



TripleLynx Inverter Range

The benchmark solar inverter from Danfoss
3 phase – Transformerless – 10, 12.5 and 15 kW





98%

Maximum power all day

TripleLynx inverters are designed to deliver maximum yield in all conditions. With a peak efficiency of 98% the TripleLynx inverter boasts class leading performance, with virtually no energy loss.

The weighted EU efficiency is $\geq 97\%$ and is the result of a component layout designed for optimum power output.

Advanced digital algorithms ensure high MPP tracking efficiency across a broad voltage area: 99.9% in steady conditions and 99.6% in dynamic conditions.

Each TripleLynx inverter is packed with high grade semiconductor technology, such as Coolmos and Silicon Carbide, integrated in Danfoss' own power module.

The transformerless design, advanced electronics and optimised internal connections reduce unnecessary loss inside the inverter.

This means that you can rely on the TripleLynx to harvest all the energy of the PV modules.

Feature highlights

- 98% maximum efficiency
- 99.9% MPP tracking efficiency
- Transformerless design
- High grade semiconductors



The TripleLynx inverter is designed for high performance and is the first string inverter to combine a 1000 Voc input range, 250-800 V range and multiple DC input in a single unit.

1000 Volt input enables you to use more modules in series. This means that the number of strings can be reduced, resulting in significantly lower installation costs.

Multiple DC input also adds flexibility and allows you to design with any number of strings. For example, if you have 4 strings where one is different from the rest, you can couple 3 in parallel to two inputs and one individually to the third input without problems. The inverter will automatically configure itself for optimum operation.

The large MPP window, combined with efficient tracking, ensures high conversion efficiency across the entire voltage area.

Broad operation specifications, extreme efficiency and ease of use make TripleLynx string inverters an excellent alternative to central inverters - both for large roof top installations and ground-mounted power plants.



Drive down system costs

1000 V





Feature highlights

- 1000 V input
- Three string design for added flexibility
- Reduced cable costs
- Easy installation
- Excellent alternative to central inverter



Three string input ensures flexibility while the DC switch and cable lock allow for safe and easy installation

