

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



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

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twitter&facebook: Growatt New Energy

GR-CA-017-01

Smart
Photovoltaic
Inverter
Series

2020

Growatt powering tomorrow

GLOBAL NETWORK

ONLINE SMART SERVICE

Growatt has developed the OSS (Online Smart Service) management system for installers and distributors, which significantly improves service efficiency and customer satisfaction. On this platform, clients can monitor their installed PV plants, diagnose and configure the systems remotely, etc. In addition, the platform provides 24/7 online customer service. Growatt OSS reduces 60% onsite visits and the O&M costs.



PROFESSIONAL TRAINING

As a global leading inverter supplier, Growatt is dedicated to providing comprehensive and professional training in latest PV technologies, installation, monitoring, troubleshooting etc.



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COMPANY PROFILE

Growatt is a new energy enterprise dedicated to the R&D and manufacturing of PV inverters including on-grid, off-grid and storage inverters, and smart energy management solutions as well. The power capacity of Growatt on-grid inverters ranges from 750W to 250 kW, meanwhile its off-grid and storage inverters cover a power range from 1 kW to 630 kW.



Founded in 2010, Growatt has been dedicated to the R&D of PV solutions. Our R&D team has more than 200 professional engineers, most of whom have over 15 years of experience in the industry. Elegant, smart and powerful features have been brought by the R&D team to the latest inverters, which are very well received by customers across the globe. By far Growatt has achieved more than 70 patents and copyrights.

Localization is crucial to Growatt's global strategy. Over the years, Growatt has established an extensive service network with 13 offices and warehouses around the world, and we've also built strong and experienced local teams in key markets, such as Europe, Australia, India, and the Americas.

By the end of 2019, Growatt has shipped over 1.7 million inverters to over 100 countries and regions across the globe. According to the reports released by Wood Mackenzie and IHS Markit, Growatt was among the top 10 global PV inverter suppliers in 2019!

At Growatt, we are customer-oriented and we highly value our partnership with local clients. Since foundation, we have developed strong relationship with our partners around the world, and we look forward to bringing clean solar energy to more people.

2020

10TH CELEBRATING ANNIVERSARY!

2010



1,700,000+

Inverters Shipped Globally



100+

Countries with Installed Systems

BRAND POWER

WORLD
TOP 10

Growatt was among the world's top 10 PV inverter suppliers in 2019 according to the reports released by Wood Mackenzie and IHS Markit.



WORLD
TOP 3

Growatt came in the third place for world grid-connected single-phase PV inverter shipments in 2019 according to PV Inverter Market Tracker released by IHS Markit



WORLD
TOP 5

For three-phase string inverter shipments in 2019, Growatt was one of the global top 5 suppliers according to IHS Markit.



ALL QUALITY MATTERS AWARD



Growatt has received All Quality Matters Award for MAX inverter, which ranked first in TÜV Rheinland's PVE test program for high power commercial and industrial PV inverter.

TOP BRAND PV INVERTERS



Growatt has been awarded Top Brand PV Seals in Netherlands, Belgium and Australia by EuPD Research from 2018 to 2020.

TECH INNOVATION

DOUBLE A+

LEADING EFFICIENCY

In 2014, Growatt 20KTL3-HE inverter received double A+ rating by PHOTON Lab with maximum efficiency exceeding 99%.

99.06%

70+ PATENTS AND COPYRIGHTS

Our R&D team has achieved more than 70 patents and copyrights, including 59 Chinese patents, 6 international patents and 8 software copyrights.

70+

GROWATT QUALITY

Growatt is committed to high product quality and has introduced a comprehensive quality control system, the Five Quality Engineering System, which includes Design Engineering, Component Engineering, Test Engineering, Reliability Engineering, and Manufacturing Engineering.



Design Engineering



Component Engineering



Test Engineering



Reliability Engineering



Manufacturing Engineering



GROWATT SMART PHOTOVOLTAIC INVERTER SERIES



Residential on-grid inverters



Commercial on-grid inverters



Large commercial and utility grade on-grid inverters



Residential storage inverters



Monitoring solutions-x

MIC 750~3300 TL-X



- Maximum efficiency of 97.6%
- Compact design
- Touch key& OLED display
- Flexible interface
- AFCI optional

GROWATT · PRODUCT

Datasheet	MIC 750TL-X	MIC 1000TL-X	MIC 1500TL-X	MIC 2000TL-X	MIC 2500TL-X	MIC 3000TL-X	MIC 3300TL-X
Input data (DC)							
Max. recommended PV power (for module STC)	1050W	1400W	2100W	2800W	3500W	4200W	4290W
Max. DC voltage	500V	500V	500V	500V	550V	550V	550V
Start voltage	50V	50V	50V	50V	80V	80V	80V
Nominal voltage	120V	180V	250V	360V	360V	360V	360V
MPP voltage range	50V-500V	50V-500V	50V-500V	50V-500V	65V-550V	65V-550V	65V-550V
No. of MPP trackers	1						
No. of PV strings per MPP tracker	1						
Max. input current per MPP tracker	13A						
Max. short-circuit current per MPP tracker	16A						
Output data (AC)							
AC nominal power	750W	1000W	1500W	2000W	2500W	3000W	3300W
Max. AC apparent power	750VA	1000VA	1500VA	2000VA	2500VA	3000VA	3300VA
Nominal AC voltage(range*)	230V (180-280V)						
AC grid frequency(range*)	50/60 Hz (45-55Hz/55-65 Hz)						
Max. output current	3.6A	4.8A	7.1A	9.5A	11.9A	14.3A	14.3A
Adjustable power factor	0.8leading...0.8lagging						
THDI	<3%						
AC grid connection type	Single phase						
Efficiency							
Max. efficiency	97.4%	97.4%	97.4%	97.4%	97.6%	97.6%	97.6%
European efficiency	96.5%	96.5%	97.0%	97.0%	97.0%	97.1%	97.1%
MPPT efficiency	99.9%						
Protection devices							
DC reverse polarity protection	Yes						
DC switch	NO						
AC/DC surge protection	Type III / Type III						
Insulation resistance monitoring	Yes						
AC short-circuit protection	Yes						
Ground fault monitoring	Yes						
Grid monitoring	Yes						
Anti-islanding protection	Yes						
Residual-current monitoring unit	Yes						
AFCI protection	Optional						
General data							
Dimensions (W / H / D)	274/254/138mm						
Weight	6kg	6kg	6kg	6kg	6.2kg	6.2kg	6.2kg
Operating temperature range	-25°C ... +60°C						
Nighttime power consumption	< 0.5W						
Topology	Transformerless						
Cooling	Natural convection						
Protection degree	IP65						
Relative humidity	0-100%						
Altitude	4000m						
DC connection	H4/MC4(Optional)						
AC connection	Connector						
Display	OLED+LED/WIFI+APP						
Interfaces: RS485 / USB/WI-FI / GPRS/ RF/LAN	Yes/Yes/Optional/Optional/Optional /Optional						
Warranty: 10 years	Yes						

