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Certification body of BV CPS GmbH
Accredited according to EN 45011 -
ISO / IEC Guide 65

Certificate of compliance

Applicant: Kaco new energy GmbH
Carl-Zeiss-Straße 1
74172 Neckarsulm
Germany

Product: Grid-tied photovoltaic (PV) inverter

Model: Powador 6.0 TL3 – INT – A;
Powador 7.8 TL3 – INT – A;
Powador 9.0 TL3 – INT – A;
Powador 10.0 TL3 – INT;
Powador 12.0 TL3 – INT;
Powador 14.0 TL3 – INT;
Powador 18.0 TL3 – INT;
Powador 20.0 TL3 – INT

Use in accordance with regulations:

The inverters are tested according the IEC 61683 procedure for measuring efficiency.
For detailed information please see certificate annex or corresponding test report.

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: 10TH0306-IEC61683;
21175445_002

Certificate number: U14-0192

Date of issue: 2014-03-24

Certification body

Dieter Zitzmann



Deutsche
Akkreditierungsstelle
D-ZE-12024-01-01



QUALITY



HEALTH



SAFETY



ENVIRONMENT



SOCIAL
ACCOUNTABILITY

Measuring of efficiency

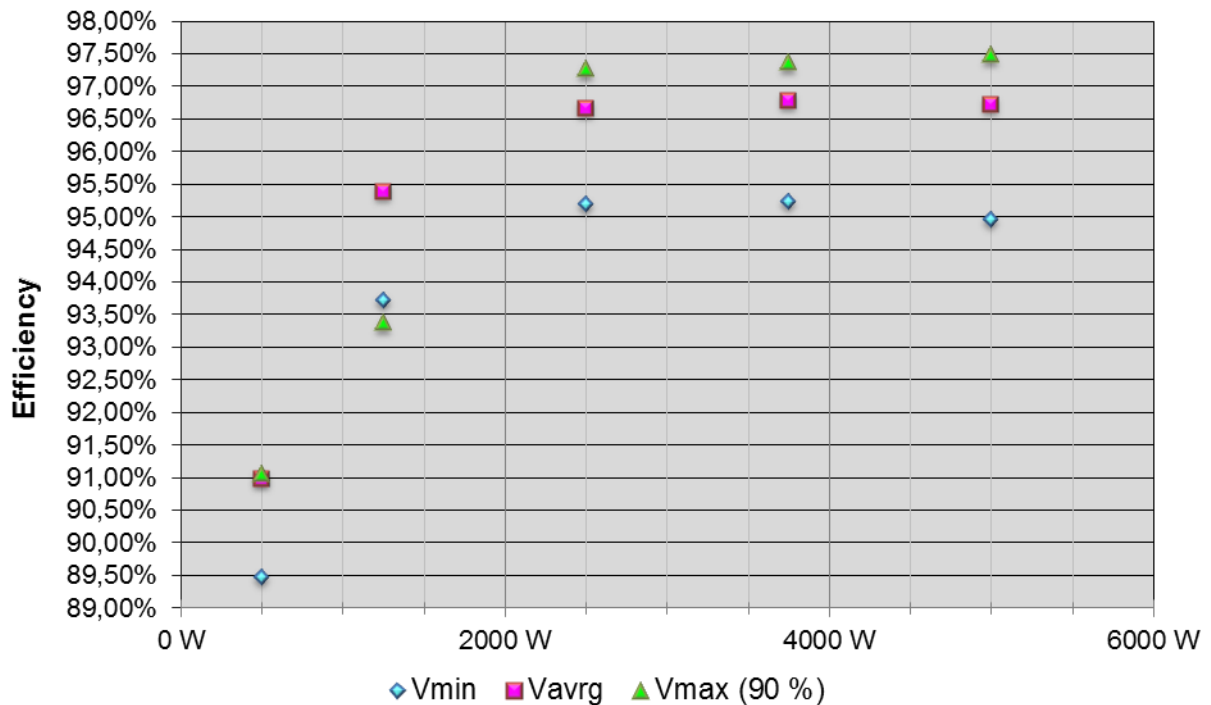
Extract from test report according the IEC 61683

Nr. 10TH0306; 21175445_002

Efficiency measurement conditions test results

Powador 6.0 TL3 – INT – A

Input voltage (Vdc)		P _{AC} (nom. 5000 W)				
		10%	25%	50%	75%	100%
		500 W	1250 W	2500 W	3750 W	5000 W
		η				
Vmin	240	89,47%	93,72%	95,20%	95,25%	94,96%
Vnominal	575	91,00%	95,40%	96,67%	96,79%	96,74%
Vmax (90%)	720	91,05%	93,38%	97,26%	97,36%	97,49%



