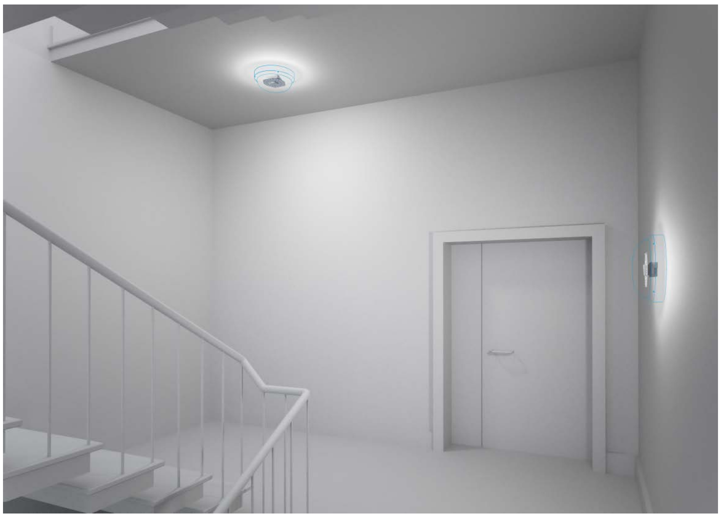
TRIDONIC

LED driver
Compact fixed output

Driver LC 25/30/35/40W 600/700/800/900mA fixC C ADV
advanced series



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 600, 700, 800 or 900 mA
- Max. output power 26.5, 31, 36 or 40.5 W
- Nominal lifetime up to 50,000 h
- 5 years guarantee (conditions at www.tridonic.com)

Housing properties

- Casing: polycarbonat, white
- Type of protection IP20

Functions

- Overtemperature protection
- 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 SELV RoHS

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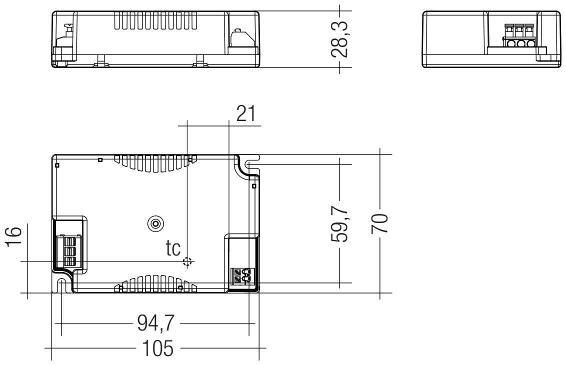


Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Mains frequency	50 / 60 Hz
Overvoltage protection	320 V AC, 1 h
THD (at 230 V, 50 Hz, full load)	< 20 %
Output current tolerance[3]	± 7.5 %
Typ. current ripple (at 230 V, 50 Hz, full load)	± 5 %
Output P_{st}^{LM} (at full load)	≤ 1
Output SVM (at full load)	≤ 0.4
Max. output voltage	60 V
Starting time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.2 s
Hold on time at power failure (output)	0 s
Ambient temperature ta	-20 ... +50 °C
Ambient temperature ta (at lifetime 50,000 h)	40 °C
Storage temperature ts	-40 ... +80 °C
Lifetime	up to 50,000 h
Guarantee (conditions at www.tridonic.com)	5 years
Dimensions L x W x H	105 x 70 x 28.3 mm

Ordering data

Type	Article number	Packaging, carton	Packaging, pallet	Weight per pc.
LC 25W 600mA fixC C ADV	**28002490**	15 pc(s).	2,700 pc(s).	0.142 kg
LC 30W 700mA fixC C ADV	**28002491**	15 pc(s).	2,700 pc(s).	0.144 kg
LC 35W 800mA fixC C ADV	**28002492**	15 pc(s).	2,700 pc(s).	0.146 kg
LC 40W 900mA fixC C ADV	**28002493**	15 pc(s).	2,700 pc(s).	0.148 kg

