KACO new energy.

Data sheet

blueplanet
3.0 TL1 | 3.5 TL1
3.7 TL1 | 4.0 TL1
4.6 TL1 | 5.0 TL1

Small system? Big convenience. Highest yields!

The transformerless string inverters blueplanet 3.0 TL1 to 5.0 TL1.

Newly developed, and, constructed from scratch, the blueplanet TL1 fulfil each and every requirement expected of modern solar PV inverters for use in residential PV systems: they are light and can be installed quickly; all essential technical features are included in the price; reliable operation and yields are guaranteed.

The finely-differentiated output of the blueplanet TL1 ranges from 3.0 to 5.0 kVA, so that even operators of the smallest PV systems will find the right inverter. The gradation of the output power therefore takes into consideration all current output limits stipulated in European network access provisions.

A wide voltage range starts at as little as 125 V and goes up to 550 V which allows for a multitude of string designs. Having 2 MPP trackers, which can each process the whole AC power, system layout is now a breeze (blueplanet 3.0 TL1 also available with 1 MPPT). Angled roofs or sub-arrays with different orientations? That is no problem for the flexible blueplanet TL1 inverters.

With their low weight, they are almost fun to mount. Using plug-in connectors on the DC and on the AC side, they are just as quickly connected as they are mounted. The inverters incorporate a small, maintenance-free, interior cooler (the blueplanet 3.0 TL1 is fanless!) which achieves uniform cooling without taking in ambient air. That means that the blueplanet TL1 is left completely free to achieve maximum output.

The standard incorporation of RS485, Ethernet and USB ensures elegant communication and convenient monitoring – even more interfaces are optionally available. In order to assure perfect link-up, the inverters have the same integrated data logger and web server as their 3-phase siblings. For commissioning and checking on the current operating data, they also feature the same easy-to-use, clearly laid out, graphical display. An extension module with 4 digital inputs allows performance targets sent by the grid operator via ripple control receiver to be put into action by the inverters themselves; this does away with an intermediate data logger. Please find more information about the extension module on our website.

If you want to use your self-generated solar power in your own home, the blueplanet TL1 also come with our Priwatt function for managing self-consumption.

Your declaration of solar independence becomes complete when you use an intelligent energy storage system; it allows you to use your own clean energy whenever you want to. Fitted with a blueplanet TL1, your private solar power plant can be upgraded with a storage system at any time. And, our blueplanet gridsave eco 5.0 TR1 battery inverter will take care of the energy management of your PV storage system too. Anything less would be a thing of the past!

