



**BUREAU
VERITAS**

Certificate of compliance

Applicant: SMA Solar Technology AG
Sonnenallee 1
34266 Niestetal
Germany

Product: Photovoltaic (PV) inverter

Model: SHP 100-21
SHP 150-21
SHP 172-21
SHP 180-21

Use in accordance with regulations:

The inverter(s) are tested according to the IEC 61683:1999, EN 61683:2000, DIN EN 61683:2000 procedure for measuring efficiency.

SHP 100-21 max. efficiency $\eta = 98,76 \%$

SHP 150-21 max efficiency $\eta = 99,10 \%$

SHP 172-21 max efficiency $\eta = 99,18 \%$

SHP 180-21 max efficiency $\eta = 99,20 \%$

Applied rules and standards:

IEC 61683:1999, EN 61683:2000, DIN EN 61683:2000

Photovoltaic systems – Power conditioners – Procedure for measuring efficiency

At the time of issue of this certificate, the representative product listed above corresponds to the stated rules and standards.

Report number: 18TH0282_SHP1xx-21-IEC61683_0 **Certification program:** NSOP-0032-DEU-ZE-V01
Certificate number: U22-0573 **Date of issue:** 2022-09-21

Certification body

Georg Lortz



Certification body of Bureau Veritas Consumer Products Services Germany GmbH Accredited according to DIN EN ISO/IEC 17065

Testing laboratory accredited according to DIN EN ISO/IEC 17025

A partial representation of the certificate requires the written permission of Bureau Veritas Consumer Products Services Germany GmbH