Specific technical data

Type	Output current[3]	Input current (at 230 V, 50 Hz, full load)	Input power (at 230 V, 50 Hz, full load)	Output power range	λ at full load[1]	Efficiency at full load[1]	λ at min. load[1]	Efficiency at min. load[1]	Min. forward voltage	Max. forward voltage	Max. output peak current at full load[2]	Max. output peak current at min. load[2]	Max. casing temperature tc
LC 25W 600mA fixC C ADV	600 mA	0.133 A	30.0 W	13.0 – 26.5 W	0.95	88 %	0.9C	81 %	21.4 V	44 V	774 mA	900 mA	65 °C
LC 30W 700mA fixC C ADV	700 mA	0.153 A	34.3 W	15.0 – 31.0 W	0.95	88 %	0.9C	82 %	21.4 V	44 V	903 mA	1,000 mA	65 °C
LC 35W 800mA fixC C ADV	800 mA	0.181 A	40.0 W	20.0 – 36.0 W	0.95	89 %	0.9C	83 %	25.0 V	45 V	1,032 mA	1,100 mA	70 °C
LC 40W 900mA fixC C ADV	900 mA	0.210 A	45.3 W	22.5 – 40.5 W	0.95	89 %	0.9C	83 %	25.0 V	45 V	1,161 mA	1,200 mA	70 °C

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

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

[3] 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 or in burst modus. After elimination of the overload the nominal operation is restored automatically.

Overtemperature protection
The LED driver will reduces the LED output current or in burst working.

Short-circuit behaviour
In case of a short circuit on the secondary side (LED) the LED driver switched off. 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 limit output voltage which allows the application to be able to work safely when LED string opens due to a failure.

Output over voltage protection
The LED driver will work in burst protection mode to limit output voltage even in single fault condition.

Housing fulfils requirements for reinforced insulation according EN 60598-1.

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

Installation instructions
The LED module and all contact points within the wiring must be sufficiently insulated against 1 kV surge voltage.
Air and creepage distance 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.

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 lifetime

Type	ta	40 °C	50 °C	60 °C
LC 25/30W 600/700mA fixC C ADV	tc	55 °C	65 °C	x
	Lifetime	50,000 h	30,000 h	x
LC 35/40W 800/900mA fixC C ADV	tc	60 °C	70 °C	x
	Lifetime	50,000 h	30,000 h	x

The LED drivers are designed for a lifetime 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

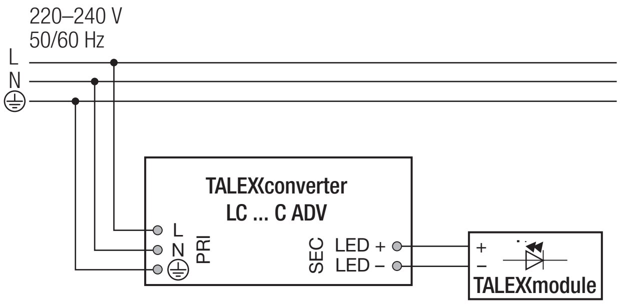
Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation Ø	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	I_{max}	Time
LC 25W 600mA fixC C ADV	20	32	40	51	11	19	24	30	20 A	200 µs
LC 30W 700mA fixC C ADV	20	32	40	51	11	19	24	30	20 A	200 µs
LC 35W 800mA fixC C ADV	20	32	40	51	11	19	24	30	25 A	200 µs
LC 40W 900mA fixC C ADV	20	32	40	51	11	19	24	30	25 A	200 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.
LC 25W 600mA fixC C ADV	< 9	< 6	< 3	< 3	< 3	< 3
LC 30W 700mA fixC C ADV	< 10	< 8	< 3	< 3	< 3	< 3
LC 35W 800mA fixC C ADV	< 8	< 5	< 3	< 3	< 3	< 3
LC 40W 900mA fixC C ADV	< 8	< 5	< 3	< 3	< 3	< 3

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

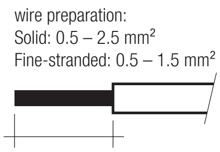
Additional technical information at www.tridonic.com → Technical Data

Lifetime declarations are informative and represent no warranty claim.
No warranty if device was opened.

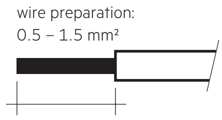
Wiring type and cross section
The input wiring can be stranded wires with ferrules with a cross section of 0.5 – 1.5 mm² or with solid wires with a cross section of 0.5 – 2.5 mm².
Strip 9 – 10 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

The output wiring can be done 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.