CE, AS4777, AS/NZS 3100, CEI 0-21, VDE-AR-N 4105, VDE 0126-1-1, UTE C 15-712-1, EN50549, IEC 60068, IEC 61683, IEC 62116, IEC 61727, INMETRO, G98, C10/C11, UNE217001, UNE206007, PO12.2

* The AC voltage and frequency range may vary depending on specific country grid standard. All specifications are subject to change without notice.

MIN 2500~6000 TL-XE



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



GROWATT · PRODUCT

Datasheet	MIN 2500TL-XE	MIN 3000TL-XE	MIN 3600TL-XE	MIN 4200TL-XE	MIN 4600TL-XE	MIN 5000TL-XE	MIN 6000TL-XE
Input data (DC)							
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						
Nominal voltage	360V						
MPP voltage range	80V-500V	80V-500V	80V-550V	80V-550V	80V-550V	80V-550V	80V-550V
No. of MPP trackers	2						
No. of PV strings per MPP tracker	1						
Max. input current per MPP tracker	12.5A						
Max. short-circuit current per MPP tracker	16A						
Output data (AC)							
AC nominal power	2500W	3000W	600W	4200W	4600W	5000W	6000W
Max. AC apparent power	2500VA	3000VA	3600VA	4200VA	4600VA	5000VA	6000VA
Nominal AC voltage(range*)	230V (180-280V)						
AC grid frequency(range*)	50/60 Hz (45-55Hz/55-65 Hz)						
Max. output current	11.3A	13.6A	16A	19A	20.9A	22.7A	27.2A
Adjustable power factor	0.8leading...0.8lagging						
THDI	<3%						
AC grid connection type	Single phase						
Efficiency							
Max. efficiency	98.2%	98.2%	98.2%	98.4%	98.4%	98.4%	98.4%
European efficiency	97.1%	97.1%	97.2%	97.5%	97.5%	97.5%	97.5%
MPPT efficiency	99.9%						
Protection devices							
DC reverse polarity protection	Yes						
DC switch	NO						
DC/AC surge protection	Type II / Type III						
Insulation resistance monitoring	Yes						
AC short-circuit protection	Yes						
Ground fault monitoring	Yes						
Grid monitoring	Yes						
Anti-islanding protection	Yes						
Residual-current monitoring unit	Yes						
AFCI protection	Optional						
General data							
Dimensions (W / H / D)	375/350/160mm						
Weight	10.8kg						
Operating temperature range	-25°C ... +60°C						
Nighttime power consumption	< 1W						
Topology	Transformerless						
Cooling	Natural convection						
Protection degree	IP65						
Relative humidity	0-100%						
Altitude	4000m						
DC connection	H4/MC4(Optional)						
AC connection	Connector						
Display	OLED+LED/WIFI+APP						
Interfaces: RS485 / USB/WI-FI / GPRS/ RF/LAN	Yes/Yes/Optional/Optional/Optional /Optional						
Warranty: 10 years	Yes						
CE, CEI 0-21, VDE-AR-N 4105, VDE 0126-1-1, UTE C 15-712-1, EN 50549, IEC 62116, IEC 61727, G99, C10/C11, UNE217001, UNE206007, PO12.2							

* The AC voltage and frequency range may vary depending on specific country grid standard. All specifications are subject to change without notice.

Growatt 3000~6000 TL3-S



3 phase grid-tied inverter for residential or small commercial rooftop application. fanless design, compact and easy for installation.

- Max. Efficiency 98%
- Dual MPP trackers
- Supports export limitation
- Integrated DC switch
- Max.DC voltage 1000VDC
- Natural cooling



GROWATT · PRODUCT

Datasheet	3000TL3-S	4000TL3-S	5000TL3-S	6000TL3-S
Input Data				
Max. recommended PV power (for module STC)	3600W	4800W	6000W	7200W
Max. DC voltage	1000V			
Start Voltage	140V			
MPPT voltage range	140V-1000V			
Nominal voltage	620V			
Max. input current	11A/11A			
Number of independent MPP trackers/strings per MPP tracker	2/1			
Output (AC)				
Rated AC output power	3000W	4000W	5000W	6000W
Max. AC apparent power	3000VA	4000VA	5000VA	6000VA
Max. output current	5.1A	6.8A	8.5A	10.2A
AC nominal voltage	230V/400V			
AC grid frequency	50Hz/60Hz , ±5Hz			
Power factor	0.8leading - 0.8lagging			
THDi	<3%			
AC grid connection type	3W+N+PE			
Efficiency				
Max. efficiency	97.5%	97.8%	98.0%	98.0%
Euro - eta	96.5%	96.7%	96.9%	97.1%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%
Protection Devices				
DC reverse polarity protection	Yes			
DC switch	Yes			
Output over current protection	Yes			
Output AC overvoltage Protection - Varistor	Yes			
Ground fault monitoring	Yes			
Grid monitoring	Yes			
Integrated all-pole sensitive leakage current monitoring unit	Yes			
General Data				
Dimensions (W / H / D)	480/448/200mm			
Weight	21.2kg			
Operating temperature range	-25 °C ... +60 °C			
Altitude	3000m			
Self-consumption night	< 0.5W			
Topology	Transformerless			
Cooling concept	Natural			
Environmental Protection Rating	IP65			
Relative humidity	0~100%			
Features				
DC connection	H4/MC4(Optional)			
AC connection	Connector			
Display	LCD			
Interfaces:RS232/RS485/RF/Ethernet/Wi-Fi	Yes/Yes/Optional/Optional/Optional			
Warranty: 10 years	Yes			

