



Product Certificate Number	20266-8-CER
Applicant	Ingeteam Power Technology S.A. - Energy Avenida Ciudad De La Innovación, 13. 31621. Sarriguren. Navarra. SPAIN
Series	INGECON SUN 3Play TL Series
Models/	INGECON SUN 160TL
Type of generating unit	Photovoltaic Inverter
Technical Data	See page 2
Network connection code	IEC 61683: 1999. Photovoltaic systems. Power conditioners. Procedure for measuring efficiency.

Having assessed the test report number 20266-1-TR performed by CERE (Nº 5314.01) based on the requirements of the EN ISO/IEC 17025:2005.

The above-mentioned generating unit complies with the requirements of the:

IEC 61683: 1999. Photovoltaic systems. Power conditioners. Procedure for measuring efficiency.

This certification is according the CERE internal process PET-CERE-09 Rev 17 based on the requirements of the EN ISO/IEC 17065:2012. For this certification process the conformity assessment activities were based on:

- Testing of production samples selected by CERE.
- Audit of quality system according ISO 9001 with certificate number: 0. 04. 12231 issued by a certification body accredited according EN ISO/IEC 17021.
- Inspection of the manufacturing process.

Madrid, November 19, 2019. This certificate is valid until November 19, 2022

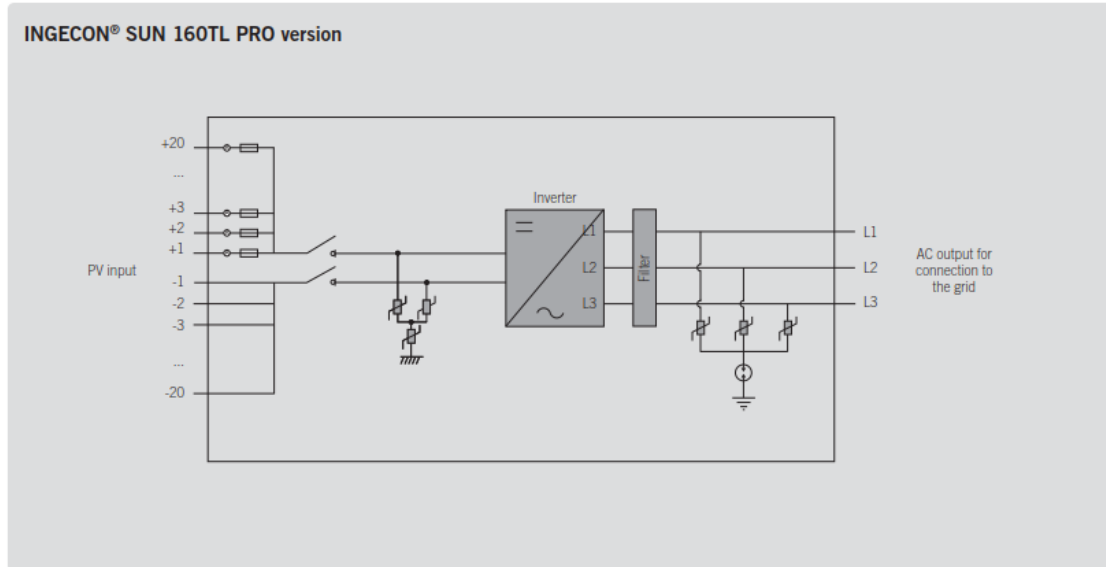
Miguel Martínez Lavin
Certification Manager

Technical data

160TL

DC INPUT						
Recommended PV-Power	95-136 kWp	113–162.5 kWp	141-203 kWp	148 - 213 kWp	153.5-220 kWp	162–233.5 kWp
Voltage range MPP	570 - 850 V	685 - 1000 V	860-1250 V	900 - 1250 V	928 - 1250 V	985 - 1250 V
Maximum Voltage	1500 V					
Max. DC Current	200 A					
Max. DC short-circuit Current	250 A					
Inputs (STD / PRO)	1/20					
MPPT	1					
AC OUTPUT						
Rated Power 25°C/40°C/50°C	92.8 kW/85.9 kW/83.8 kW	111.4 kW/103.1 kW/100.6 kW	139.3 kW/128.9 kW/125.8 kW	146.2 kW/135.3 kW/132 kW	150.9 kW/139.6 kW/136.2 kW	160.1 kW/148.2 kW/144.6 kW
Max. Current 25°C/40°C/50°C	134 A/124 A/121 A					
Rated Voltage	400 V	480 V	600 V	630 V	650 V	690 V
Frequency	50 / 60 Hz					
Power Factor	1					
Power Factor adjustable	Yes, 0.8-1 (leading/lagging)					
THD	<3%					