Measuring of efficiency

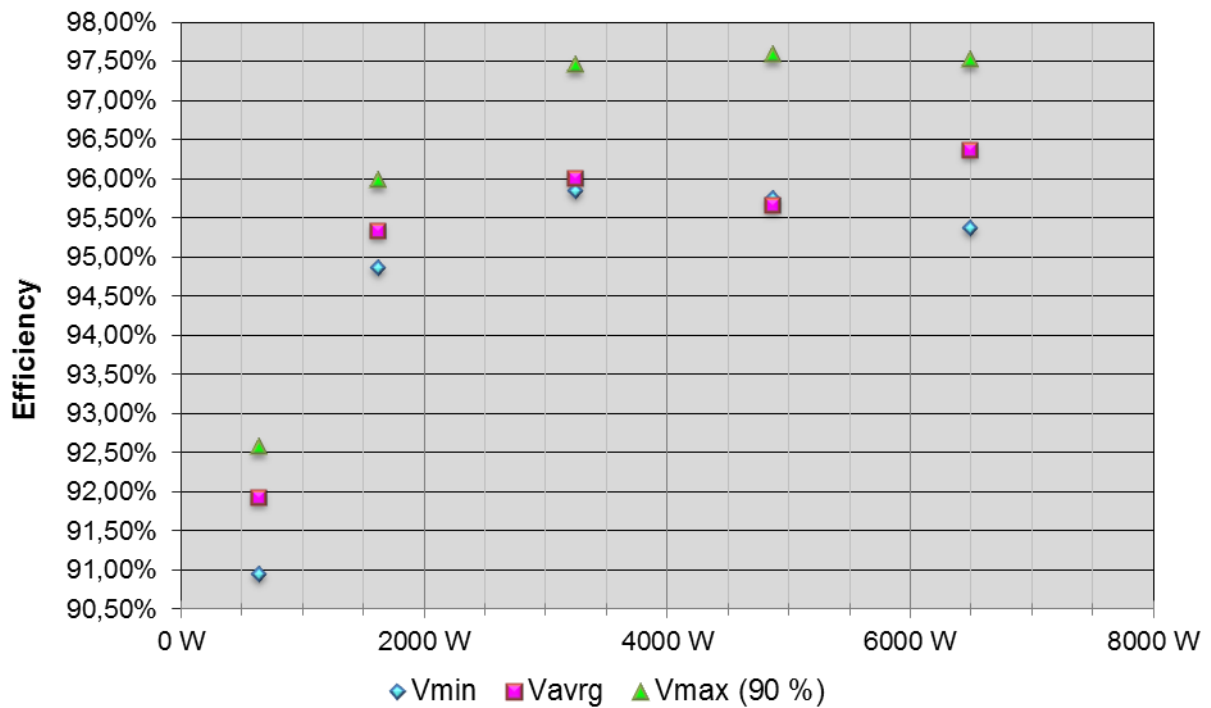
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Efficiency measurement conditions test results

Powador 7.8 TL3 – INT – A

Input voltage (Vdc)		P _{AC} (nom. 6500 W)				
		10%	25%	50%	75%	100%
		650 W	1625 W	3250 W	4875 W	6500 W
		η				
Vmin	310	90,94%	94,86%	95,84%	95,75%	95,36%
Vnominal	575	91,94%	95,34%	96,00%	95,66%	96,37%
Vmax (90%)	720	92,56%	95,97%	97,46%	97,58%	97,52%



