b>	40	50	60	80	35	45	55	70	5 A 37 µs
<b>LC 50W 300mA fixC Ip SNC</b>	40	50	60	80	35	45	55	70	5 A 37 µs
<b>LC 50W 350mA fixC Ip SNC</b>	40	50	60	80	35	45	55	70	5 A 37 µs
<b>LC 50W 700mA fixC Ip SNC</b>	40	50	60	80	35	45	55	70	5 A 37 µs
<b>LC 50W 1050mA fixC Ip SNC</b>	40	50	60	80	35	45	55	70	5 A 37 µs

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

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

**Wiring diagram****Isolation 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 isolation test with 500 V<sub>DC</sub> for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal. The isolation 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<sub>AC</sub> (or 1.414 x 1500 V<sub>DC</sub>). To avoid damage to the electronic devices this test must not be conducted.

**Additional information**

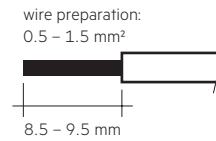
Additional technical information at [www.tridonic.com](http://www.tridonic.com) → Technical Data

Guarantee conditions at [www.tridonic.com](http://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 mm<sup>2</sup>. 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.

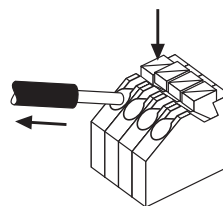
For Class I application, protection earth need to be connected with the metal housing (bottom part).

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 isolated.
- If the LED Driver housing is screwed on a plastic part inside the luminaires, the LED module need to be isolated.