CE, IEC 62109-1/2, VDE 0126-1-1, Greece, UTE C 15-712, VDE-AR-N4105, G98, EN50438, EN50549, CEI 0-21, AS4777, IEC 61727, IEC 62116, CQC, C10/11, UNE217001, UNE206007, PO12.2, TOR Erzeuger

Growatt 7000~11000 TL3-S



3 phase grid-tied inverter for residential or small commercial rooftop application. fanless design, compact and easy for installation.

- Max. Efficiency 98.4%
- Dual MPP trackers
- Supports export limitation
- Integrated DC switch
- Max.DC voltage 1000VDC
- Natural cooling

GROWATT · PRODUCT

Datasheet	7000TL3-S	8000TL3-S	9000TL3-S	10000TL3-S	11000TL3-S
Input data					
Max. recommended PV power (for module STC)	8400W	9600W	10800W	12000W	13200W
Max. DC voltage	1000V				
Start Voltage	160V				
MPPT voltage range	160V-1000V				
Nominal voltage	600V				
Max. input current	11.5A/11.5A				
Number of independent MPP trackers/strings per MPP tracker	2/1				
Input (AC)					
Rated AC output power	7kW	8kW	9kW	10kW	11kW
Max. AC apparent power	7.7kVA	8.8kVA	9.9kVA	11kVA *	12.1kVA
Max. output current	11.7A	13.3A	15A	16.7A	18.3A
AC nominal voltage	230V/400V ; 320-478V				
AC grid frequency	50/60Hz, ±5Hz				
Power factor	0.8leading - 0.8lagging				
THDi	<3%				
AC grid connection type	3W+N+PE				
Efficiency					
Max. efficiency	98.3%	98.3%	98.4%	98.4%	98.4%
Euro - eta	97.5%	97.8%	98%	98%	98%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%	99.5%
Protection Devices					
DC reverse polarity protection	Yes				
DC switch	Yes				
Output over current protection	Yes				
Output AC overvoltage Protection - Varistor	Yes				
Ground fault monitoring	Yes				
Grid monitoring	Yes				
Integrated all-pole sensitive leakage current monitoring unit	Yes				
General data					
Dimensions (W / H / D)	480/448/200mm				
Weight	21.6kg				
Operating temperature range	-25 °C ... +60 °C				
Altitude	3000m				
Self-consumption night	< 0.5W				
Topology	Transformerless				
Cooling concept	Natural				
Environmental Protection Rating	IP65				
Relative humidity	0~100%				
Features					
DC connection	H4/MC4(opt)				
AC connection	Screw terminal				
Display	LCD				
Interfaces:RS232/RS485/RF/WI-FI	Yes/Yes/Optional/Optional				
Warranty:10 years	Yes				

CE, IEC62109-1/2, VDE 0126-1-1, Greece, VFR 2014, VDE-AR-N4105, G98, EN50438, EN50549, CEI 0-21 AS4777, IEC 61727, IEC 62116, CQC, UNE206007, UNE217001, PO1.2.2, C10/11, TOR Erzeuger

* For Belgium C10/C11, Growatt 10000TL3-S max. output power is limit to 10000VA

Growatt 12000~15000 TL3-S



3 phase grid-tied inverter for commercial rooftop application. fanless design, compact and easy for installation.

- Max. Efficiency 98.4%
- Dual MPP trackers
- Supports export limitation
- Integrated DC switch
- Max.DC voltage 1000VDC
- Natural cooling



GROWATT · PRODUCT

Datasheet	12000TL3-S	13000TL3-S	15000TL3-S
Input data			
Max. recommended PV power (for module STC)	14400W	15600W	18000W
Max. DC voltage		1000V	
Start Voltage		160V	
MPPT voltage range		160V-1000V	
Nominal voltage		600V	
Max. input current		20A/10A	
Number of independent MPP trackers/strings per MPP tracker		2/2+1	
Output (AC)			
Rated AC output power	12kW	13kW	15kW
Max. AC apparent power	13.2kVA	14.3kVA	16.5kVA
Max. output current	19A	20.6A	23.8A
AC nominal voltage		230V/400V	
AC grid frequency		50/60Hz, ±5Hz	
Power factor		0.8leading - 0.8lagging	
THDI		<3%	
AC grid connection type		3W+N+PE	
Efficiency			
Max. efficiency	98.4%	98.4%	98.4%
Euro - eta	97.8%	98%	98%
MPPT efficiency	99.5%	99.5%	99.5%
Protection Devices			
DC reverse polarity protection		yes	
DC switch		yes	
Output over current protection		yes	
Output AC overvoltage Protection - Varistor		yes	
Ground fault monitoring		yes	
Grid monitoring		yes	
Integrated all-pole sensitive leakage current monitoring unit		yes	
General Data			
Dimensions (W / H / D)		480/448/200mm	
Weight		23.5kg	
Operating temperature range		-25 °C ... +60 °C	
Self-Consumption (night)		< 0.5W	
Topology		Transformerless	
Cooling concept		Natural	
Environmental Protection Rating		IP65	
Altitude		3000m	
Relative Humidity		0~100%	
Features			
DC connection		H4/MC4(opt)	
AC connection		Screw terminal	
Display		LCD	
Interfaces:RS232/RS485/RF/Ethernet/Wi-Fi		yes/yes/opt/opt/opt	
Warranty:10 years		yes	