Measuring of efficiency

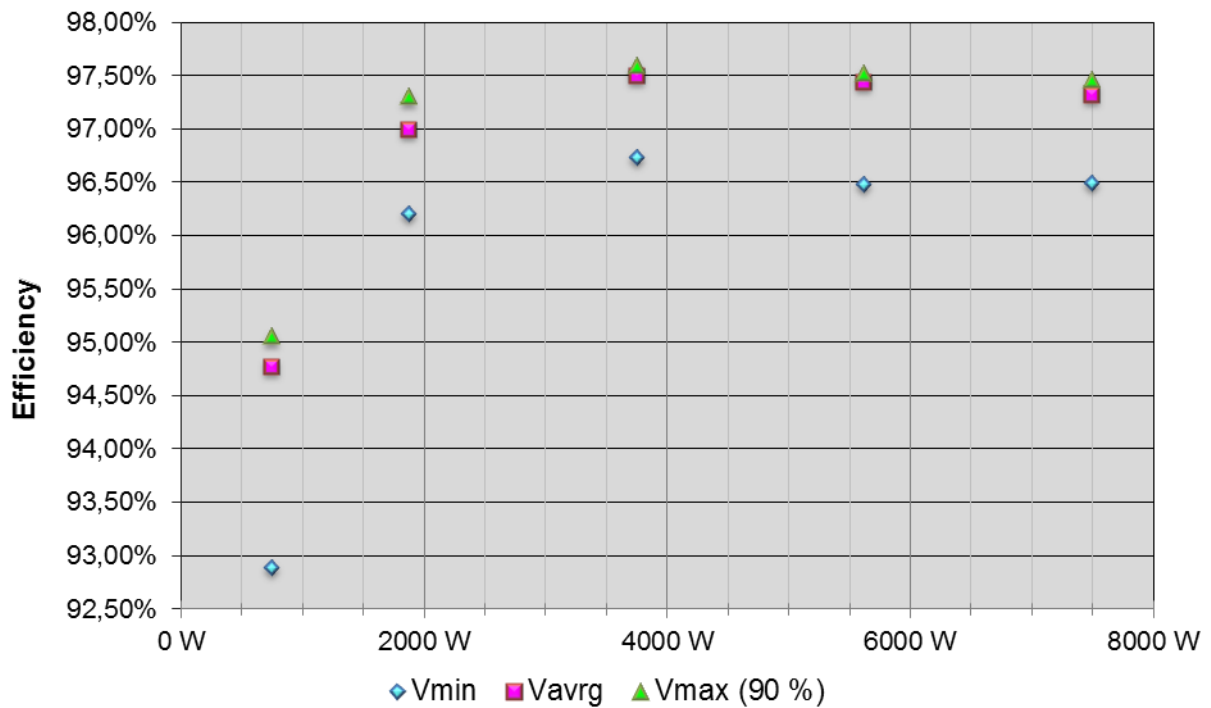
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Efficiency measurement conditions test results

Powador 9.0 TL3 – INT – A

Input voltage (V d.c.)		P _{AC} (nom. 7500 W)				
		10%	25%	50%	75%	100%
		750 W	1875 W	3750 W	5625 W	7500 W
		η				
Vmin	350	92,89%	96,20%	96,73%	96,48%	96,50%
Vnominal	575	94,77%	96,99%	97,50%	97,45%	97,32%
Vmax (90%)	720	95,05%	97,29%	97,59%	97,52%	97,45%



Measuring of efficiency

Extract from test report according the IEC 61683

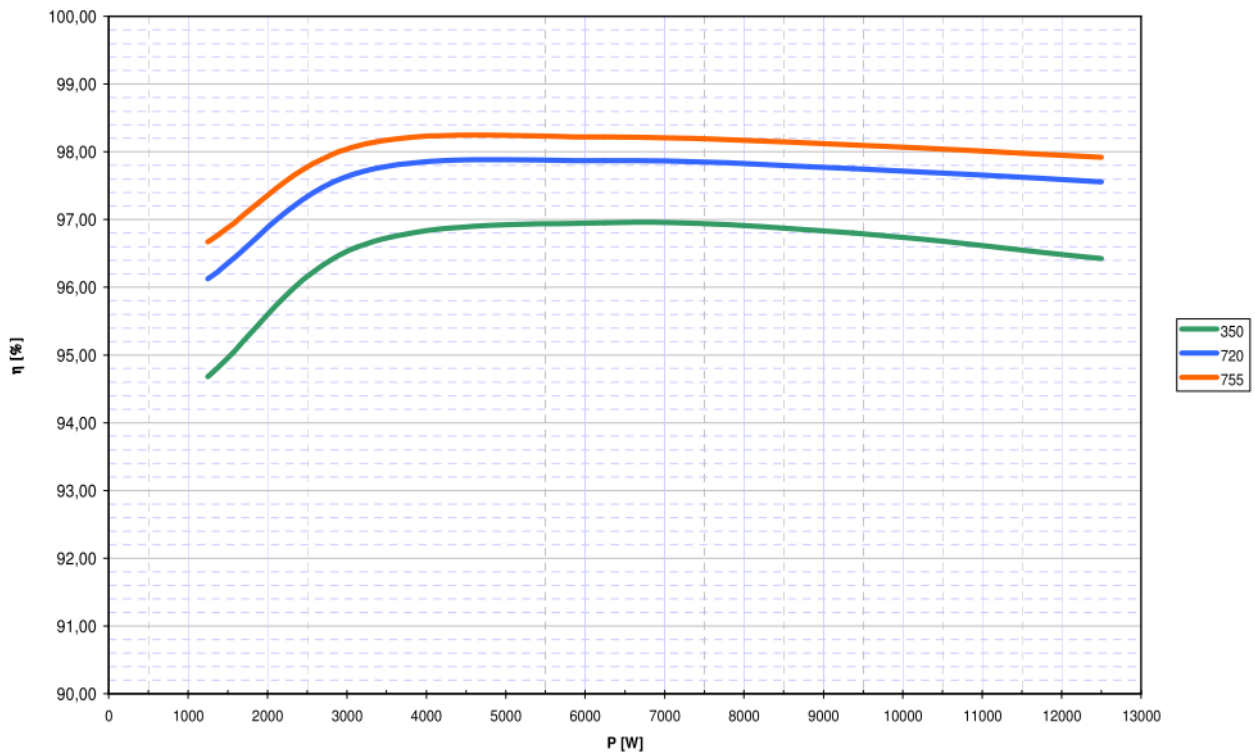
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Efficiency measurement conditions test results