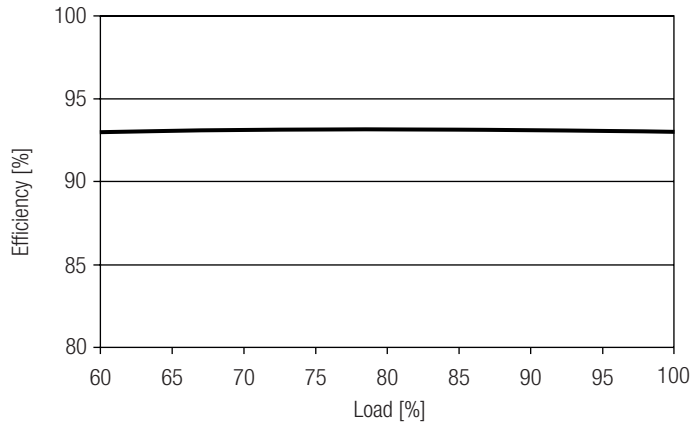
**Release of the wiring**

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

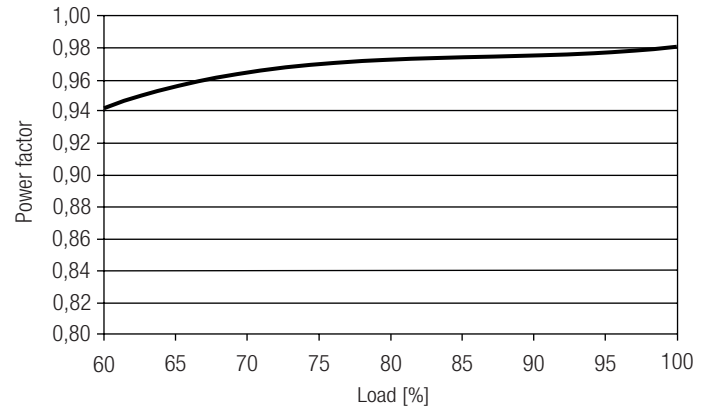


Diagrams LC 50W 250mA fixC Ip SNC

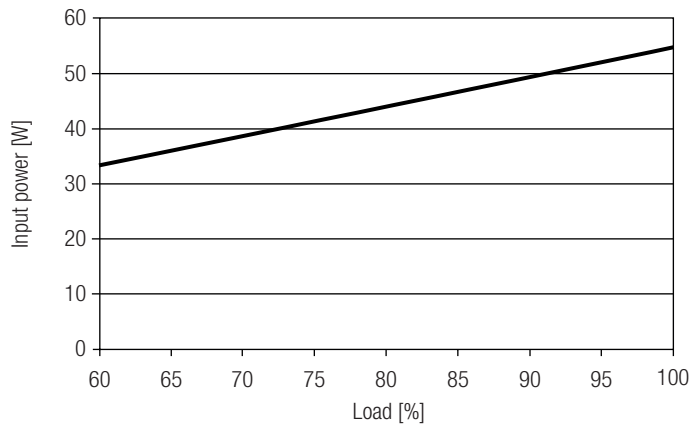
Efficiency vs load



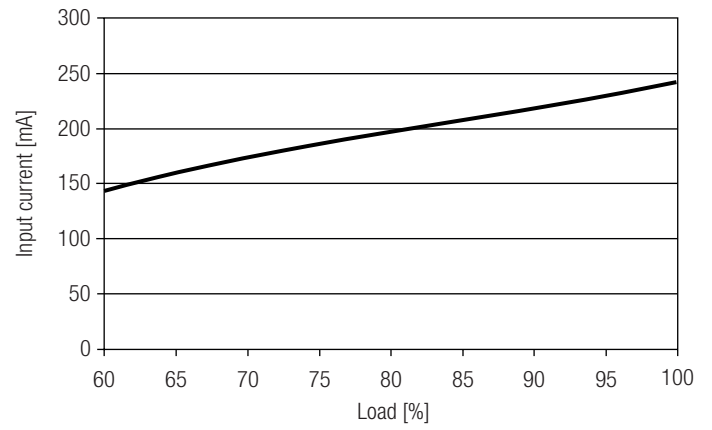
Power factor vs load



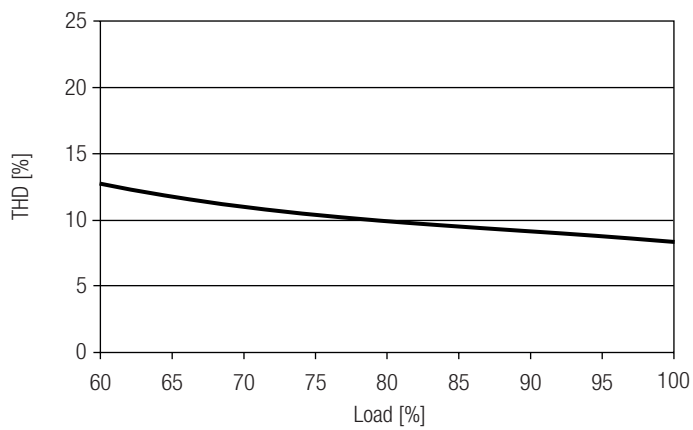