CE, IEC 62109-1/2, VDE 0126-1-1, Greece, VFR 2014, VDE-AR-N4105, G99, EN50438, EN50549, CEI 0-21, AS4777, IEC 61727, IEC 62116, CQC, C10/11

MID 15~20K TL3-X



- Max. Efficiency 98.75%
- 40% compact and lighter
- Dual MPP trackers
- Supports export control
- Touch key and OLED display
- Type II SPD on AC and DC side

GROWATT · PRODUCT

Datasheet	MID 15KTL3-X	MID 17KTL3-X	MID 20KTL3-X
Input data (DC)			
Max. recommended PV power (for module STC)	22500W	25500W	30000W
Max. DC voltage		1100V	
Start Voltage		250V	
Nominal voltage		580V	
MPPT voltage range		160V-1000V	
No. of MPP trackers		2	
No. of PV strings per MPP tracker		2	
Max. input current per MPPT tracker		25A	
Max. short circuit current per MPPT		32A	
Output data (AC)			
Rated AC output power	15000W	17000W	20000W
Max. AC apparent power	16600VA	18800VA	22000VA
Nominal AC voltage(range*)		220V/380V, 230V/400V (340-440V)	
AC grid frequency;(range*)		50/60 Hz (45-55Hz/55-65 Hz)	
Max. output current	24.2A	27.4A	31.9A
Adjustable power factor		0.8leading...0.8lagging	
THDI		< 3%	
AC grid connection type		3W+N+PE	
Efficiency			
Max. efficiency		98.75%	
European efficiency		98.6%	
MPPT efficiency		99.9%	
Protection devices			
DC reverse polarity protection		Yes	
DC Switch		Yes	
AC/DC surge protection		Type II / Type II	
Insulation resistance monitoring		Yes	
AC short-circuit protection		Yes	
Ground fault monitoring		Yes	
Grid monitoring		Yes	
Anti-islanding protection		Yes	
Residual-current monitoring unit		Yes	
String monitoring		Optional	
AFCl protection		Optional	
General data			
Dimensions (W / H / D)		525/395/222mm	
Weight		23kg	
Operating temperature range		-25 °C ... +60 °C	
Self-Consumption (night)		< 1W	
Topology		Transformerless	
Cooling		Smart air cooling	
Protection degree		IP65	
Relative Humidity		0~100%	
Altitude		4000m	
DC connection		H4/MC4(Optional)	
AC connection		Cable gland+OT terminal	
Display		OLED+LED/WIFI+APP	
Interfaces: RS485 / USB / WIFI/ GPRS / RF/ LAN		Yes/Yes /Optional/Optional/Optional/Optional	
Warranty:10 years		Yes	

CE, VDE0126, Greece, EN50549, C10/C11, UTE C 15-712, IEC62116, IEC61727, IEC 60068, IEC 61683, CE10-21, N4105, TOR Erzeuger, G98/G99, G100, UNE217001, UNE206007, PO12.2, KSC8565

*The AC voltage range and frequency range may vary depending on specific country grid standard. All specifications are subject to change without notice.

Growatt 25000~40000 TL3-S



3 phase grid-tied inverter for commercial rooftop or ground mounted application. integrated wire box for comprehensive protections.

- Max. Efficiency 99%
- Dual MPP trackers
- Supports export limitation
- Integrated DC switch
- String fuse and string monitoring
- Anti-PID function
- Type II DC and AC SPDs

GROWATT · PRODUCT

Datasheet	25000TL3-S	30000TL3-S	33000TL3-S	40000TL3-NS
Input data				
Max recommended PV Power (for module STC)	31250W	37500W	41250W	50000W
Max DC voltage	1000V			
Start Voltage	250V			
MPPT voltage range	200V - 1000V			
Nominal voltage	580V			
Max. input current	37.5A	34A/34A	38A / 38A	38A / 38A
Max. input current per string	12.5A			
Number of MPP trackers / strings per MPP tracker	2/3	2/4	2/4	2/4
Output (AC)				
Rated AC output power	25kW	30kW	33kW	40kW
Max. AC apparent power	27.7kVA	33.3kVA*	36.6kVA	44.4kVA
Max. output current	40.3A	48.3A	53A	64.5A
AC nominal voltage	230V/400V			
AC grid frequency	50/60Hz, ±5Hz			
Power factor	0.8 leading - 0.8 lagging			
THDI	<3%			
AC grid connection type	3W+N+PE			
Efficiency				
Max. efficiency	98.7%	98.9%	98.9%	99%
Euro - eta	98.4%	98.4%	98.4%	98.5%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%
Protection Devices				
DC reverse polarity protection	Yes			
DC Switch	Yes			
DC Surge protection	Type II			
Ground fault monitoring	Yes			
Output short circuit protection	Yes			
AC Surge protection	Type II			
String Fuse protection	Yes			
String fault monitoring	Yes			
Anti-PID protection	Yes			
General data				
Dimensions (W / H / D)	470/754/270mm			
Weight	48kg			
Operating temperature range	-25 °C ... +60 °C			
Altitude	4000m			
Self-consumption night	< 1W			
Topology	Transformerless			
Cooling concept	Smart cooling			
Environmental Protection Rating	IP65			
Relative humidity	0~100%			
Features				
Display	Graphic LCD			
Interfaces: RS232/R485/WIFI/LAN/GPRS	Yes/Yes/Optional/Optional/Optional			
Warranty: 5 years / 10 years	Yes/Optional			

CE, IEC 62109-1/2, IEC 61727, IEC 62116, VDE 0126-1-1, Greece, VFR 2014, CEI 0-21, CEI 0-16, VDE-AR-N4105, EN50438, EN50549, G99/3, AS 4777, PEA, IEC 60529, IEC 60068, IEC 61683, DRRG, C10/11, UNE217001, UNE206007, PO12.2.