Powador 10.0 TL3 – INT

Input voltage (Vdc)		P _{AC} (nom. 9000 W)				
		10%	25%	50%	75%	100%
		900 W	2250 W	4500 W	6750 W	9000 W
		η				
Vmin	350	92,84%	95,93%	96,75%	96,82%	96,70%
Vnominal	755	94,59%	97,28%	97,95%	98,03%	97,99%
Vmax (90%)	720	93,87%	96,83%	97,60%	97,70%	97,65%

Efficiency chart



Measuring of efficiency

Extract from test report according the IEC 61683

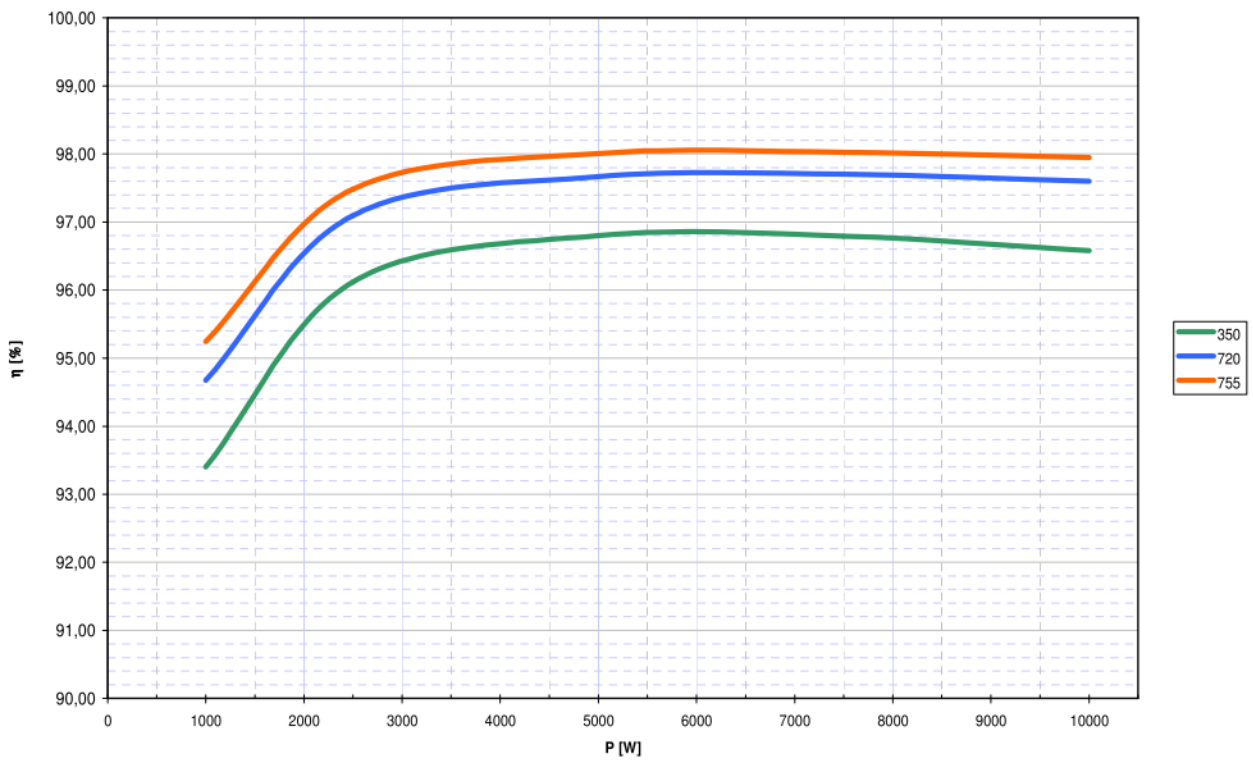
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Efficiency measurement conditions test results