Input wiring

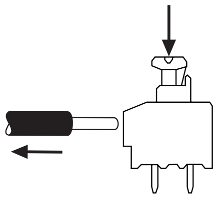


Output wiring

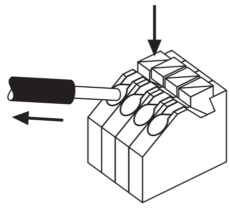


Release of the wiring
Press down the "push button" and remove the cable from front.

Input terminal



Output terminal



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.
- Secondary switching is not permitted.
- Incorrect wiring can demage 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.).

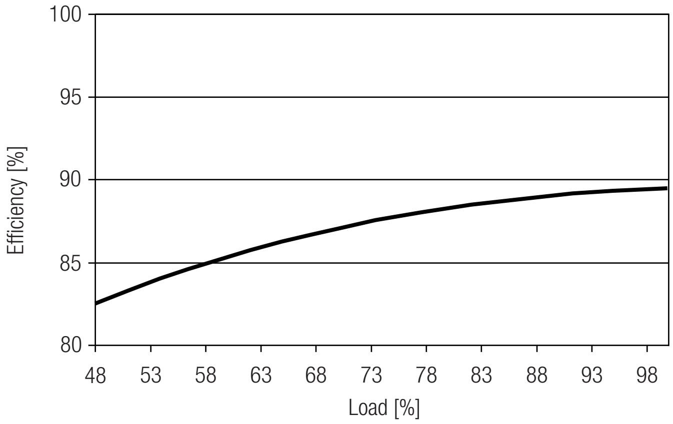
Earth connection
The earth connection is conducted as protection earth (PE). If the LED driver will be earthed, protection earth (PE) has to be used.
There is no earth connection required for the functionality of the LED driver.
Earth connection is recommended to improve following behaviour.

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

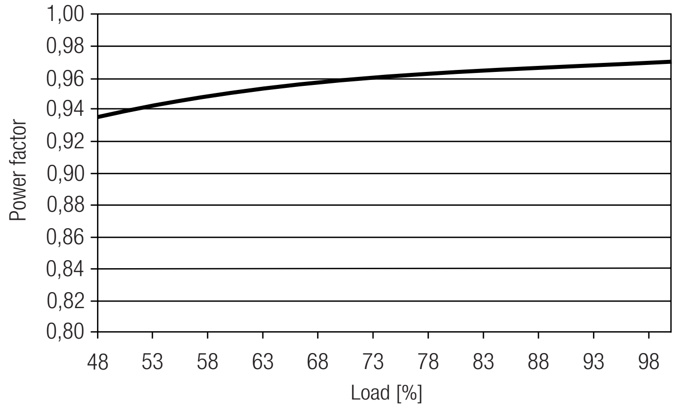
In general it is recommended to earth the LED driver if the LED module is mounted on earthed luminaire parts respectively heat sinks and thereby representing a high capacity against earth.

