



**BUREAU
VERITAS**

Certificate of compliance

Applicant: SMA Solar Technology AG
Sonnenallee 1
34266 Niestetal
Germany

Product: Photovoltaic (PV) inverter

Model: SC 4000 UP
SC 4200 UP
SC 4400 UP
SC 4600 UP

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.

Calculation of the static conversion efficiency, weighted according to European (EU)

EU efficiency SC 4000 UP	98,61%
EU efficiency SC 4200 UP	98,65%
EU efficiency SC 4400 UP	98,68%
EU efficiency SC 4600 UP	98,70%

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 safety concept of an aforementioned representative product corresponds to the valid safety specifications for the specified use in accordance with regulations.

Report number: 15TH0407-SC UP-IEC61683_0 **Certification program:** NSOP-0032-DEU-ZE-V01
Certificate number: U20-0572 **Date of issue:** 2020-07-16

Certification body

Thomas Lammel



Certification body of Bureau Veritas Consumer Products Services Germany GmbH accredited according to DIN EN ISO/IEC 17065
A partial representation of the certificate requires the written approval of Bureau Veritas Consumer Products Services Germany GmbH

Measuring of efficiency

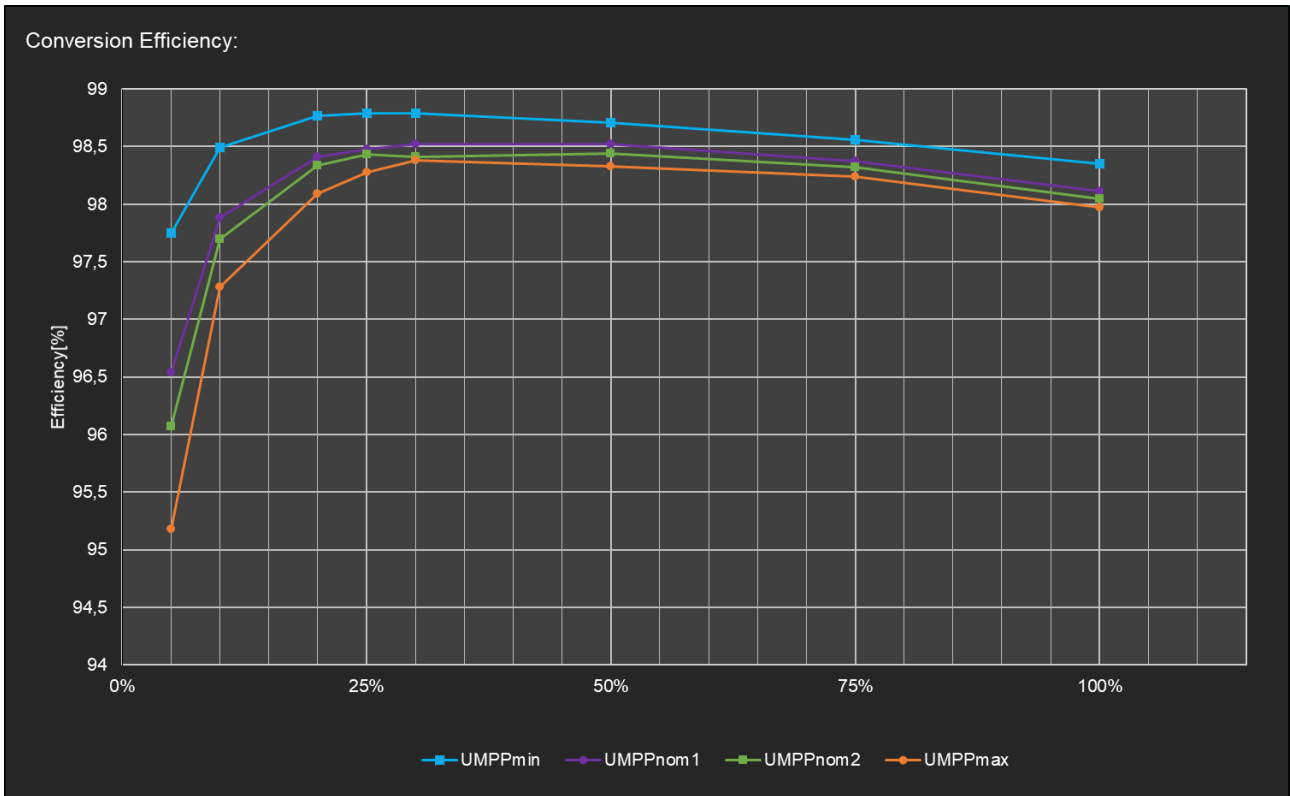
Extract from test report according the IEC 61683