*For Belgium C10/C11, Growatt 30000TL3-S max. output power is limit to 30kVA

MAX

50~80KTL3 LV



Suitable for both large scale commercial rooftop and ground mounted solar plants, Growatt Max series grid-tied inverter is with upto 80kW big capacity. First quad-core inverter in the industry, provides it fast processing capability to handle transient grid fault. with optimized design, it also brings 98.67% high weighted China efficiency, 0.3% higher than industry level, along with extraordinary 6/7 MPP trackers, ensures high yield of system.

- 6/7 MPPTs
- Smart diagnosis
- High efficiency up to 99%
- Local WIFI connection
- String monitoring
- AC&DC type II SPD

GROWATT · PRODUCT

Datasheet	MAX 50KTL3 LV	MAX 60KTL3 LV	MAX 70KTL3 LV	MAX 80KTL3 LV
Input data (DC)				
Max. recommended PV power (for module STC)	75000W	90000W	105000W	120000W
Max. DC voltage	1100V			
Start voltage	250V			
Nominal voltage	585V	585V	600V	600V
MPPT voltage range	200V-1000V			
No. of MPP trackers	6	6	7	7
No. of PV strings per MPP tracker	2			
Max. input current per MPP tracker	26A			
Max. short-circuit current per MPP tracker	32A			
Output data (AC)				
AC nominal power	50000W	60000W	70000W	80000W
Max. AC apparent power	55500VA	66600VA	77700VA	88800VA
Nominal AC voltage(range*)	220V/380V, 230V/400V (340-440V)			
AC grid frequency(range*)	50/60 Hz (45-55Hz/55-65 Hz)			
Max. output current	80.5A	96.6A	112.7A	128.8A
Adjustable power factor	0.8leading ...0.8lagging			
THDI	< 3%			
AC grid connection type	3W+N+PE			
Efficiency				
Max. efficiency	98.8%	98.8%	99%	99%
European efficiency	98.4%	98.4%	98.5%	98.5%
MPPT efficiency	99.9%			
Protection devices				
DC reverse polarity protection	Yes			
DC switch	Yes			
DC surge protection	Type II / Type II			
Insulation resistance monitoring	Yes			
AC short-circuit protection	Yes			
Ground fault monitoring	Yes			
Grid monitoring	Yes			
Anti-islanding protection	Yes			
Residual-current monitoring unit	Yes			
String monitoring	Yes			
AFCI protection	Optional			
Anti-PID function	Optional			
General data				
Dimensions (W / H / D)	860/600/300mm			
Weight	82kg	82kg	86kg	86kg
Operating temperature range	-25°C ... +60°C			
Self-consumption	< 1W			
Topology	Transformerless			
Cooling	Smart air cooling			
Protection degree	IP65			
Relative humidity	0-100%			
Altitude	4000m			
DC connection	H4/MC4(Optional)			
AC connection	Cable gland+OT terminal			
Display	LED/WIFI+APP			
Interfaces: RS485 / USB /WIFI/ RF/GPRS	Yes/Yes /Optional/Optional/Optional			
Warranty: 5 years / 10 years	Yes /Optional			
CE , VDE0126, Greece, EN50438, EN50549, C10/C11, UTE C 15-712, IEC62116, IEC61727, IEC 60068, IEC 61683, CEI0-21, CEI 0-16, N4105, BDEW, DRRG, TOR Erzeuger G98/G99, G100, AS/NZS3100, AS4777, UNE217001, UNE206007, PO12.2, NRS 097-2-1, MEA , PEA , KSC8565				

* The AC voltage range and frequency range may vary depending on specific country grid standard. All specifications are subject to change without notice.

Growatt

SPH 3000~6000



Single phase all-in-one hybrid inverter ideal for home systems. stunning IP65 protection level, more durable and flexible for installation; multiple programmable working modes, decide by yourself how to realize self-sufficiency and make the max out of your system; the EPS output can even provide backup supply during grid absence; comprehensive accessories including battery, meter and datalogger optional for different application scenarios.

- Dual MPP trackers
- IP65 & Natural cooling
- Programmable working modes
- Supports Export Control
- Online Smart Service



GROWATT · PRODUCT

Datasheet	SPH 3000	SPH 3600	SPH 4000	SPH 4600	SPH 5000	SPH 6000
DC input data						
Max. recommended PV power	6600W	6600W	6600W	8000W	8000W	8000W
Start voltage				150V		
Max. PV voltage				550V		
PV voltage range				120V-550V		
MPPT voltage range/ nominal voltage				150V-550V /360V		
Max. input current of tracker A/B				12A/12A		
Number of MPP trackers / strings per MPP tracker				2/1		
AC Output						
Rated AC output power	3000W	3680W	4000W	4600W	4999W	6000W
Max. AC apparent power	3000VA	3680VA	4000VA	4600VA	5000VA	6000VA
Max. output current	16A	16A	22A	22A	22A	27A
Nominal AC output voltage				230V		
Nominal grid frequency				50/60Hz, ±5Hz		
Power factor at rated power				1		
Displacement power factor				0.8leading...0.8lagging		
THDI				<3%		
AC output power(Backup)						
Max. output power				3000W		
Rated AC output voltage				230Vac		
Rated AC output frequency				50/60Hz		
Automatic switchover time				<0.5S		
Battery data						
Battery voltage range				42~59V		
Max. charging voltage				58V		
Max charging and discharging current				66A		
Max charging and discharging power				3000W		
Battery type				lithium /Lead-acid		
Capacity of battery				50-2000AH		
Efficiency						
Max. efficiency	97.5%	97.5%	97.5%	97.6%	97.6%	97.7%
Euro European efficiency	97.0%	97.0%	97.0%	97.1%	97.1%	97.1%
MPPT efficiency				99.9%		
Protection devices						
DC switch				Yes		
DC reverse polarity protection				Yes		
Battery reverse protection				Yes		
Output over current protection				Yes		
Output over voltage protection				Yes		
Ground fault monitoring				Yes		
Grid monitoring				Yes		
				Yes		
General Data						
Dimensions (W / H / D)				547/516/170mm		
Weight				27kg		
Operating temperature range				-25°C ... +60°C		
Altitude				2000m		
Self-Consumption				< 3 W		
Topology				Transformerless		
Cooling concept				Natural		
Environmental Protection Rating				IP65		
Relative humidity				100%		
Features						
DC connection				MC4/H4(Optional)		
Interfaces: RS232/RS485/CAN/USB				Yes		
Monitor : RF/WIFI/GPRS				Optional		
Display				LCD		
Warranty: 10 years				Yes		