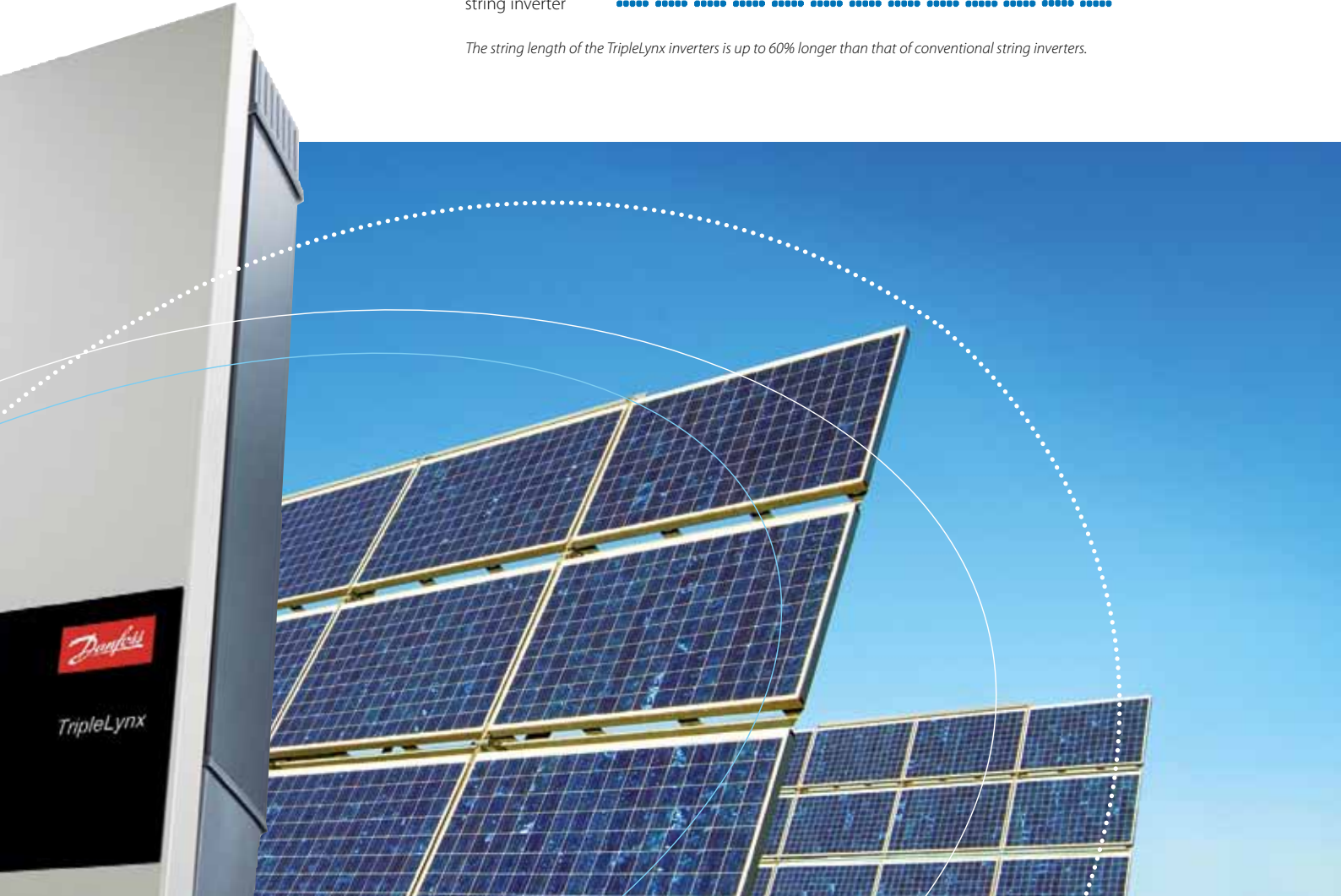
TripleLynx Inverter



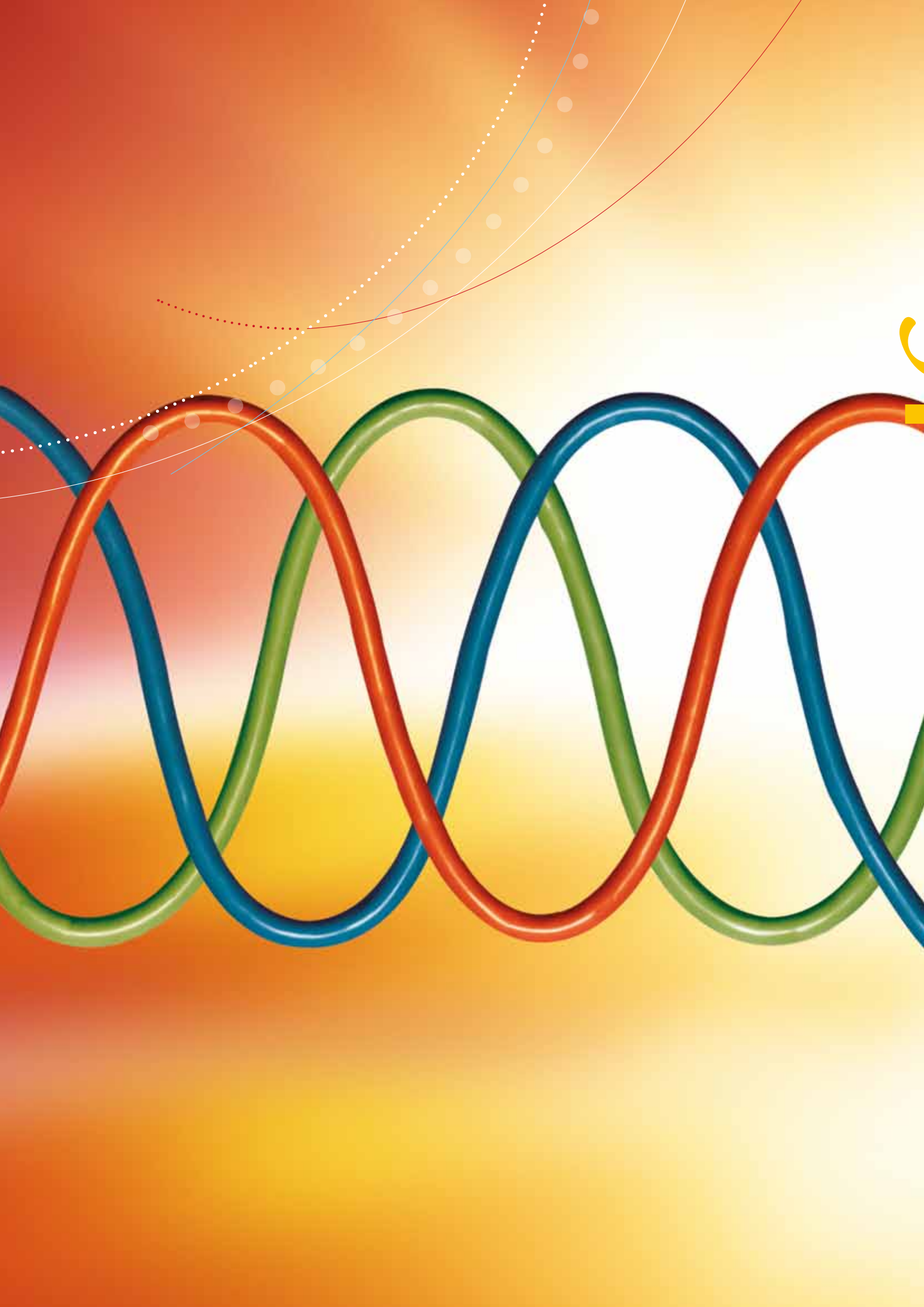
Conventional string inverter



The string length of the TripleLynx inverters is up to 60% longer than that of conventional string inverters.



The large mpp window, combined with efficient tracking, makes the TripleLynx attractive for both commercial and industrial applications. 1000 V input enables more panels to be connected in series, compared to typical inverters.

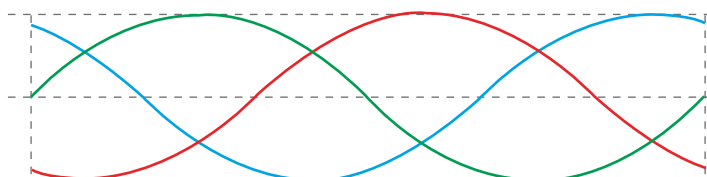


3 phase

Balanced 3 phase output ensures that TripleLynx inverters comply with utility standards. No current flows in the neutral conductor under balanced voltage conditions, which reduces losses on the AC side compared to three single phase inverters.

A significant advantage is that only one inverter is required for three phased output, which makes installation both easier and cheaper than installing three single phase inverters.

Even if one or more strings fall out, the TripleLynx will continue to deliver three phase output unaffected.



Three-phase output guarantees a stable power supply.

Feature highlights

- Only one inverter required for three phase output
- One inverter for 16 countries
- Lower installation costs
- Long life

Simplified and Standardised

Deceptively simple design

The internal layout of the TripleLynx inverter is a study in order and efficiency. Each and every component is placed precisely in order to secure the shortest and most efficient flow of power from the PV modules to the utility grid.

A special cooling system based on a die-cast body frame removes heat effectively through fan cooling, which automatically adjusts itself to the ambient conditions.

The power modules are designed by Danfoss Silicon Power in Germany. Applied on the heat sink, the power modules provide a well-defined thermal environment for the power transistors. In addition, the power capacitors are placed in the coolest areas of the inverter, lowering the operating temperature and ultimately extending the inverter's life considerably.

Connect the easy way

Due to the fact that TripleLynx inverters are all equipped with an integrated communication board, owners have the option to connect external sources, such as sensors and alarms, directly to the inverter. By connecting a WEB logger, the system can be monitored from any location in the world. All Danfoss inverters communicate interchangeably through RS485.

The award winning keypad with LCD display is not only easy to read; it also makes installation and setup easy in any of the 16 countries the TripleLynx is configured for when it leaves Danfoss.



Danfoss' own power modules ensure optimum performance



The keypad is easy to read and easy to use and is based on the award winning design that is widely praised for its user friendliness.