Nr. 15TH0407-SC UP-IEC61683_0

Efficiency measurement conditions test results

SC 4000 UP

Input voltage [Vdc]		Power (nom. 4000kW)							
		5%	10%	20%	25%	30%	50%	75%	100%
		200 kW	400 kW	800 kW	1000 kW	1200kW	2000 kW	3000 kW	4000 kW
		η in [%]							
V_{min}	880	97,75	98,49	98,77	98,79	98,79	98,71	98,56	98,35
V_{nominal1}	1103	96,54	97,88	98,41	98,48	98,52	98,52	98,37	98,11
V_{nominal2}	1193	96,07	97,70	98,34	98,43	98,41	98,44	98,32	98,05
V_{max} (MPPT)	1325	95,18	97,28	98,09	98,28	98,38	98,33	98,24	97,97



Note:
Ambient temperature 25°C +/- 2°C.

Measuring of efficiency

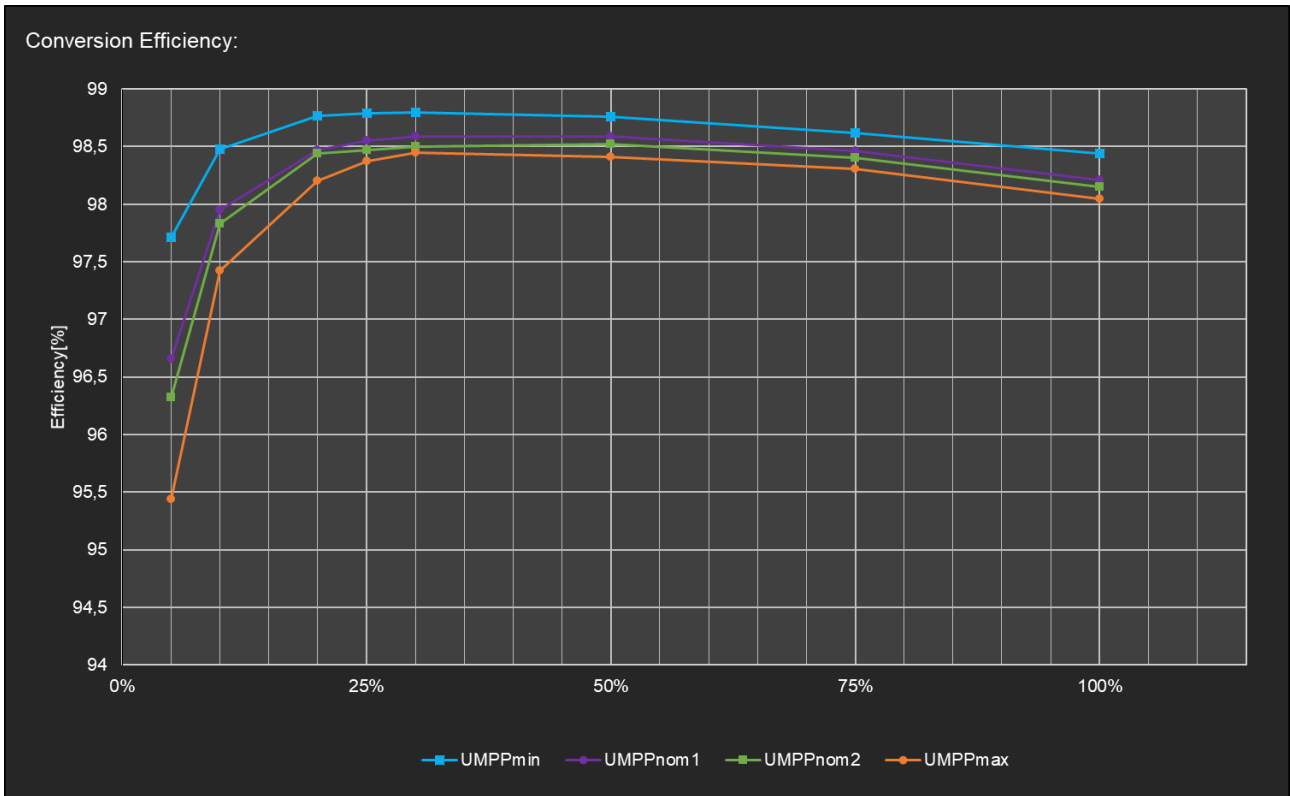
Extract from test report according the IEC 61683