Input power vs load



Input current vs load

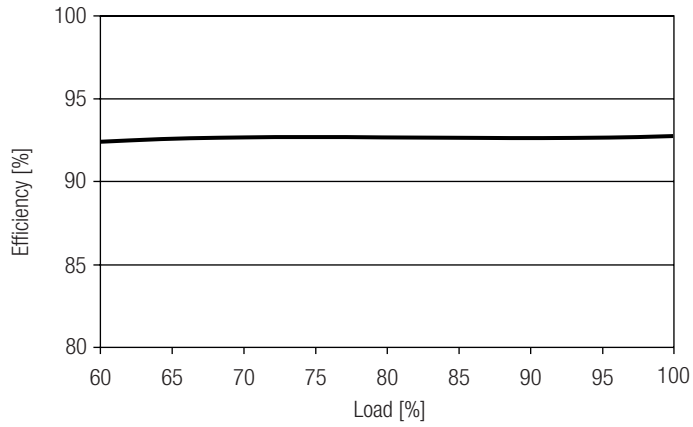


THD vs load

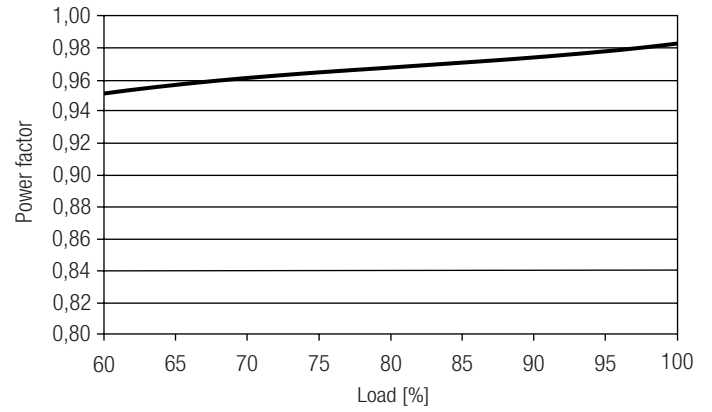


Diagrams LC 50W 300mA fixC Ip SNC

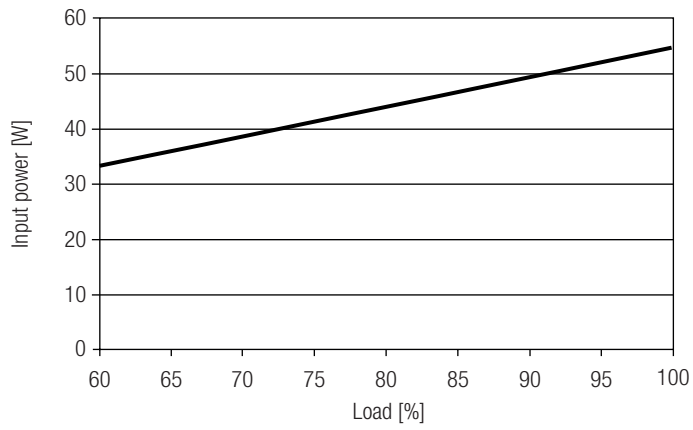
Efficiency vs load



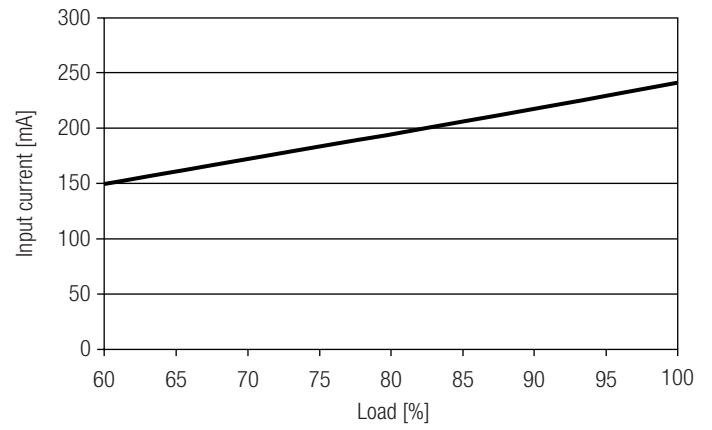
Power factor vs load



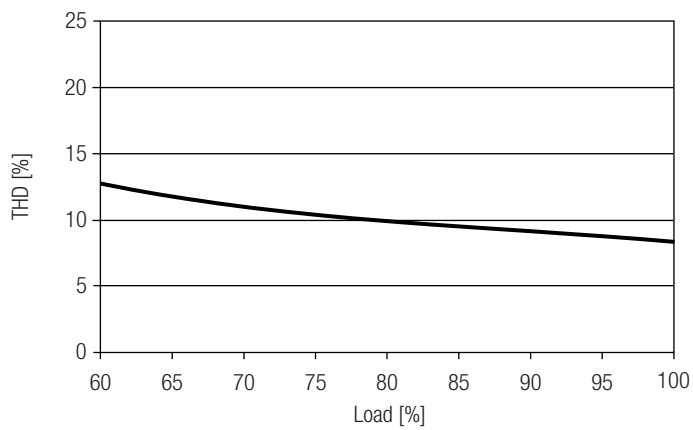