	TLX 10k	TLX 12.5k	TLX 15k
Specification:			
Max power DC	10300 W	12900 W	15500 W
Max recommended PV power at STC ¹⁾	11800 Wp	14700 Wp	17700 Wp
Nominal power AC	10000 W	12500 W	15000 W
Max power AC	10000 W	12500 W	15000 W
Max efficiency	98%	98%	98%
Euro efficiency	≥ 97%	≥ 97%	≥ 97%
Power factor	> 0.97 at 20% load	> 0.97 at 20% load	> 0.97 at 20% load
Turn on power	20 W	20 W	20 W
"Connecting" power loss	10 W	10 W	10 W
Night consumption	< 5 W	< 5 W	< 5 W
Voltages:			
Max voltage DC	1000 V	1000 V	1000 V
Nominal voltage DC	700 V	700 V	700 V
MPP voltage range – nominal power ²⁾	430-800 V	430-800 V	430-800 V
Turn on voltage DC	250 V	250 V	250 V
Turn off voltage DC	250 V	250 V	250 V
AC Voltage range	3x230 V ± 20%	3x230 V ± 20%	3x230 V ± 20%
Grid frequency	50 ± 5 Hz	50 ± 5 Hz	50 ± 5 Hz
Currents:			
Max current DC	2x12 (24) A	3x12 (36) A	3x12 (36) A
Nominal current AC	3 x 15 A	3 x 19 A	3 x 22 A
Max current AC	3 x 15 A	3 x 19 A	3 x 22 A
Distortion (THD%)	< 5%	< 5%	< 5%
Other:			
Dimensions (L,W,H)	700x525x250 mm	700x525x250 mm	700x525x250 mm
Weight	35 kg	35 kg	35 kg
Acoustic Noise level	56 dB(A)	56 dB(A)	56 dB(A)
Operation temperature range	-25..60°C (>45°C derating)	-25..60°C (>45°C derating)	-25..60°C (>45°C derating)
MPPT efficiency (static)	99.9%	99.9%	99.9%
MPPT efficiency (dynamic)	99.6%	99.6%	99.6%
Overload operation	Change of operating point	Change of operating point	Change of operating point
Grid surveillance	Three phase monitoring	Three phase monitoring	Three phase monitoring
Mounting recommendation	Wall bracket	Wall bracket	Wall bracket
IP	IP 54	IP 54	IP 54
Isolation monitoring	value country dependent	value country dependent	value country dependent
Standard:			
Serial Communication	RS485	RS485	RS485
Potential free contact	x 2	x 2	x 2
Sensor input	x 2 (temperature, irradiation)	x 2 (temperature, irradiation)	x 2 (temperature, irradiation)
Energy meter	S0 input	S0 input	S0 input
Options:			
Modem	GSM	GSM	GSM
Datalogger	Weblogger	Weblogger	Weblogger
Normative references:			
Directive LVD	2006/95/EC	2006/95/EC	2006/95/EC
Directive EMC	2004 / 108 / EC	2004 / 108 / EC	2004 / 108 / EC
Safety	EN 50178	EN 50178	EN 50178
EMC immunity	EN 61000-6-1	EN 61000-6-1	EN 61000-6-1
	EN 61000-6-2	EN 61000-6-2	EN 61000-6-2
EMC emission	EN 61000-6-3	EN 61000-6-3	EN 61000-6-3
	EN 61000-6-4	EN 61000-6-4	EN 61000-6-4
Utility interference	EN 61000-3-2 / -3	EN 61000-3-11/-12	EN 61000-3-11/-12
Functional safety, anti-islanding	DIN VDE 0126-1-1*	DIN VDE 0126-1-1*	DIN VDE 0126-1-1*
CE	Yes	Yes	Yes
Utility characteristics	IEC 61727	IEC 61727	IEC 61727
	EN 50160	EN 50160	EN 50160
Germany	BDEW Richtlinie Juni 2008**	BDEW Richtlinie Juni 2008**	BDEW Richtlinie Juni 2008**
Italy	DK5940-2.2 (2007)	DK5940-2.2 (2007)	DK5940-2.2 (2007)
Spain	RD1663 (2000)	RD1663 (2000)	RD1663 (2000)
Spain	RD661	RD661	RD661

Per August 2009

¹⁾ For fixed systems with semi optimal conditions.

²⁾ At identical input voltages. At unequal input voltages $V_{mpptmin}$ lies between 250-430 V depending on total input power.

* Deviant from paragraph 4.2.7 the isolation resistance measurement limit is set to 200 kΩ, in accordance with authorities.

** Full compliance to all requirements not before 2010.

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