Diagrams LC 25W 600mA fixC C ADV at 230 V / 50 Hz

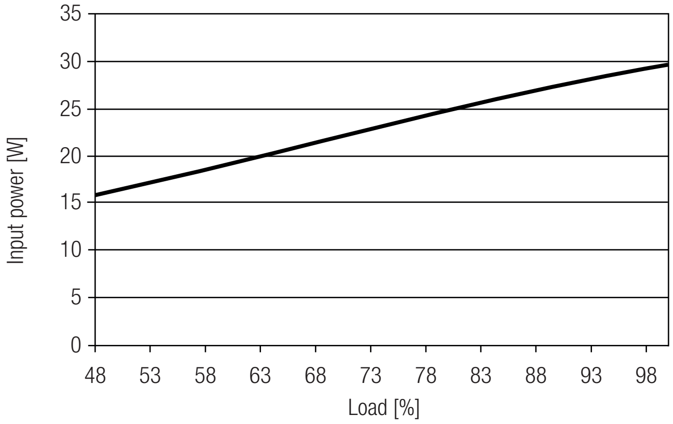
Efficiency vs load



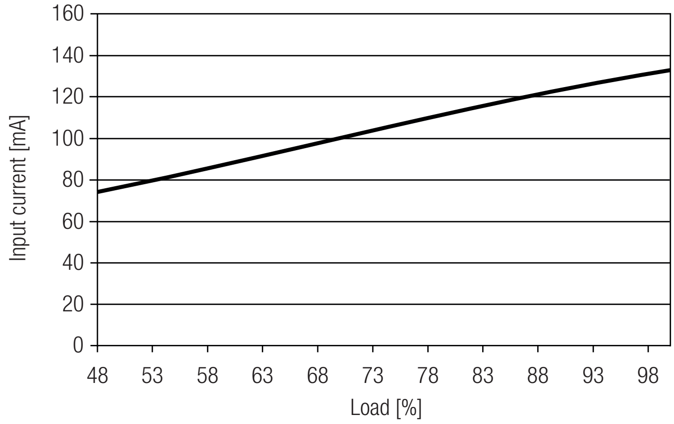
Power factor vs load



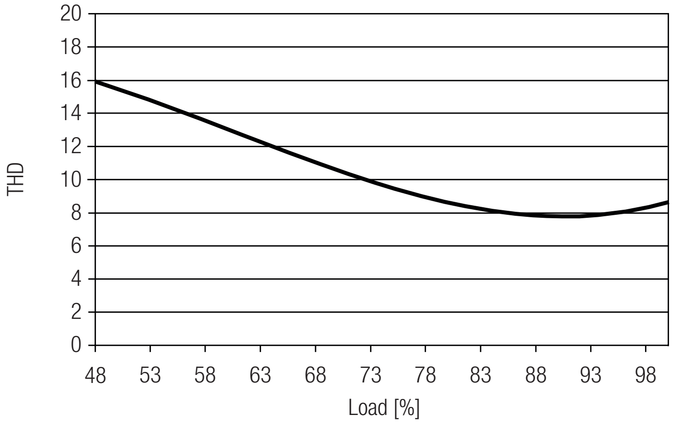
Input power vs load



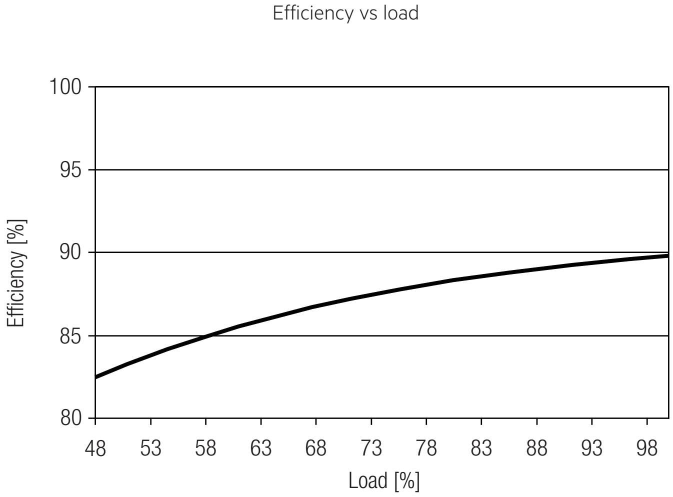