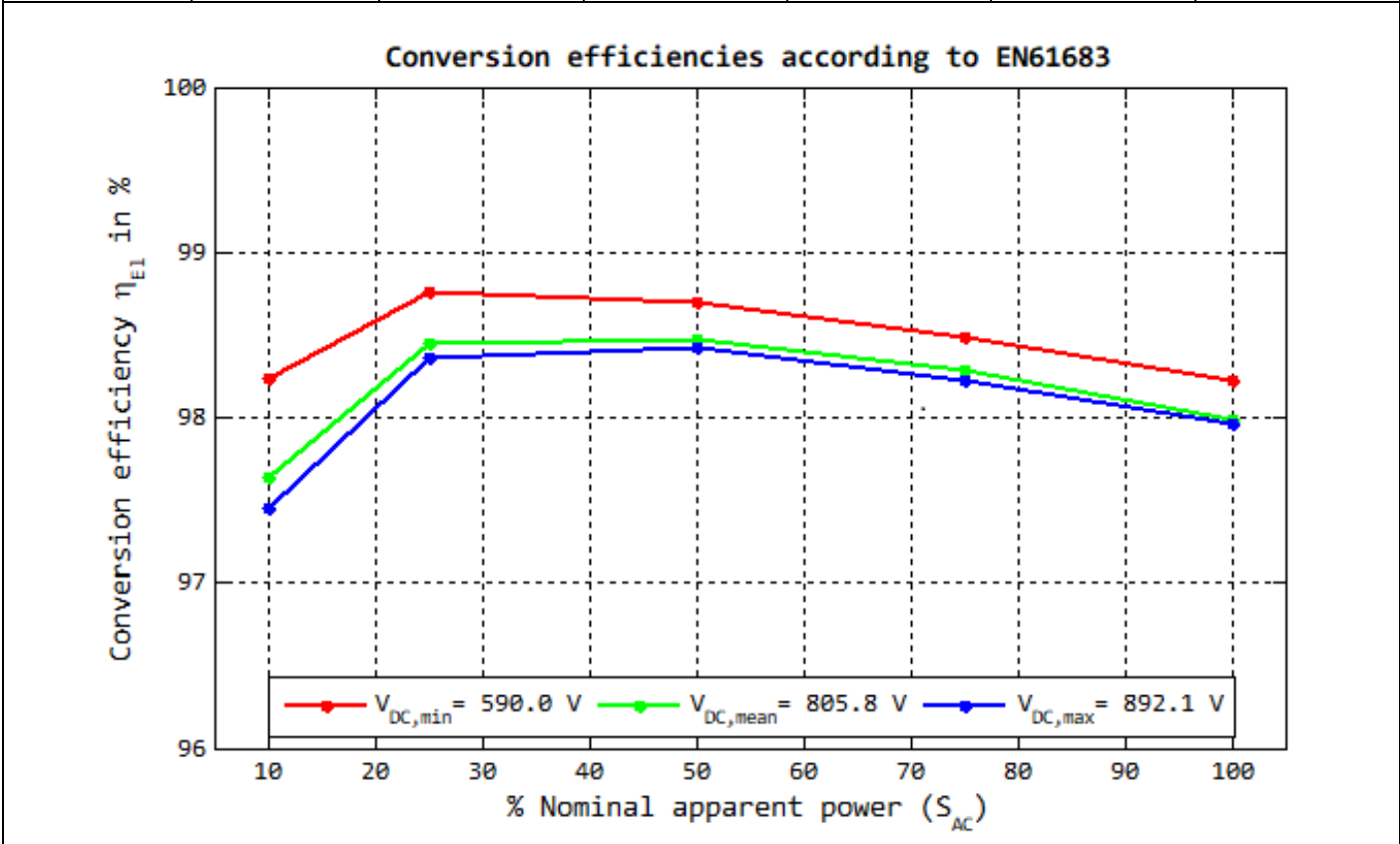
Appendix

Extract from test report according the IEC 61683

Nr. 18TH0282_SHP1xx-21-IEC61683_0

Efficiency measurement conditions test results

SHP 100-21						
Input voltage [Vdc]		Power in [W] (nom. 100000W)				
		10%	25%	50%	75%	100%
		10,0	25,0	50,0	75,0	100,0
		η in [%]				
V _{min}	590,0	98,24	98,76	98,70	98,49	98,23
V _{nominal}	805,8	97,64	98,45	98,48	98,28	97,99
V _{max (90% MPPT)}	892,1	97,45	98,36	98,42	98,22	97,96





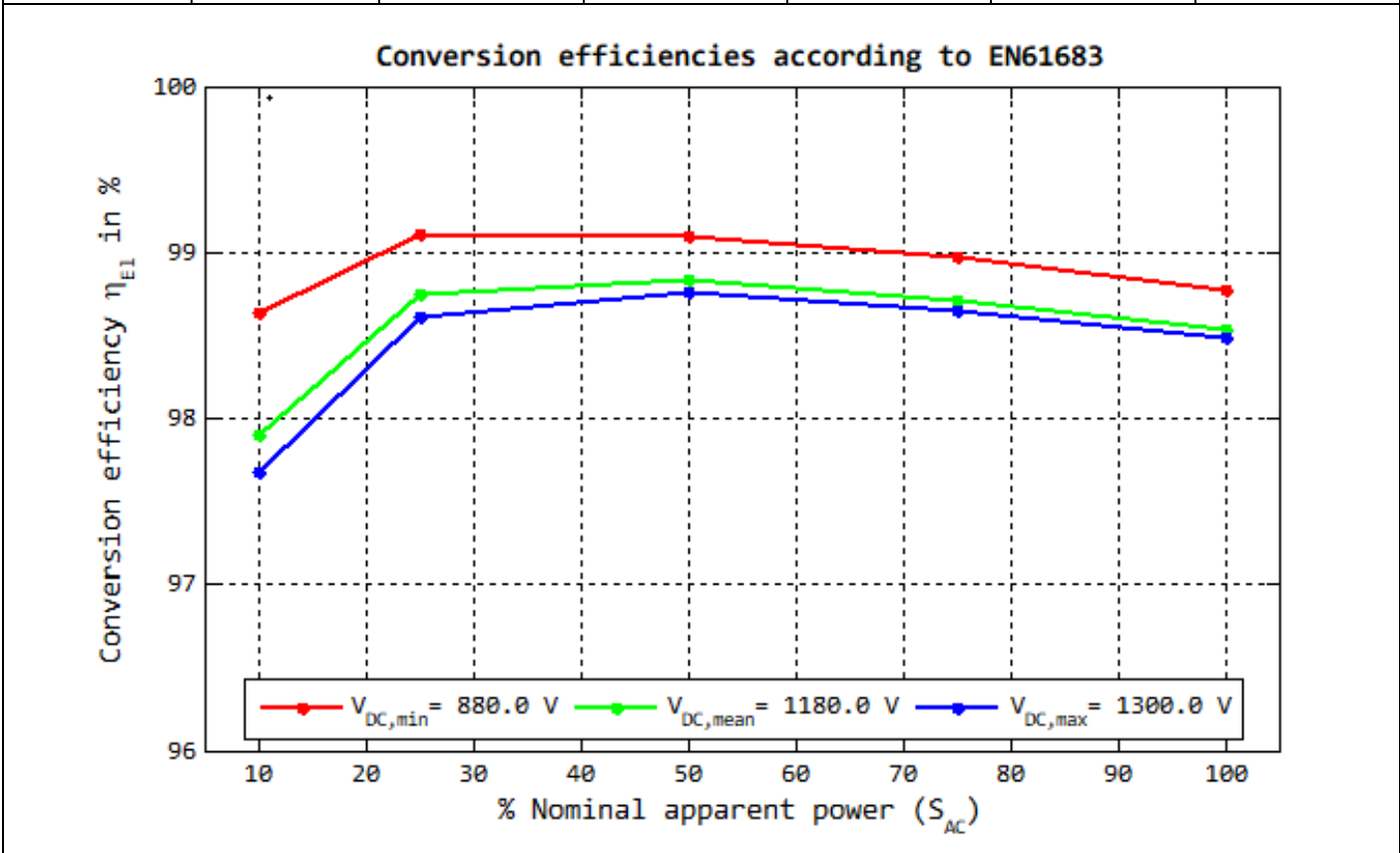
Appendix

Extract from test report according the IEC 61683

Nr. 18TH0282_SHP1xx-21-IEC61683_0

Efficiency measurement conditions test results

SHP 150-21						
Input voltage [Vdc]		Power in [W] (nom. 150000W)				
		10%	25%	50%	75%	100%
		15,0	37,5	75,0	112,5	150,0
		η in [%]				
V _{min}	880,0	98,63	99,11	99,10	98,97	98,78
V _{nominal}	1180,0	97,90	98,74	98,83	98,72	98,54
V _{max (90% MPPT)}	1300,0	97,67	98,61	98,76	98,65	98,49