Powador 12.0 TL3 – INT

Input voltage (Vdc)		P _{AC} (nom. 10000 W)				
		10%	25%	50%	75%	100%
		1000 W	2500 W	5000 W	7500 W	10000 W
		η				
Vmin	350	93,40%	96,12%	96,80%	96,79%	96,58%
Vnominal	755	95,24%	97,48%	98,01%	98,02%	97,95%
Vmax (90%)	720	94,67%	97,10%	97,67%	97,70%	97,60%

Efficiency chart



Measuring of efficiency

Extract from test report according the IEC 61683

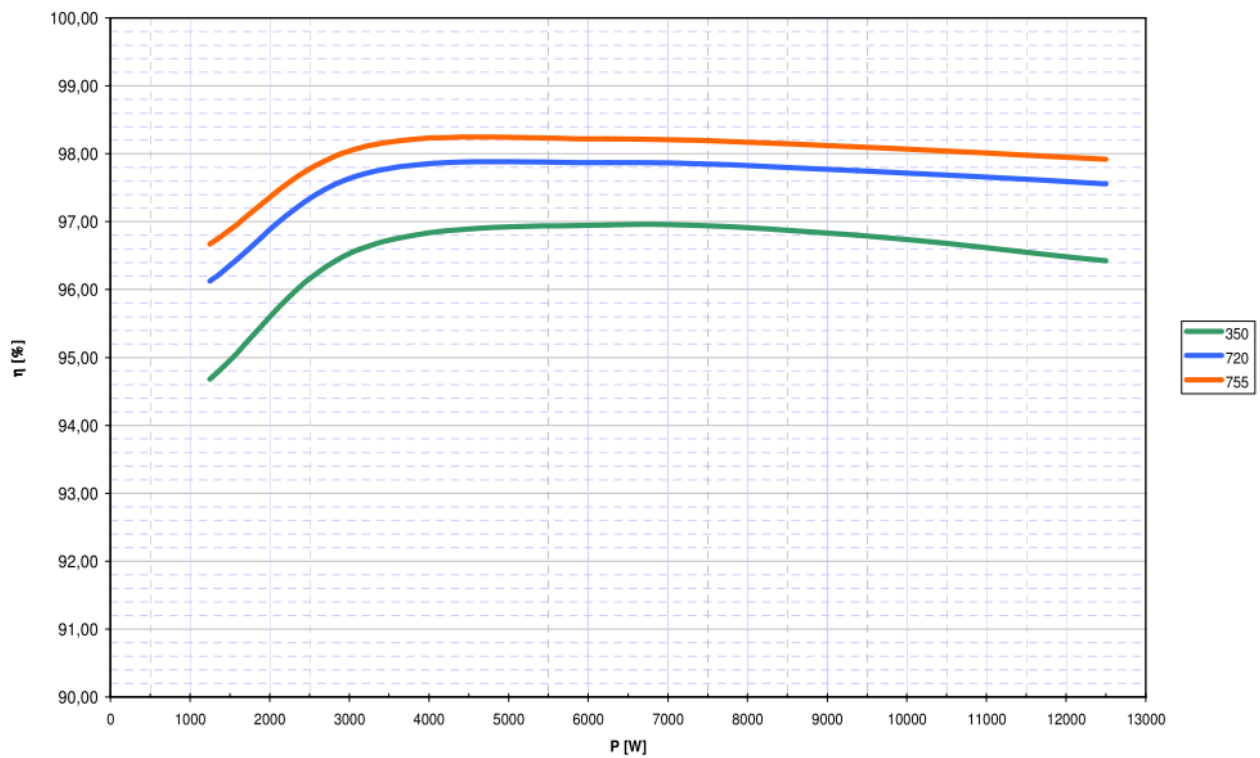
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Efficiency measurement conditions test results