Input current vs load

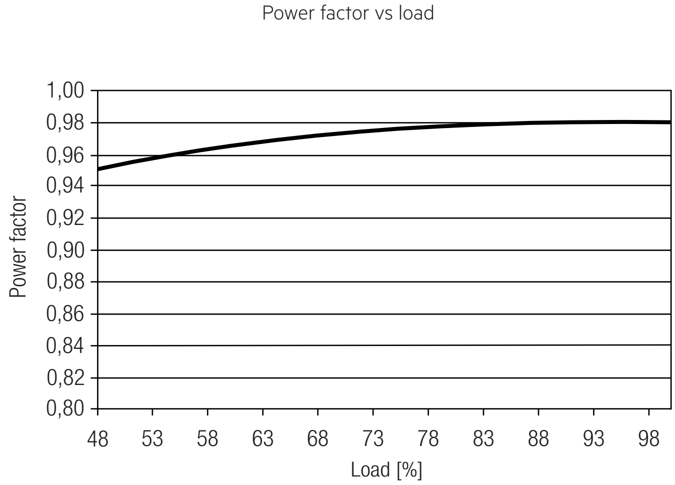


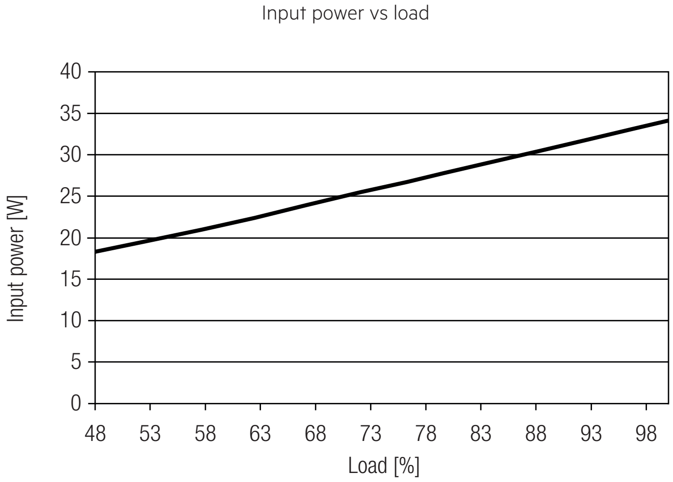
THD vs load

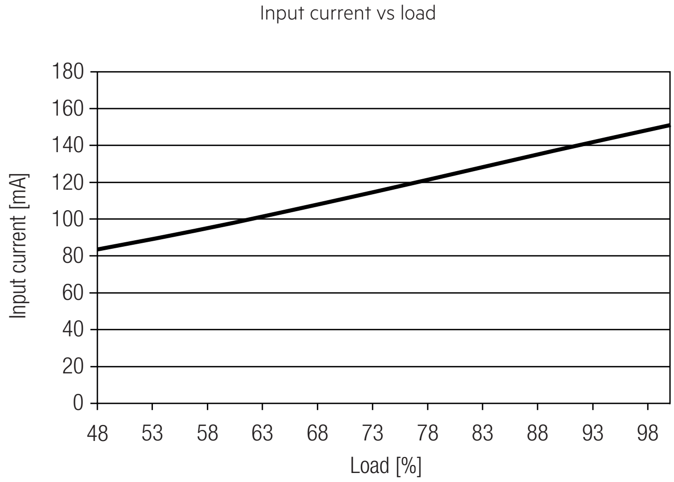


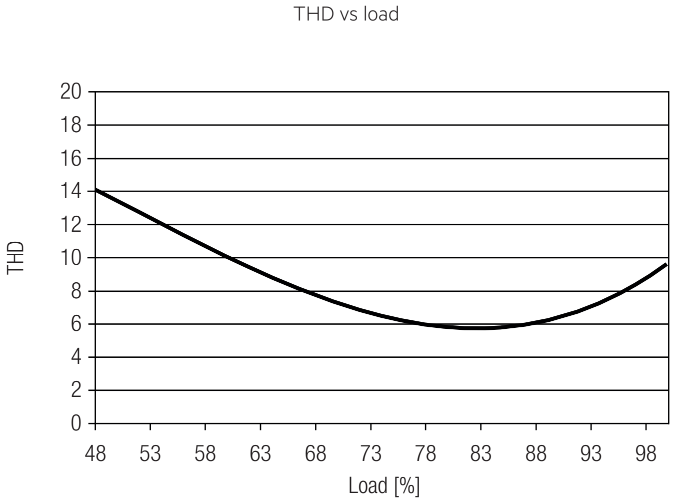
Diagrams LC 30W 700mA fixC C ADV at 230 V / 50 Hz





