

Certificate number

No: 2617/0709-CER

Manufacturer

Ingeteam Power Technology S.A - Energy
Polígono Industrial El Juncarillo, Nave 1, 31293 Sesma (Navarra), Spain

Trademark

Ingeteam

Type

PowerMax B series

Variant models

**INGECON SUN 1800TL B690 / INGECON SUN 1770TL B680 / INGECON SUN 1740TL B670 /
INGECON SUN 1715TL B660 / INGECON SUN 1690TL B650 / INGECON SUN 1665TL B640 /
INGECON SUN 750TL B270 / INGECON SUN 1190TL B430 / INGECON SUN 1220TL B440 /
INGECON SUN 1250TL B450 / INGECON SUN 1275TL B460**

Type of generating unit

Static Power Converter

Technical Data

Nominal Power

See page 4

Nominal Voltage

See page 4

Nominal Frequency

50 / 60 Hz

Firmware version

ABK1000

Number of phases

Three phases

Isolation Transformer

External, must be provided by the installer

Standard

IEC 61683:1999.

Photovoltaic systems. Power conditioners. Procedure for measuring efficiency.

The above-mentioned generating unit is certified according the SGS internal procedure PE.T-ECPE-33 based on the requirements of the UNE-EN ISO / IEC 17065.

This certificate is valid until: 09th March 2021.

Madrid, 09th March 2018



Daniel Arranz Muñoz
Certification Manager



Summary efficiency results measured for the tested models:

INGECON SUN 1800TL B690								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	99,13%	99,25%	99,31%	99,27%	99,24%	99,10%	98,54%	97,09%
Nominal input voltage ⁽²⁾	98,89%	99,05%	99,15%	99,15%	99,03%	98,93%	98,14%	96,38%
90% of the maximum rated input voltage ⁽³⁾	98,87%	98,99%	99,09%	99,09%	98,99%	98,85%	98,10%	96,32%

(1) 997 V; (2) 1083,5 V; (3) 1170 V

INGECON SUN 1770TL B680								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	99,11%	99,21%	99,27%	99,23%	99,22%	99,06%	98,46%	96,99%
Nominal input voltage ⁽²⁾	98,85%	98,99%	99,08%	99,13%	99,02%	98,90%	98,10%	96,30%
90% of the maximum rated input voltage ⁽³⁾	98,87%	99,00%	99,11%	99,02%	98,94%	98,77%	98,06%	96,29%

(1) 982 V; (2) 1076 V; (3) 1170 V

INGECON SUN 1740TL B670								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	99,08%	99,19%	99,26%	99,26%	99,19%	99,06%	98,48%	96,98%
Nominal input voltage ⁽²⁾	98,86%	99,01%	99,14%	99,06%	98,97%	98,80%	98,11%	96,28%
90% of the maximum rated input voltage ⁽³⁾	98,83%	98,96%	99,08%	99,05%	98,97%	98,83%	98,03%	96,20%

(1) 968 V; (2) 1069 V; (3) 1170 V

INGECON SUN 1715TL B660								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	99,06%	99,17%	99,25%	99,28%	99,24%	99,17%	98,43%	97,03%
Nominal input voltage ⁽²⁾	98,84%	98,99%	99,12%	99,07%	99,00%	98,87%	98,16%	96,44%
90% of the maximum rated input voltage ⁽³⁾	98,79%	98,91%	98,99%	98,96%	98,87%	98,71%	97,94%	96,01%