Powador 14.0 TL3 – INT

Input voltage (Vdc)		P _{AC} (nom. 12500 W)				
		10%	25%	50%	75%	100%
		1250 W	3125 W	6250 W	9375 W	12500 W
		η				
Vmin	350	94,68%	96,59%	96,96%	96,80%	96,42%
Vnominal	755	96,67%	98,09%	98,22%	98,10%	97,92%
Vmax (90%)	720	96,13%	97,69%	97,87%	97,75%	97,56%

Efficiency chart



Measuring of efficiency

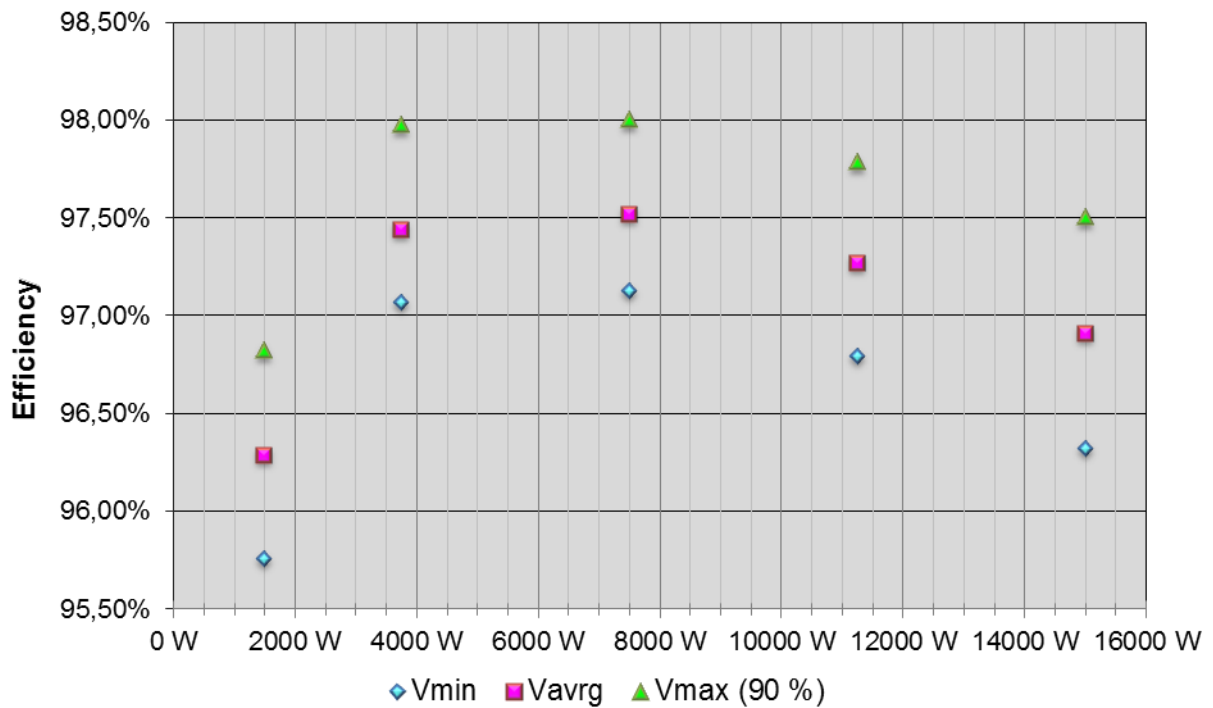
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Efficiency measurement conditions test results

Powador 18.0 TL3 – INT

Input voltage (Vdc)		P _{AC} (nom. 15000 W)				
		10%	25%	50%	75%	100%
		1500 W	3750 W	7500 W	11250 W	15000 W
		η				
Vmin	420V	95,76%	97,07%	97,13%	96,79%	96,32%
Vnominal	575V	96,29%	97,44%	97,52%	97,27%	96,91%
Vmax (90)	720V	96,82%	97,97%	98,00%	97,78%	97,50%



Measuring of efficiency

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Efficiency measurement conditions test results

Powador 20.0 TL3 – INT

Input voltage (Vdc)		P _{AC} (nom. 17000 W)				
		10%	25%	50%	75%	100%
		1700 W	4250 W	8500 W	12750 W	17000 W
		η				
Vmin	460	94,58%	96,50%	96,87%	96,78%	96,55%
Vnominal	575	94,91%	96,80%	97,16%	97,10%	96,92%
Vmax (90)	720	95,18%	97,18%	97,57%	97,57%	97,46%