Nr. 15TH0407-SC UP-IEC61683_0

Efficiency measurement conditions test results

SC 4200 UP

Input voltage [Vdc]		Power (nom. 4200kW)							
		5%	10%	20%	25%	30%	50%	75%	100%
		210 kW	420 kW	840 kW	1050 kW	1260kW	2100 kW	3150 kW	4200 kW
		η in [%]							
V_{min}	921	97,71	98,48	98,77	98,79	98,80	98,76	98,62	98,44
V_{nominal1}	1123	96,66	97,95	98,47	98,55	98,59	98,59	98,46	98,21
V_{nominal2}	1193	96,32	97,83	98,44	98,47	98,50	98,52	98,40	98,15
V_{max} (MPPT)	1325	95,44	97,42	98,20	98,37	98,45	98,41	98,31	98,05



Note:
Ambient temperature 25°C +/- 2°C.

Measuring of efficiency

Extract from test report according the IEC 61683

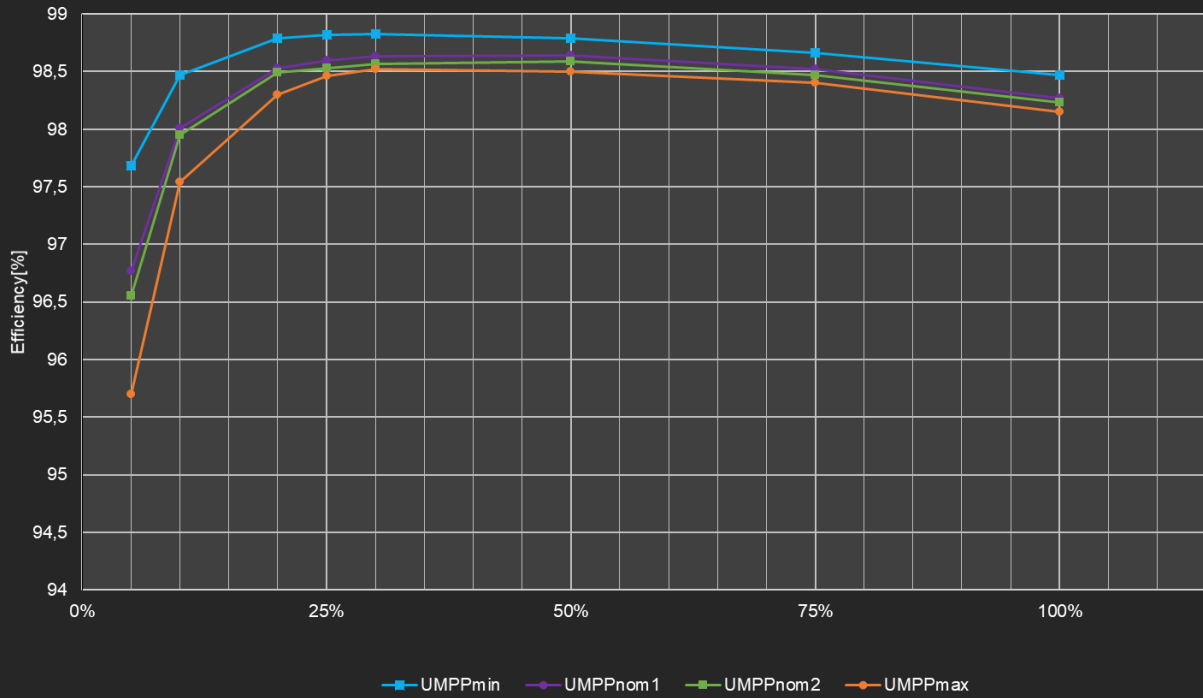
Nr. 15TH0407-SC UP-IEC61683_0

Efficiency measurement conditions test results

SC 4400 UP

Input voltage [Vdc]		Power (nom. 4400kW)							
		5%	10%	20%	25%	30%	50%	75%	100%
		220 kW	440 kW	880 kW	1100 kW	1320kW	2200 kW	3300 kW	4400 kW
		η in [%]							
V_{min}	962	97,68	98,47	98,79	98,82	98,83	98,79	98,66	98,47
$V_{nominal1}$	1144	96,77	98,01	98,53	98,60	98,63	98,64	98,52	98,27
$V_{nominal2}$	1193	96,55	97,95	98,49	98,53	98,57	98,59	98,47	98,23
V_{max} (MPPT)	1325	95,70	97,54	98,30	98,46	98,52	98,50	98,40	98,15

Conversion Efficiency:



Note:

Ambient temperature 25°C +/- 2°C.