SPH 4000~10000 TL3 BH



- Dual MPP trackers
- IP65 & Natural cooling
- Programmable working modes
- Supports Export Control
- Online Smart Service



GROWATT · PRODUCT

Datasheet	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
Input data(PV)						
Max. recommended PV power (for module STC)	5200W	6500W	7800W	9100W	10400W	13000W
Max. DC voltage	1000					
Start voltage	160V					
MPP voltage range	160V-1000V / 600V					
No. of MPP trackers	2					
No. of PV strings per MPP tracker	1					
Max. input current per MPP tracker	12A					
Max. short-circuit current per MPP tracker	15A					
Output data(AC)						
AC nominal power	4000W	5000W	6000W	7000W	8000W	10000W
Max. AC apparent power	4000VA	5000VA	6000VA	7000VA	8000VA	10000VA
Nominal AC voltage (range*)	230V/400V (310~476V)					
AC grid frequency (range*)	50Hz/60Hz (45Hz-55Hz/55Hz-65Hz)					
Max. output current	6.1A	7.6A	9.1A	10.6A	12.1A	15.2A
Adjustable power factor	0.8leading...0.8lagging					
THDI	< 3%					
AC grid connection type	3W+N+PE					
Battery data (DC)						
Battery voltage range	100~550V					
Max charging and discharging current	25A					
Continuous charging and discharging power	4000W	5000W	6000W	7000W	8000W	10000W
Type of battery	Lithium battery					
Backup power(AC)						
Max. AC output power	4000W	5000W	6000W	7000W	8000W	10000W
Max. AC apparent power	4000VA	5000VA	6000VA	7000VA	8000VA	10000VA
Max. output current	6.1A	7.6A	9.1A	10.6A	12.1A	15.2A
Nominal AC output voltage	230V/400V					
Nominal AC output frequency	50/60HZ					
THDv	< 3%					
Switch time	< 0.5S					
Efficiency						
MAX. efficiency	97.6%	97.8%	98.0%	98.2%	98.2%	98.2%
European efficiency	97.0%	97.2%	97.3%	97.4%	97.4%	97.5%
Protection devices						
DC switch	Yes					
DC reverse polarity protection	Yes					
AC/DC surge protection	Type II					
Battery reverse protection	Yes					
AC short-circuit protection	Yes					
Ground fault monitoring	Yes					
Grid monitoring	Yes					
Anti-islanding protection	Yes					
Residual-current monitoring unit	Yes					
Insulation resistance monitoring	Yes					
General data						
Dimensions (W / H / D)	505/453/198mm					
Weight	28kg					
Operating temperature range	-25 °C ... +60 °C					
Nighttime power consumption	< 13W					
Topology	Transformerless					
Cooling	Natural					
Protection degree	IP65					
Relative humidity	0~100%					
Altitude	3000m					
DC connection	H4 / MC4 (Optional)					
AC connection	Connector					
Display	LCD+LED					
Interfaces: RS232/RS485/CAN/USB	Yes					
Monitor : RF/WIFI/GPRS	Optional					
Warranty:10 years	Yes					

SPA 3000TL BL



With Growatt SPA series AC-coupled battery inverter, it's quite easy to update any existing solar system to storage system at lower cost, together with Growatt ShineServer Portal, check your system's performance and energy consumption at any time.

- IP65 & Natural cooling
- Supports retrofit & New system
- Compatible with 1 & 3 phase system
- Workmodes programmable
- Online Smart Service

Datasheet	SPA3000TL BL
Output data(AC)	
AC nominal power	3000W
Max. AC apparent power	3000VA
Nominal AC voltage (range*)	230V (180V-270V)
AC grid frequency (range*)	50Hz/60Hz (45Hz-55Hz/55Hz-65Hz)
Max. output current	16A
Adjustable power factor	0.8leading...0.8lagging
THDi	<3%
AC grid connection type	Single phase
Battery data (DC)	
Battery voltage range	42~59V
Max charging and discharging current	66A
Continuous charging and discharging power	3000W
Type of battery	Lithium /Lead-acid
Backup power(AC)	
Max. AC output power	3000W
Max. AC apparent power	3000VA
Max. output current	16A
Nominal AC output voltage	230Vac
Nominal AC output frequency	50/60HZ
THDv	<3%
Switch time	0.5S
Protection devices	
AC surge protection	Yes
Battery reverse protection	Yes
AC short-circuit protection	Yes
Ground fault monitoring	Yes
Grid monitoring	Yes
Anti-islanding protection	Yes
Residual-current monitoring unit	Yes
Insulation resistance monitoring	Yes
General data	
Dimensions (W / H / D)	428/458/180mm
Weight	17kg
Operating temperature range	-25°C ... +60°C
Nighttime power consumption	< 4W
Topology	transformerless
Cooling	Natural
Protection degree	IP65
Relative humidity	0~100%
Altitude	2000m
DC connection	MC4/H4(Optional)
AC connection	Cable gland+OT terminal
Display	LCD+LED
Interfaces: RS232/RS485/CAN/USB	Yes
Monitor: RF/WIFI/GPRS	Optional
Warranty:10 years	Yes