Input power vs load



Input current vs load

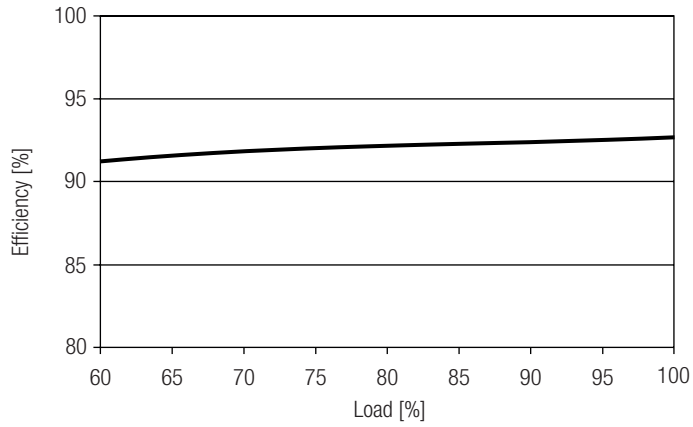


THD vs load

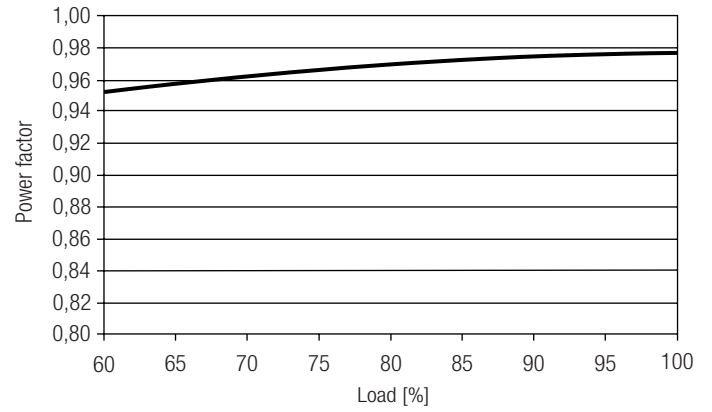


Diagrams LC 50W 350mA fixC Ip SNC

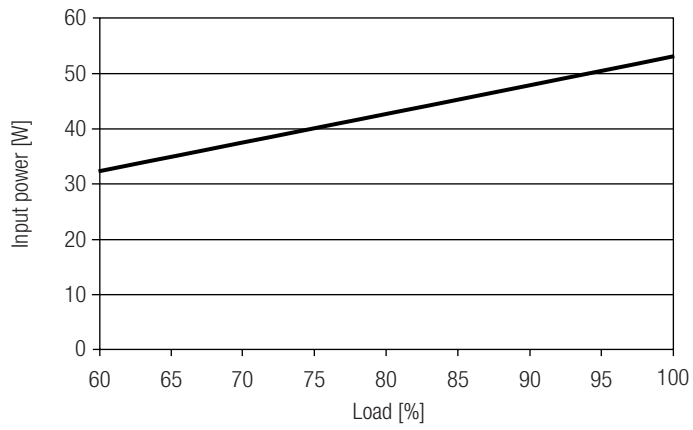
Efficiency vs load



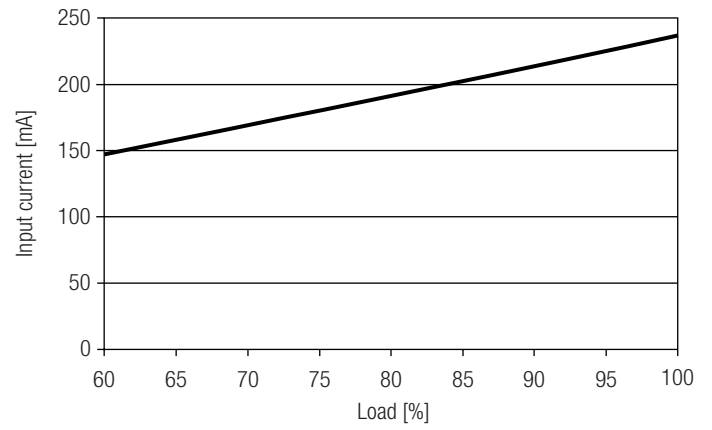
Power factor vs load



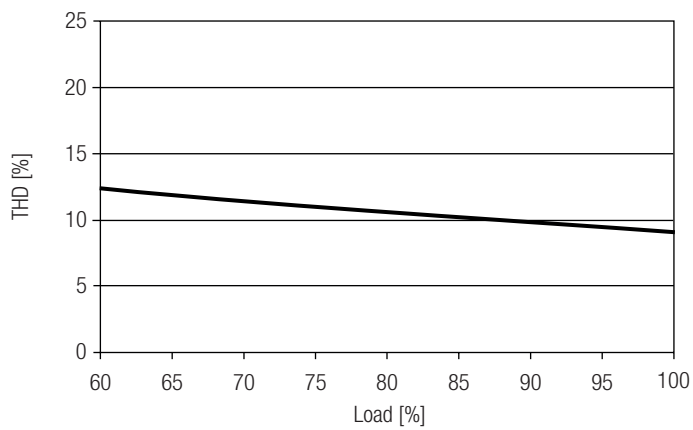