Technical data

blueplanet 3.0 TL1 | 3.5 TL1 | 3.7 TL1 | 4.0 TL1 | 4.6 TL1 | 5.0 TL1

Electrical data	3.0 TL1 M1	3.0 TL1	3.5 TL1	3.7 TL1	4.0 TL1	4.6 TL1	5.0 TL1
DC input							
MPP range@Pnom	280 V … 510 V	140 V … 510 V	165 V … 510 V	170 V … 510 V	185 V … 510 V	215 V … 510 V	235 V … 510 V
Operating range	125 V - 550 V	125 V - 550 V	125 V - 550 V	125 V - 550 V	125 V - 550 V	125 V - 550 V	125 V - 550 V
Min. DC voltage/starting voltage	125 V/150 V	125 V/150 V	125 V/150 V	125 V / 150 V	125 V / 150 V	125 V / 150 V	125 V / 150 V
No-load voltage	600 V [1]	600 V [1]	600 V [1]	600 V [1]	600 V [1]	600 V [1]	600 V [1]
Max. input current	1 x 11,0 A	2 x 11,0 A	2 x 11.0 A	2 x 11.0 A	2 x 11.0 A	2 x 11.0 A	2 x 11.0 A
Number of MPP trackers	1	2	2	2	2	2	2
Max. power/tracker	3.1 kW	3.1 kW	3.6 kW	3.8 kW	4.1 kW	4.7 kW	5.1 kW
Number of strings	1	2	2	2	2	2	2
AC output							
Rated output	3 000 VA	3 000 VA	3 450 VA	3 680 VA	4 000 VA	4 600 VA	5 000 VA
Supply voltage	230 V (1/N/PE)	230 V (1/N/PE)	230 V (1/N/PE)	230 V (1/N/PE)	230 V (1/N/PE)	230 V (1/N/PE)	230 V (1/N/PE)
Rated current	13.0 A	13.0 A	15.0 A	16.0 A	17.5 A	20.0 A	21.7 A
Rated frequency	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
cos phi	0.30 inductive … 0.30 capacitive	0.30 inductive … 0.30 capacitive	0.30 inductive … 0.30 capacitive	0.30 inductive … 0.30 capacitive	0.30 inductive … 0.30 capacitive	0.30 inductive … 0.30 capacitive	0.30 inductive … 0.30 capacitive
Number of grid phases	1	1	1	1	1	1	1
General electrical data							
Max. efficiency	97.2 %	97.2 %	97.2 %	97.2 %	97.2 %	97.2 %	97.2 %
Europ. efficiency	96.5 %	96.5 %	96.4 %	97.9 %	97.9 %	96.7 %	96.6 %
Night consumption	3 W	3 W	3 W	3 W	3 W	3 W	3 W
Circuitry topology	transformerless	transformerless	transformerless	transformerless	transformerless	transformerless	transformerless
Mechanical data							
Display	graphical display + LEDs	graphical display + LEDs	graphical display + LEDs	graphical display + LEDs	graphical display + LEDs	graphical display + LEDs	graphical display + LEDs
Control units	4-way navigation + 2 buttons	4-way navigation + 2 buttons	4-way navigation + 2 buttons	4-way navigation + 2 buttons	4-way navigation + 2 buttons	4-way navigation + 2 buttons	4-way navigation + 2 buttons
Interfaces	standard: 2 x Ethernet, USB, RS485, Error relay optional: 4-DI	standard: 2 x Ethernet, USB, RS485, Error relay optional: 4-DI	standard: 2 x Ethernet, USB, RS485, Error relay optional: 4-DI	standard: 2 x Ethernet, USB, RS485 Error relay optional: 4-DI	standard: 2 x Ethernet, USB, RS485 Error relay optional: 4-DI	standard: 2 x Ethernet, USB, RS485 Error relay optional: 4-DI	standard: 2 x Ethernet, USB, RS485 Error relay optional: 4-DI
Fault signalling relay	potential-free NOC max. 30 V/1 A	potential-free NOC max. 30 V/1 A	potential-free NOC max. 30 V/1 A	potential-free NOC max. 30 V/1 A	potential-free NOC max. 30 V/1 A	potential-free NOC max. 30 V/1 A	potential-free NOC max. 30 V/1 A
Connections	DC: SUNCLIX AC: connection plug	DC: SUNCLIX AC: connection plug	DC: SUNCLIX AC: connection plug	DC: SUNCLIX AC: connection plug	DC: SUNCLIX AC: connection plug	DC: SUNCLIX AC: connection plug	DC: SUNCLIX AC: connection plug
Ambient temperature	-25 °C … +60 °C [2]	-25 °C … +60 °C [2]	-25 °C … +60 °C [2]	-25 °C … +60 °C [2]	-25 °C … +60 °C [2]	-25 °C … +60 °C [2]	-25 °C … +60 °C [2]
Cooling	natural convection	natural convection	natural convection	maintenance-free interior fan	maintenance-free interior fan	maintenance-free interior fan	maintenance-free interior fan
Protection class	IP54	IP54	IP54	IP54	IP54	IP54	IP54
Noise emission	< 35 dB(A)	< 35 dB(A)	< 35 dB (A)	< 35 dB(A)	< 35 dB(A)	< 35 dB(A)	< 35 dB(A)
DC switch	integrated	integrated	integrated	integrated	integrated	integrated	integrated
Casing	innovative ASA/PC casting	innovative ASA/PC casting	innovative ASA/PC casting	innovative ASA/PC casting	innovative ASA/PC casting	innovative ASA / PC casting	innovative ASA / PC casting
H x W x D	560 x 367 x 227 mm	560 x 367 x 227 mm	560 x 367 x 227 mm	560 x 367 x 227 mm	560 x 367 x 227 mm	560 x 367 x 227 mm	560 x 367 x 227 mm
Weight	15 kg	16.5 kg	18 kg	18 kg	18 kg	18 kg	18 kg
Certifications							
Saftey	EN 61000-6-1/-2/-3, IEC 62109-1/ -2			EN 61000-6-1/-2/-3, IEC 62109-1/ -2			
Grid compliance	VDE-AR-N 4105, VDE0126-1-1, ÖVE/ÖNORM E 8001, UTE C 15-712-1, G83-2, G59/3, CEI-021, EN 50438, C10/11, ... for more see homepage/download area			VDE-AR-N 4105, VDE0126-1-1, ÖVE/ÖNORM E 8001, UTE C 15-712-1, G83-2, G59/3, CEI-021, EN 50438, C10/11, ... for more see homepage/download area			C10/11, EN 50438, IEC 61727, IEC 62116, RD 1699, NRS-097

