

# Growatt MIN 2500~6000TL-X

- Maximum efficiency 98.4%
- Dual MPP trackers
- Type II SPD on DC side
- Supports export control
- Touch key and OLED display



P O W E R  
- I N G O  
T O M O -  
R R O W O



Datasheet	MIN 2500TL-X	MIN 3000TL-X	MIN 3600TL-X	MIN 4200TL-X	MIN 4600TL-X	MIN 5000TL-X	MIN 6000TL-X
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### Input Data

Max. recommended PV power (for module STC)	3500W	4200W	5040W	5880W	6440W	7000W	8100W
Max. DC voltage	500V	500V	550V	550V	550V	550V	550V
Start voltage	100V	100V	100V	100V	100V	100V	100V
MPP work voltage range/nominal voltage	80V-500V /360V	80V-500V /360V	80V-550V /360V	80V-550V /360V	80V-550V /360V	80V-550V /360V	80V-550V /360V
Max. input current	12.5A/12.5A	12.5A/12.5A	12.5A/12.5A	12.5A/12.5A	12.5A/12.5A	12.5A/12.5A	12.5A/12.5A
Max. short-circuit current	16A/16A	16A/16A	16A/16A	16A/16A	16A/16A	16A/16A	16A/16A
Number of independent MPP trackers / strings per MPP tracker	2/1	2/1	2/1	2/1	2/1	2/1	2/1

### Output (AC)

Rated AC output power	2500W	3000W	3600W	4200W	4600W	5000W	6000W
Max. AC apparent power	2500VA	3000VA	3600VA	4200VA	4600VA	5000VA	6000VA
Max. output current	11.3A	13.6A	16A	19A	20.9A	22.7A	27.2A
AC nominal voltage	230V(160V-300V)	230V(160V-300V)	230V(160V-300V)	230V(160V-300V)	230V(160V-300V)	230V(160V-300V)	230V(160V-300V)
AC grid frequency	50Hz/60Hz ± 5Hz	50Hz/60Hz ± 5Hz	50Hz/60Hz ± 5Hz	50Hz/60Hz ± 5Hz	50Hz/60Hz ± 5Hz	50Hz/60Hz ± 5Hz	50Hz/60Hz ± 5Hz
Adjustable power factor	0.8leading... 0.8lagging	0.8leading... 0.8lagging	0.8leading... 0.8lagging	0.8leading... 0.8lagging	0.8leading... 0.8lagging	0.8leading... 0.8lagging	0.8leading... 0.8lagging
THDi	<3%	<3%	<3%	<3%	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase

### Efficiency

Max. efficiency	98.2%	98.2%	98.2%	98.4%	98.4%	98.4%	98.4%
Euro weighted efficiency	97.1%	97.1%	97.2%	97.5%	97.5%	97.5%	97.5%
MPPT efficiency	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%

### Protection Devices

DC reverse polarity protection	yes	yes	yes	yes	yes	yes	yes
DC switch	yes	yes	yes	yes	yes	yes	yes
DC surge protection	Type II	Type II	Type II	Type II	Type II	Type II	Type II
Output over current protection	yes	yes	yes	yes	yes	yes	yes
Output over voltage protection-varistor	yes	yes	yes	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes	yes	yes	yes
Integrated all - pole sensitive leakage current monitoring unit	yes	yes	yes	yes	yes	yes	yes

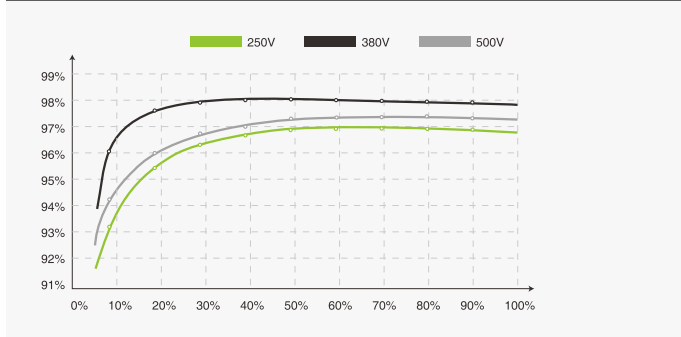
### General Data

Dimensions (W / H / D) in mm	375/350/160	375/350/160	375/350/160	375/350/160	375/350/160	375/350/160	375/350/160
Weight	10.8KG	10.8KG	10.8KG	10.8KG	10.8KG	10.8KG	10.8KG
Operating temperature range	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C
Noise emission (typical)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)
Altitude	4000m	4000m	4000m	4000m	4000m	4000m	4000m
Self-Consumption night	< 0.5W	< 0.5W	< 0.5W	< 0.5W	< 0.5W	< 0.5W	< 0.5W
Topology	Transformerless	Transformerless	Transformerless	Transformerless	Transformerless	Transformerless	Transformerless
Cooling concept	Natural	Natural	Natural	Natural	Natural	Natural	Natural
Environmental Protection Rating	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Relative humidity	100%	100%	100%	100%	100%	100%	100%

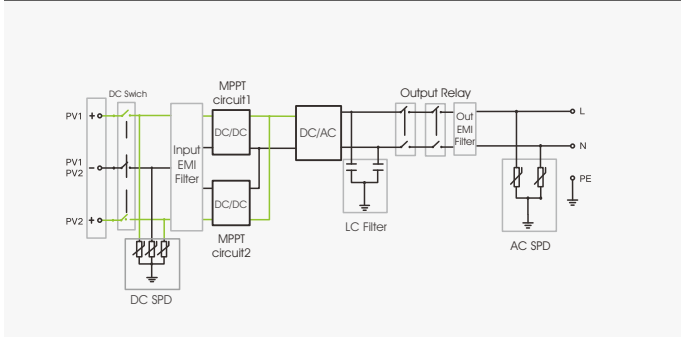
### Features

DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Connector	Connector	Connector	Connector	Connector	Connector	Connector
Display	OLED+LED	OLED+LED	OLED+LED	OLED+LED	OLED+LED	OLED+LED	OLED+LED
Interfaces: RS485 / USB / Wi-Fi / 4G / RF	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt	yes / yes / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt	yes / opt	yes / opt	yes / opt	yes / opt	yes / opt

### Growatt MIN 6000 TL-X efficiency



### Growatt MIN 2.5-6KTL-X topology



CE, IEC62109, G83, VDE0126-1-1, VFR2014, G59, AS4777, AS/NZS 3100, CEI0-21, VDE-AR-N4105, EN50438, CQC, IEC61683, IEC60068, IEC61727, IEC62116