Appendix

Extract from test report according the IEC 61683

Nr. 18TH0282_SHP1xx-21-IEC61683_0

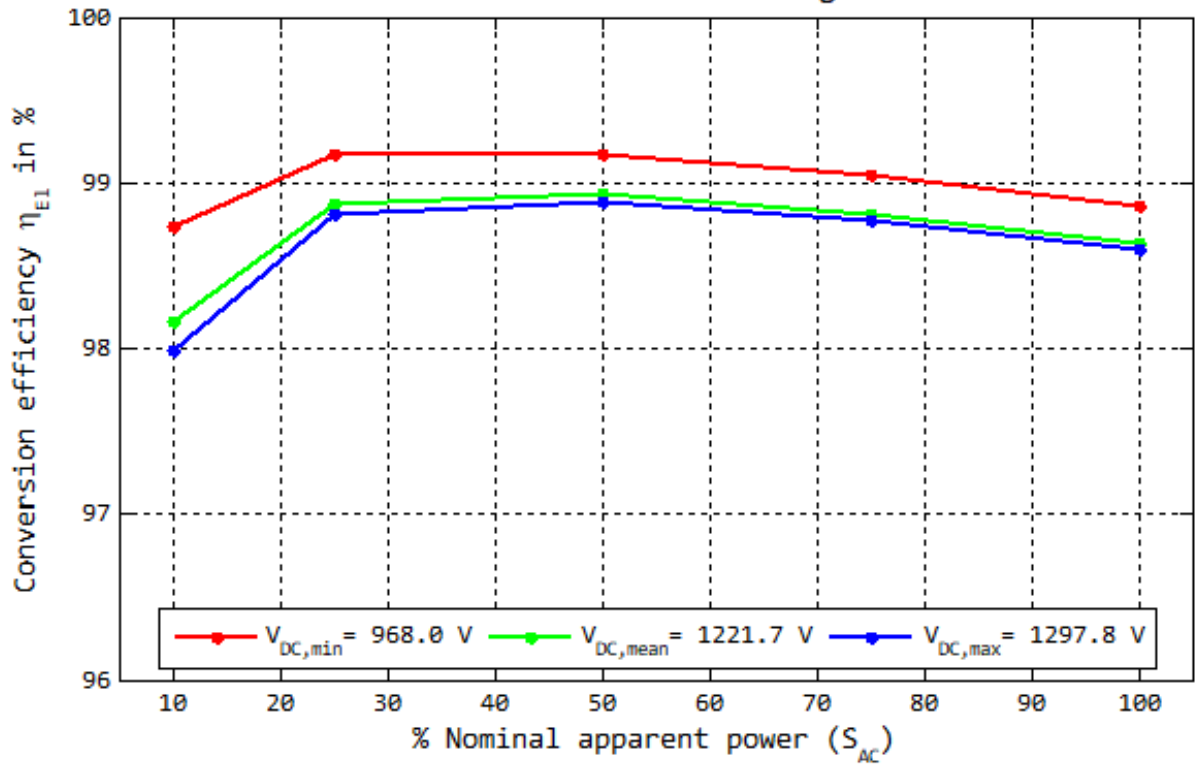
Efficiency measurement conditions test results

SHP 172-21

Power in [W] (nom. 172000W)

Input voltage [Vdc]		Power in [W] (nom. 172000W)				
		10%	25%	50%	75%	100%
		17,2	43,0	86,0	129,0	172,0
		η in [%]				
V _{min}	986,0	98,74	99,17	99,18	99,05	98,87
V _{nominal}	1221,7	98,17	98,87	98,93	98,82	98,63
V _{max (90% MPPT)}	1297,8	97,99	98,81	98,89	98,78	98,78

Conversion efficiencies according to EN61683





Appendix

Extract from test report according the IEC 61683 Nr. 18TH0282_SHP1xx-21-IEC61683_0

Efficiency measurement conditions test results

SHP 180-21						
Input voltage [Vdc]		Power in [W] (nom. 180000W)				
		10%	25%	50%	75%	100%
		18,0	45,0	90,0	135,0	180,0
		η in [%]				
V _{min}	1012,0	98,73	99,19	99,20	99,08	98,19
V _{nominal}	1242,5	98,17	98,92	98,98	98,86	98,69
V _{max (90% MPPT)}	1311,7	98,08	98,87	98,94	98,83	98,66