Conforms to the country-specific standards and regulations according to the country version that has been set.
[1] Feed in starts at less than 550 V. [2] Power derating at high ambient temperatures.

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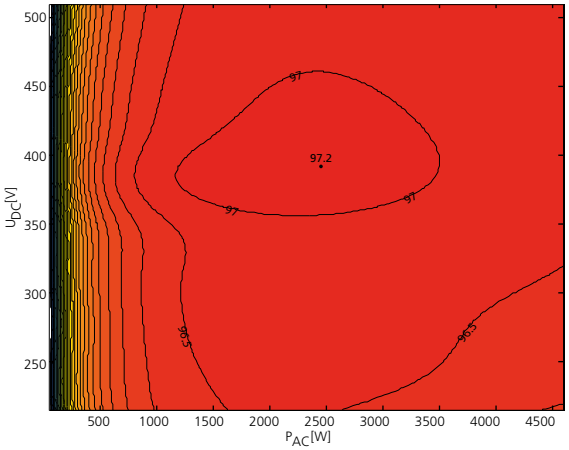
4.0 TL1 | 4.6 TL1 | 5.0 TL1

- 2 MPP trackers, wide MPP range
- Lightweight, straightforward mounting
- Convenient AC and DC cabling thanks to plug-in connectors
- Data logger with web server
- Graphical display, intuitive menu navigation
- Priwatt function for the self-consumption of solar power, ready for storage

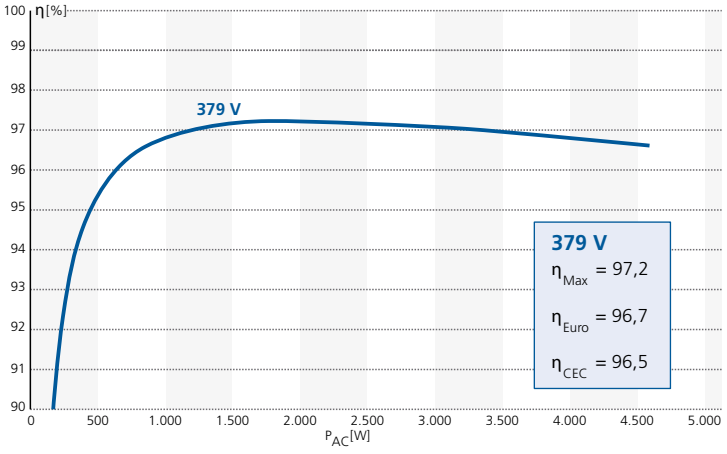
www.kaco-newenergy.com

Graphical Display of efficiency

3D efficiency diagram for blueplanet 4.6 TL1



Efficiency characteristic curve for blueplanet 4.6 TL1



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The text and figures reflect the current technical state at the time of printing. Subject to technical changes. Errors and omissions excepted.
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