Electrical Diagram of INGECON SUN 160TL PRO version



The sample selected to test was representative of the production.
The sample was selected in:

Ingeteam Power Technology S.A.
Pol. Ind. El Juncanillo nave 1
E-31293. Sesma. Navarra. SPAIN

Sample Report Number:

20266-TM

The inspection of manufacturing process was performed in:
On June 20, 2019

Ingeteam Power Technology S.A.
Pol. Ind. El Juncanillo nave 1
E-31293. Sesma. Navarra. SPAIN

Inspection Report Number:

10978-19-1-IF

Test results:

90%Vdcmax; 0,9*1250 = 1125 V ±50 V									Measure = 1123,43 V
% Pn	PaDC	PaAC (kW)	η_p (%)	PfDC (kW)	PfAC (kW)	η_c (%)	Ripple	THD	
5	10,87	10,32	94,92	10,88	10,31	94,73	6,13	0,07	
10	17,73	17,21	97,04	17,72	17,20	97,07	7,36	0,04	
20	31,20	30,67	98,32	31,19	30,66	98,30	8,21	0,09	
25	38,25	37,68	98,50	38,24	37,66	98,50	9,24	0,09	
30	45,21	44,59	98,63	45,19	44,56	98,61	10,90	0,18	
50	70,87	70,15	98,98	70,84	70,12	98,99	17,56	0,12	
75	103,05	101,93	98,92	103,00	101,93	98,95	33,32	0,04	
100	138,91	137,27	98,82	138,88	137,23	98,81	59,86	0,23	
Euroefficiency		98,59							
No-load losses		58,09							
Standby loss		--							

Vdcnom = 1075 V ±50 V									Measure = 1073,26 V
% Pn	PaDC (kW)	PaAC (kW)	η_p (%)	PfDC (kW)	PfAC (kW)	η_c (%)	Ripple	THD	
5	10,73	10,31	96,03	10,69	10,30	96,32	6,13	0,07	
10	17,67	17,28	97,81	17,62	17,27	98,04	7,36	0,08	
20	31,14	30,73	98,70	31,09	30,72	98,80	8,21	0,09	
25	38,12	37,67	98,83	38,07	37,66	98,91	9,24	0,08	
30	45,10	44,59	98,87	45,06	44,56	98,90	10,90	0,17	
50	70,74	70,13	99,13	70,69	70,11	99,19	17,56	0,08	
75	102,96	101,91	98,98	102,92	101,92	99,03	33,32	0,06	
100	138,84	137,26	98,87	138,87	137,34	98,90	59,86	0,48	
Euroefficiency		98,82							
No-load losses		58,09							
Standby loss		--							

Vdcmin = 866 V ±50 V									Measure = 864,67 V
% Pn	PaDC (kW)	PaAC (kW)	η_p (%)	PfDC (kW)	PfAC (kW)	η_c (%)	Ripple	THD	
5	10,69	10,26	95,96	10,73	10,30	96,03	6,13	0,24	
10	17,66	17,27	97,86	17,70	17,27	97,61	7,36	0,05	
20	31,20	30,75	98,61	31,25	30,73	98,39	8,21	0,13	
25	38,21	37,69	98,70	38,24	37,64	98,48	9,24	0,28	
30	45,17	44,58	98,74	45,19	44,54	98,60	10,90	0,23	
50	71,06	70,22	98,84	71,10	70,19	98,74	17,56	0,15	
75	103,35	101,89	98,59	103,40	101,90	98,55	33,32	0,03	
100	139,42	137,32	98,50	139,54	137,26	98,36	59,86	0,41	
Euroefficiency		98,59							
No-load losses		58,09							
Standby loss		--							