CE, IEC62109, G98, VDE0126-1-1, VDE-AR-N4105, CEI 0-21, IEC62116&IEC61727, EN50438, EN50549, AS4777, AS/NZS 3100, C10/11

SPA 4000~10000 TL3 BH



- Ip65 & Natural cooling
- Supports Retrofit & New Systems
- Three work modes programmable
- Compatible with high-voltage battery
- Online Smart Service



GROWATT · PRODUCT

Datasheet	SPA 4000TL3 BH	SPA 5000TL3 BH	SPA 6000TL3 BH	SPA 7000TL3 BH	SPA 8000TL3 BH	SPA 10000TL3 BH
Output data(AC)						
AC nominal power	4000W	5000W	6000W	7000W	8000W	10000W
Max. AC apparent power	4000VA	5000VA	6000VA	7000VA	8000VA	10000VA
Nominal AC voltage(range*)	230V/400V (310~476V)					
AC grid frequency(range*)	50Hz/60Hz (45Hz-55Hz/55Hz-65Hz)					
Max. output current	6.1A	7.6A	9.1A	10.6A	12.1A	15.2A
Adjustable power factor	0.8leading...0.8lagging					
THDI	<3%					
AC grid connection type	3W+N+PE					
Output data(AC)						
Battery voltage range	100~550V					
Max charging and discharging current	25A					
Continuous charging and discharging power	4000W	5000W	6000W	7000W	8000W	10000W
Type of battery	Lithium battery					
Backup power(AC)						
Max. AC output power	4000W	5000W	6000W	7000W	8000W	10000W
Max. AC apparent power	4000VA	5000VA	6000VA	7000VA	8000VA	10000VA
Max. output current	6.1A	7.6A	9.1A	10.6A	12.1A	15.2A
Nominal AC output voltage	230V/400V					
Nominal AC output frequency	50/60HZ					
THDv	<3%					
Switch time	<0.5S					
Protection devices						
AC surge protection	Type II					
Battery reverse protection	Yes					
AC short-circuit protection	Yes					
Ground fault monitoring	Yes					
Grid monitoring	Yes					
Anti-islanding protection	Yes					
Residual-current monitoring unit	Yes					
Insulation resistance monitoring	Yes					
General data						
Dimensions (W / H / D)	505/453/198mm					
Weight	28kg					
Operating temperature range	-25 °C ... +60 °C					
Nighttime power consumption	< 13W					
Topology	Transformerless					
Cooling	Natural					
Protection degree	IP65					
Relative humidity	0~100%					
Altitude	3000m					
DC connection	H4 / MC4 (Optional)					
AC connection	Connector					
Display	LCD+LED					
Interfaces: RS232/RS485/CAN/USB	Yes					
Monitor : RF/WIFI/GPRS	Optional					
Warranty:10 years	Yes					

CE, IEC62109, G98, VDE0126-1-1, VDE-AR-N4105, CEI 0-21, IEC62116&IEC61727, EN50438, EN50549, AS4777, AS/NZS 3100, C10/11, TOR Erzeuger

Growatt ShineWiFi-S



Wireless monitoring datalogger with more flexible installation, suitable for applications where cable routing is not convenient and WIFI is available.

- Cable free, easy installation
- 50 meters long range, wide coverage
- Build-in storage, 1 month data
- Online monitoring and maintenance



GROWATT · PRODUCT

Datasheet	ShineWiFi-S
Wireless Parameters	
Wireless standard	802.11 b/g/n
Frequency range	2412M ~ 2472M
Transmit power	802.11b: 16±2 dBm (@11Mbps) 802.11g: 14±2 dBm (@54Mbps) 802.11n: 13±2 dBm (@HT20, MCS7)
Receiver sensitivity	CCK, 1 Mbps: -90dBm CCK, 11 Mbps: -85dBm 6 Mbps (1/2 BPSK): -88dBm 54 Mbps (3/4 64-QAM): -70dBm HT20, MCS7 (65 Mbps, 72.2 Mbps): -67dBm
Hardware Parameters	
Data interface	RS232(Modbus RTU protocol)
Operating voltage	9V(+/-15%)
Operating current	100mA
Application on Parameters	
Supported servers	ShineServer
Inverter communication	RS232(Modbus RTU protocol)
Server communication	TCP(Modbus TCP protocol)
Support network	2.4G WIFI
Max. communication range	50m
Max. power consumption@transmit	1.2W
Configure type	APP configure
Data transfer interval	5 Minutes
Default server URL	server.growatt.com
General data	
Dimensions(L/W/H)	135/79/29mm
Weight	60g
Manual language	English, Chinese
Operating temperature	-40°C ~ +85°C
Warranty	1 years

CE

Growatt ShineLink



Wireless monitoring datalogger with more flexible installation, suitable for applications where cable routing is not convenient, configuration free design.

- Cable free, easy installation
- Automatic IP addressing, plug and play
- 200 meters long range, wide coverage
- Multiple inverters supported, up to 8
- Build-in storage, 1 month data
- Online monitoring and maintenance



GROWATT · PRODUCT

Datasheet	ShineLink
Communication Interface	
RF433	Yes
RF433(in free-field conditions)	Up to 200 m
RF433(two walls blocking)	20 m
Power Supply	
Power consumption	<2W standby, <5W peak
AC power supply input voltage	196V~250V
AC power supply input frequency	50/60Hz
General Specifications	
Dimensions(L/H/W)	105/85/26mm
Weight	< 1kg
Mounting options	Tabletop/wall-mount
Degree of protection	IP30
Status display	LED
Ambient temperature range	-25°C ~ +60°C
Humidity	0-95% (non condensing)
Features	
Programmable dry contact	Opt
Graphical user interface	Android/iOS APP
Remote firmware upgrades	Yes
Max. number of devices to monitor	8(RF433)
Warranty	1 years
CE	