Measuring of efficiency

Extract from test report according the IEC 61683

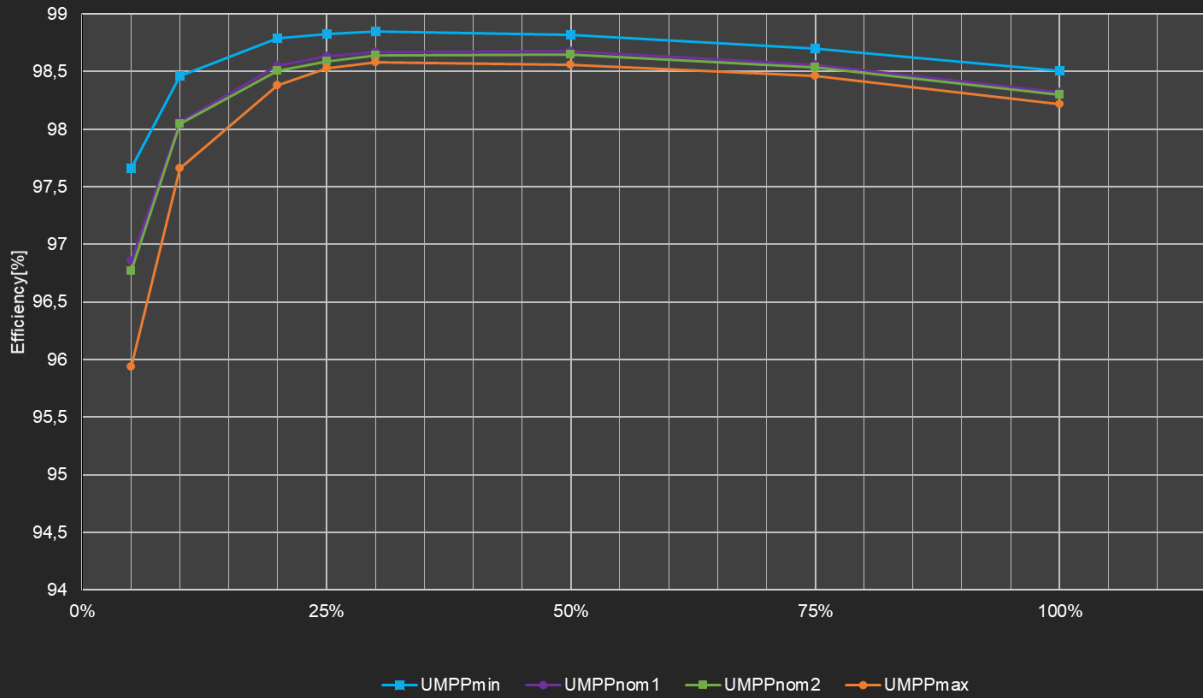
Nr. 15TH0407-SC UP-IEC61683_0

Efficiency measurement conditions test results

SC 4600 UP

Input voltage [Vdc]		Power (nom. 4600kW)							
		5%	10%	20%	25%	30%	50%	75%	100%
		230 kW	460 kW	920 kW	1150 kW	1380kW	2300 kW	3450 kW	4600 kW
		η in [%]							
V_{min}	1003	97,66	98,46	98,79	98,83	98,85	98,82	98,70	98,51
$V_{nominal1}$	1164	96,86	98,06	98,55	98,63	98,67	98,68	98,56	98,32
$V_{nominal2}$	1193	96,77	98,05	98,51	98,59	98,64	98,65	98,54	98,30
V_{max} (MPPT)	1325	95,94	97,66	98,38	98,53	98,58	98,56	98,46	98,22

Conversion Efficiency:



Note:

Ambient temperature 25°C +/- 2°C.