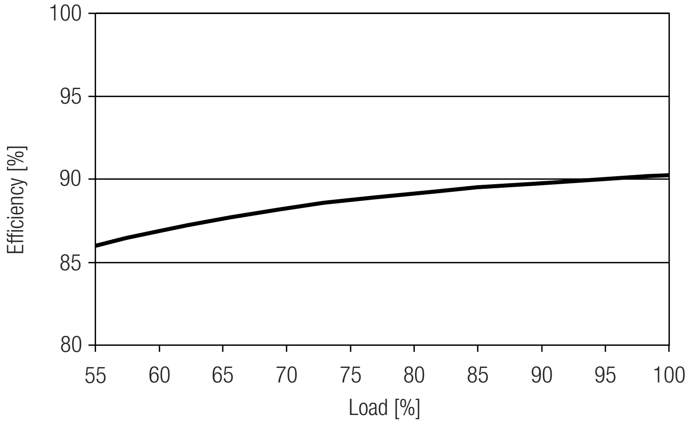




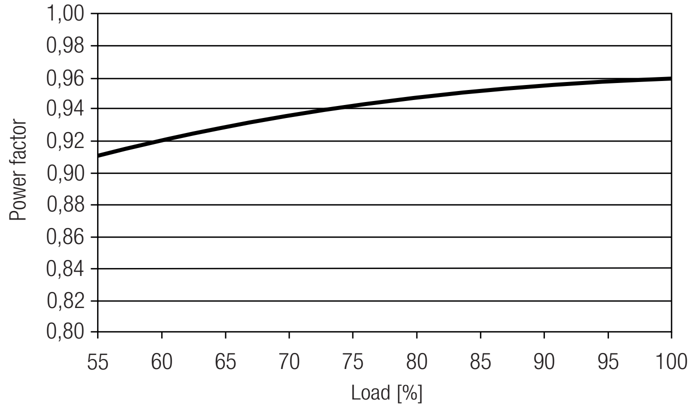


Diagrams LC 35W 800mA fixC C ADV at 230 V / 50 Hz

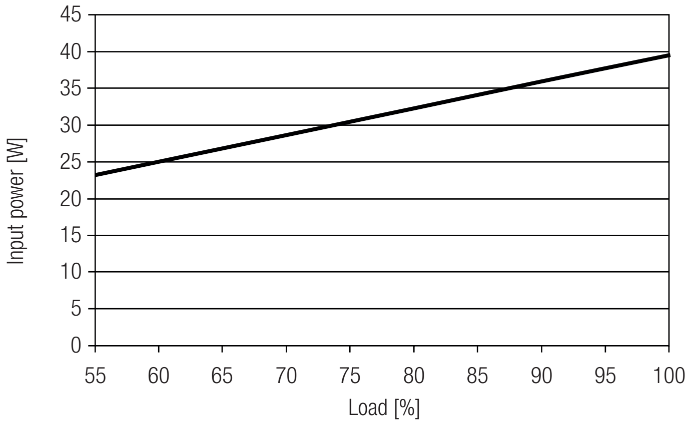
Efficiency vs load



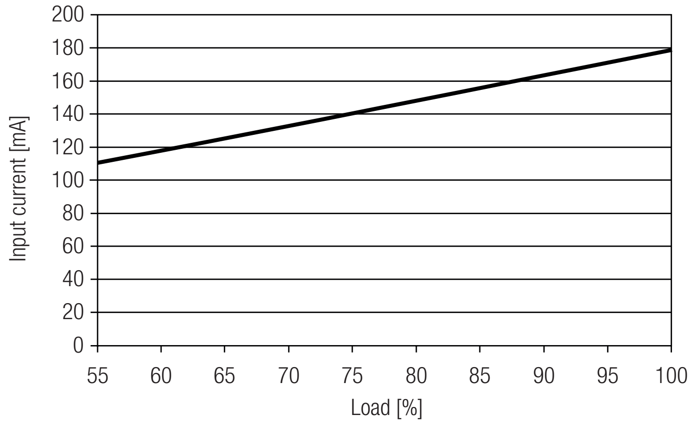
Power factor vs load



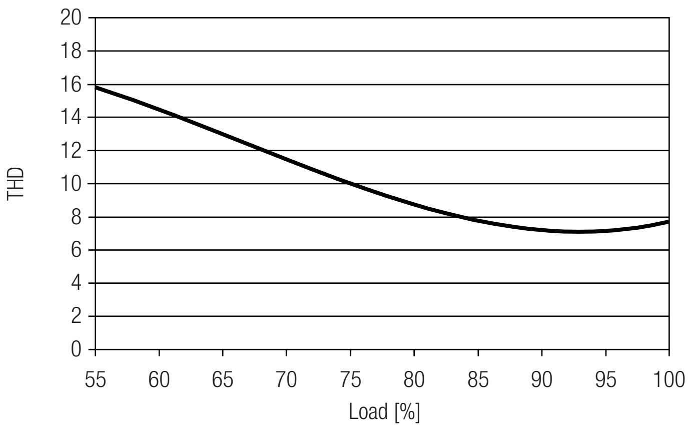
Input power vs load



Input current vs load