Input power vs load



Input current vs load

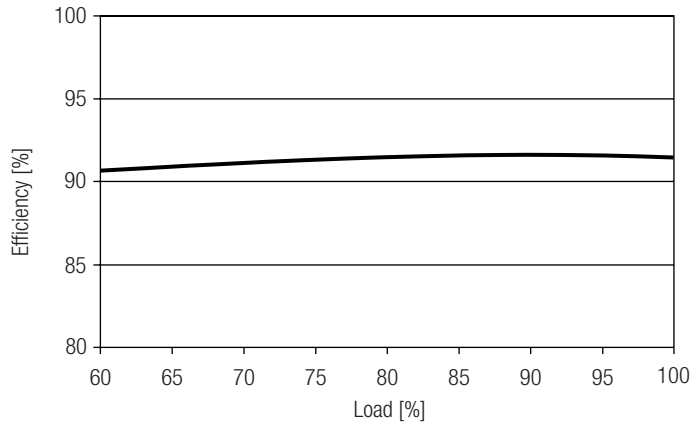


THD vs load

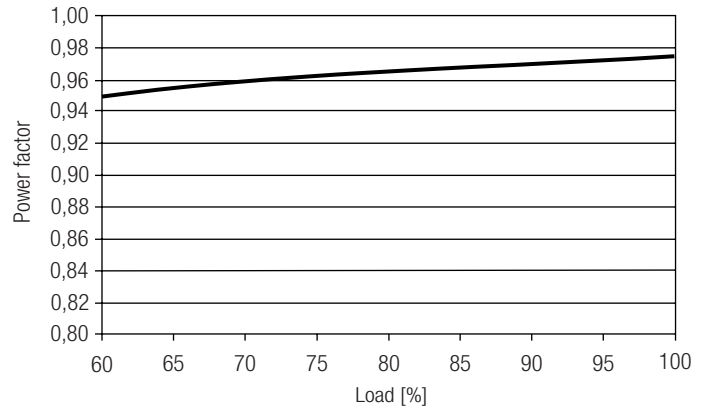


Diagrams LC 50W 700mA fixC Ip SNC

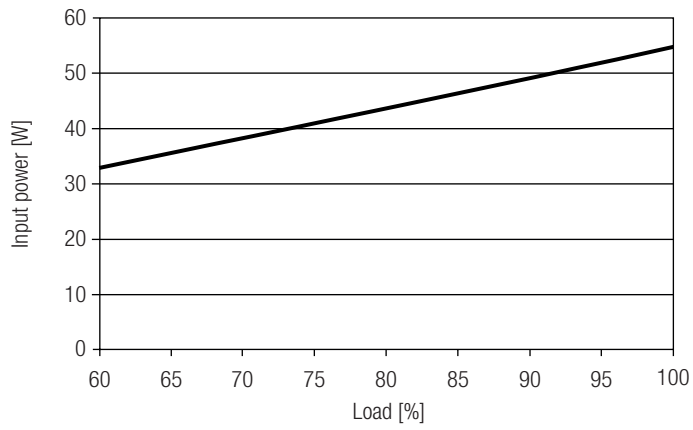
Efficiency vs load



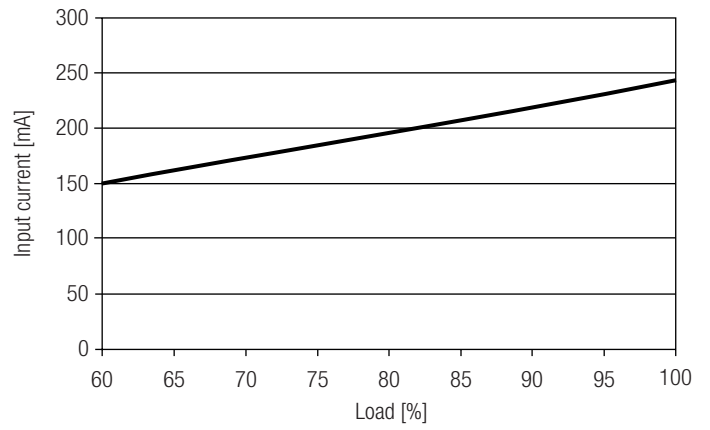
Power factor vs load



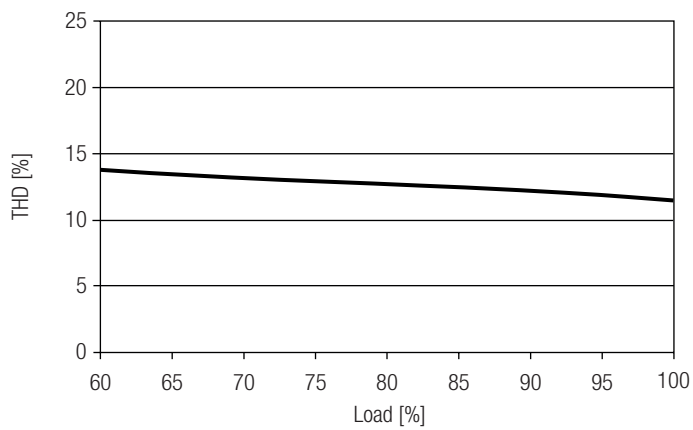