(1) 954 V; (2) 1062 V; (3) 1170 V

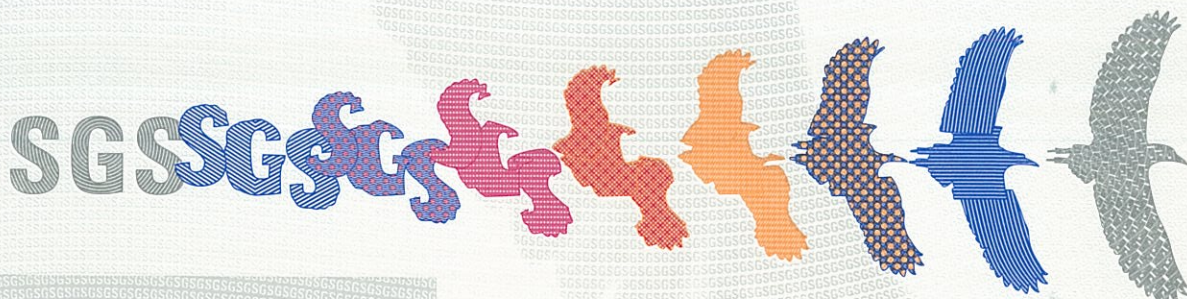
INGECON SUN 1690TL B650								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	99,11%	99,16%	99,23%	99,21%	99,17%	99,06%	98,63%	97,34%
Nominal input voltage ⁽²⁾	98,79%	98,95%	99,06%	99,07%	99,00%	98,86%	98,12%	96,34%
90% of the maximum rated input voltage ⁽³⁾	98,76%	98,90%	98,99%	98,99%	98,90%	98,75%	97,90%	95,89%

(1) 940 V; (2) 1055 V; (3) 1170 V

INGECON SUN 1665TL B640								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	99,00%	99,10%	99,20%	99,23%	99,19%	99,09%	98,55%	97,19%
Nominal input voltage ⁽²⁾	98,78%	98,94%	99,04%	99,05%	98,98%	98,85%	98,17%	96,55%
90% of the maximum rated input voltage ⁽³⁾	98,74%	98,86%	98,93%	98,94%	98,83%	98,66%	97,74%	95,56%

(1) 925 V; (2) 1047,5 V; (3) 1170 V

These efficiency results are representatives for the referred models with a testing frequency of 50Hz.



Summary efficiency results measured for the tested models:

INGECON SUN 750TL B270								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	97,86%	98,19%	98,57%	98,33%	98,52%	98,77%	98,36%	97,67%
Nominal input voltage ⁽²⁾	97,86%	98,01%	98,33%	98,61%	98,05%	98,15%	97,63%	96,47%
90% of the maximum rated input voltage ⁽³⁾	97,46%	97,83%	98,09%	98,32%	97,99%	97,96%	97,09%	95,47%

(1) 400 V; (2) 569 V; (3) 738 V

INGECON SUN 1190TL B430								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	98,31%	98,74%	98,81%	98,94%	99,05%	98,83%	98,50%	97,64%
Nominal input voltage ⁽²⁾	98,32%	98,74%	98,94%	98,92%	98,73%	98,82%	97,74%	96,95%
90% of the maximum rated input voltage ⁽³⁾	98,30%	98,74%	98,79%	98,67%	98,71%	98,43%	97,72%	96,41%

(1) 623 V; (2) 680 V; (3) 738 V

INGECON SUN 1220TL B440								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	98,34%	98,77%	98,82%	98,97%	98,78%	98,85%	98,54%	97,55%
Nominal input voltage ⁽²⁾	98,36%	98,76%	98,82%	98,97%	98,77%	98,85%	98,35%	97,07%
90% of the maximum rated input voltage ⁽³⁾	98,35%	98,66%	98,82%	98,83%	98,76%	98,62%	97,69%	96,71%

(1) 638 V; (2) 688 V; (3) 738 V

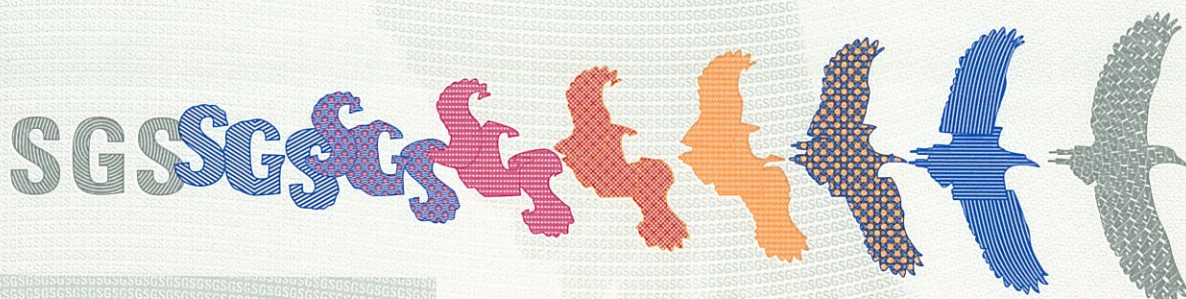
INGECON SUN 1250TL B450								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	98,39%	98,70%	98,87%	98,99%	98,80%	98,54%	98,56%	97,37%
Nominal input voltage ⁽²⁾	98,39%	98,77%	98,85%	98,75%	98,80%	98,51%	98,56%	97,11%
90% of the maximum rated input voltage ⁽³⁾	98,39%	98,72%	98,85%	98,74%	98,79%	98,87%	97,84%	96,83%