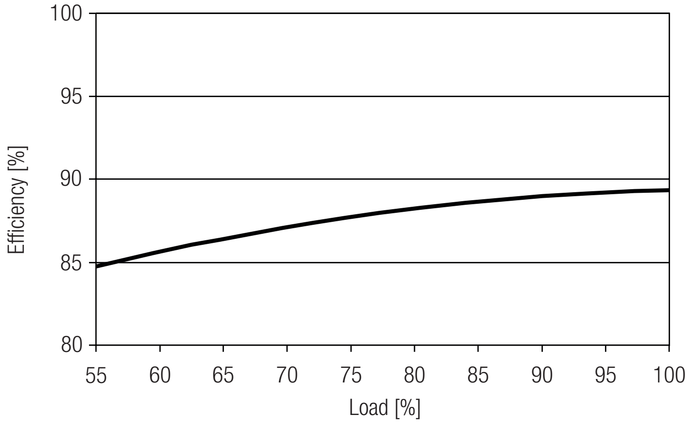


THD vs load

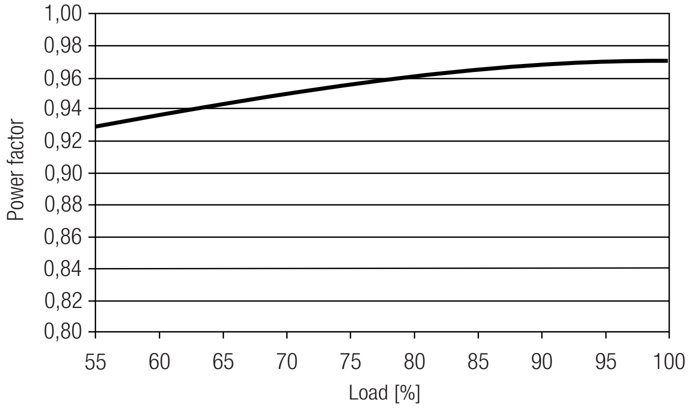


Diagrams LC 40W 900mA fixC C ADV at 230 V / 50 Hz

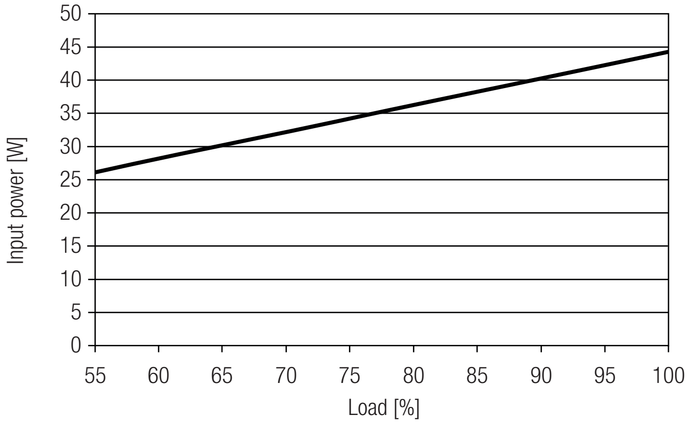
Efficiency vs load



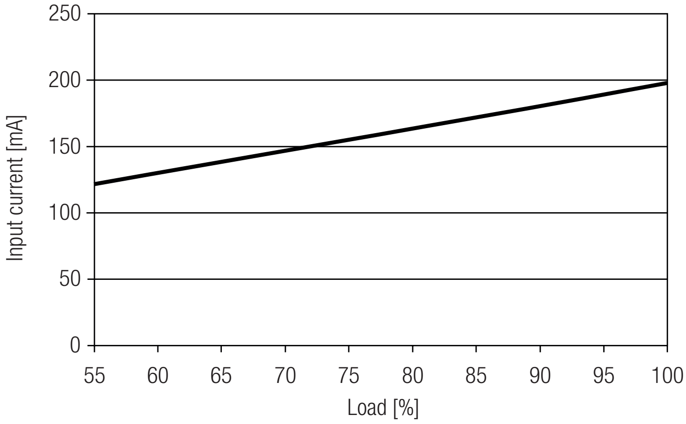
Power factor vs load



Input power vs load



Input current vs load



THD vs load