Input power vs load



Input current vs load



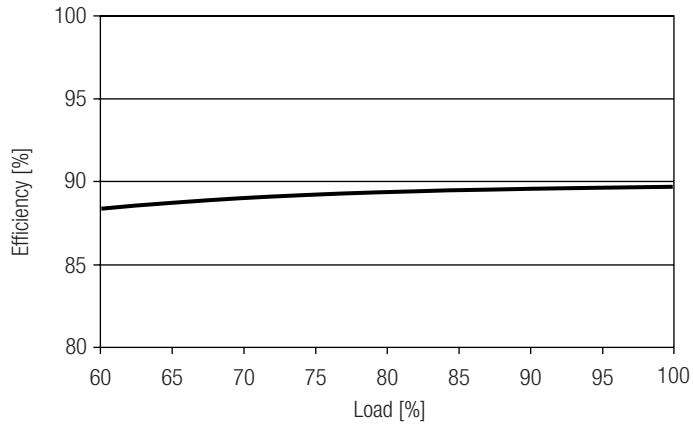
THD vs load



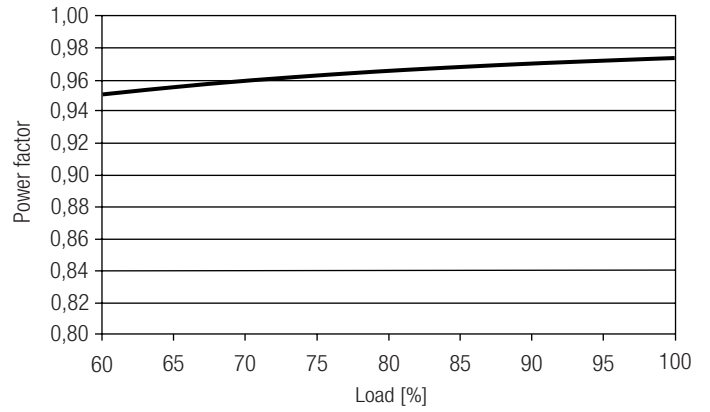


Diagrams LC 50W 1050mA fixC Ip SNC

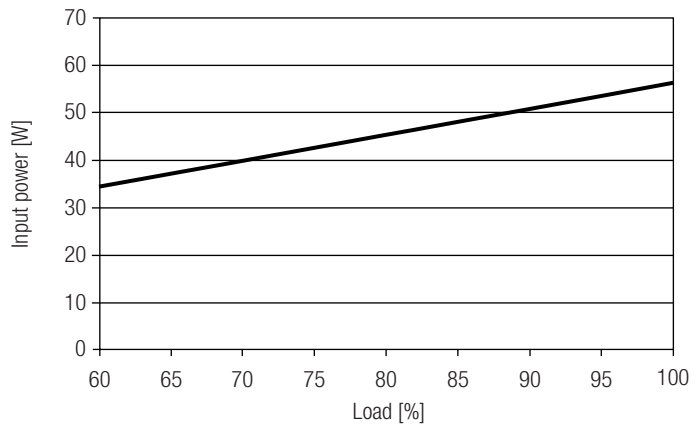
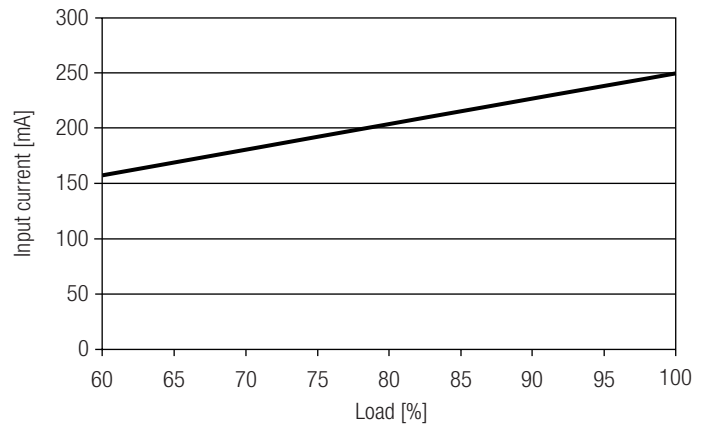
Efficiency vs load



Power factor vs load



Input current vs load



THD vs load