(1) 652 V; (2) 695 V; (3) 738 V

INGECON SUN 1275TL B460								
Test condition	100%Sn	75%Sn	50%Sn	30%Sn	25%Sn	20%Sn	10%Sn	5%Sn
Minimum rated input voltage ⁽¹⁾	99,16%	98,85%	99,01%	99,01%	99,12%	98,91%	97,93%	97,65%
Nominal input voltage ⁽²⁾	99,18%	98,82%	98,87%	98,77%	98,82%	98,90%	98,59%	97,14%
90% of the maximum rated input voltage ⁽³⁾	98,43%	98,82%	98,87%	98,76%	98,82%	98,62%	98,21%	96,88%

(1) 666 V; (2) 702 V; (3) 738 V

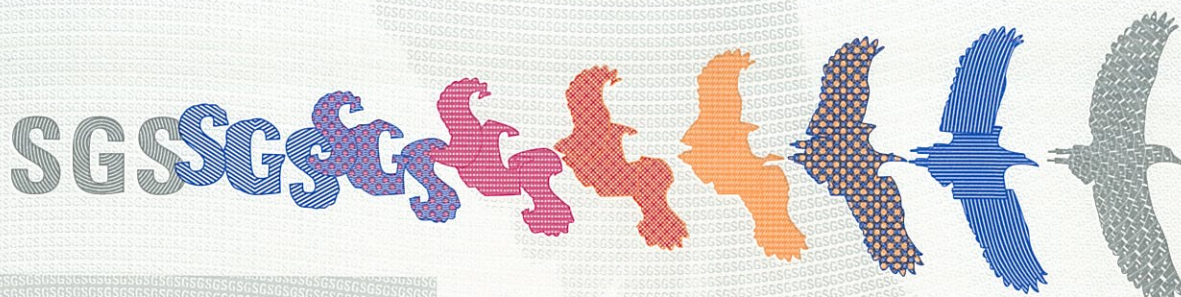
These efficiency results are representatives for the referred models with a testing frequency of 50Hz.



Full list of nominal characteristics:

Ingecon Sun PowerMax B (1500 Vdc models)			
INGECON SUN PowerMax	Rated Voltage (Vac)	MPPT Range (Vdc)	Rated Power (kW)
1800TL B 690	690	997 – 1300	1800
1770TL B 680	680	982 – 1300	1770
1740TL B 670	670	968 – 1300	1740
1715TL B660	660	954 – 1300	1715
1690TL B650	650	940 – 1300	1690
1665TL B640	640	925 – 1300	1665
f [Hz]	50 / 60		
Vdc Max	1500 V		
Idc Max	1850 A		
Iac Max	1500 A		

Ingecon Sun PowerMax B (1000 Vdc models)			
INGECON SUN PowerMax	Rated Voltage (Vac)	MPPT Range (Vdc)	Rated Power (kW)
750TL B270	270	400 - 820	750
1190TL B430	430	623 - 820	1190
1220TL B440	440	638 - 820	1220
1250TL B450	450	652 - 820	1250
1275TL B460	460	666 - 820	1275
f [Hz]	50 / 60		
Vdc Max	1000 V		
Idc Max	2000 A		
Iac Max	1600 A		



SGS Tecnos, S.A.U. C/ Trespaderne, 29 - 28042 Madrid
Tlf: 91 313 80 00; Fax: 91 313 80 93 www.sgs.es
This certificate is issued by SGS under its General Conditions
for Product Certification at www.sgs.com/terms_and_conditions
This document cannot be reproduced partially

N° 2617/0709-CER

Page 4 of 4