Growatt ShineWiFi-X



- Cable free, easy installation
- USB communication port
- Build-in storage, 1 month data
- Online monitoring and maintenance



GROWATT · PRODUCT

Datasheet	ShineWiFi-X
Wireless Parameters	
Wireless standard	802.11 b/g/n
Frequency range	2.4G~2.5G (2412M~2484M)
Transmit power	802.11b: 16±2 dBm (@11Mbps) 802.11g: 14±2 dBm (@54Mbps) 802.11n: 13±2 dBm (@HT20, MCS7)
Receiver sensitivity	CCK, 1 Mbps : -90dBm CCK, 11 Mbps : -85dBm 6 Mbps (1/2 BPSK): -88dBm 54 Mbps (3/4 64-QAM): -70dBm HT20, MCS7 (65 Mbps, 72.2 Mbps): -67dBm
Hardware Parameters	
Data interface	USB
Operation voltage	5V(+/-5%)
Max.power consumption@transmit	1.2W
Display	LED
Application Parameters	
Supported servers	ShineServer
Inverter communication	USB (Modbus RTU protocol)
Server communication	TCP (Modbus TCP protocol)
Support network	2.4G WiFi
Max. communication range	50m
Configure type	APP configure
Data transfer interval	5 Minutes
Default server URL	server.growatt.com
General data	
Dimensions(L/W/H)	135/79/29mm
Weight	60g
Operating temperature range	-20°C ~ +65 °C

CE

Growatt Shine LAN-X



Lan communication datalogger for easy installation plug-and-play, no need configuration.

- Ethernet direct connection
- Plug and Play
- Online monitoring and maintenance
- Build-in storage up to one month



GROWATT · PRODUCT

Datasheet	Shine LAN-X
Hardware parameters	
Data interface	USB
Nominal voltage	5V(±5%)
Nominal current	400mA
Nominal consumption	2W(MAX:3W)
Display	LED
Application parameters	
Supported Server	ShineServer
Inverter communication	USB(Modbus RTU protocol)
Server communication	TCP(Modbus TCP protocol)
USB speed	12M
Ethernet interface speed	10Mbps
Max. communication range	100m(Direct connection)
Configure type	APP configure
Data transfer interval	5 Minutes
Default server URL	server.growatt.com
General data	
Dimensions(W/H/D)	152/47/28mm
Weight	84g
Operating temperature range	-30°C ... +60°C
Environmental protection rating	IP65
CE, RoHS	

Growatt ShineLink-X



- Cable free, easy installation
- Automatic IP addressing, plug and play
- 120 meters long range, wide coverage
- Multiple inverters supported, up to 8
- Build-in storage, 1 month data
- Online monitoring and maintenance

GROWATT · PRODUCT

Datasheet	ShineLink-X
Communication Interface	
Rf433	Yes
Rf433(in free-field conditions)	Up to 120 m
Rf433(two walls blocking)	20 m
Power Supply	
Power consumption	<2W standby, <5W peak
AC power supply input voltage	196V--250V
AC power supply input frequency	50/60Hz
General Specifications	
Dimensions(L/H/W)	105/85/26mm
Weight	< 1kg
Mounting options	Tabletop/wall-mount
Degree of protection	IP30
Status display	LED
Ambient temperature range	-25°C -- +60°C
Humidity	0-95% (non condensing)
Features	
Graphical user interface	Android/iOS APP
Remote firmware upgrades	Yes
Max. number of devices to monitor	8(RF433)
Warranty	1 year

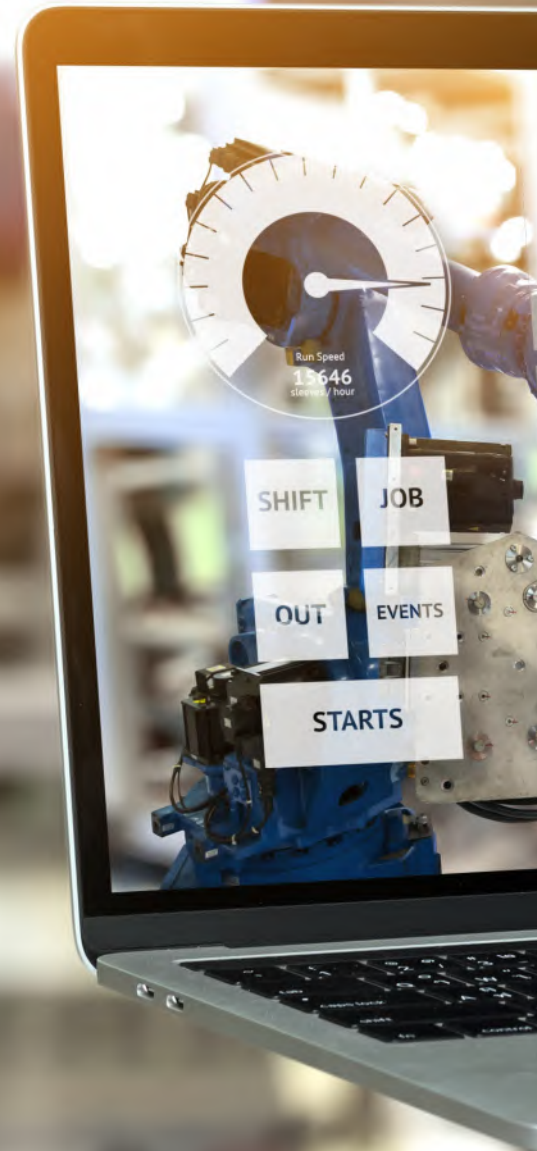
CE

Growatt ShineMaster



Cost effective solution for commercial and utility grade solar plants, supports up to 32 inverters connected in RS485 daisy chain, storage port inbuilt supports flexible storage.

- Local webserver for easy configuration
- Supports export control with meters
- Up to 32 inverters connection
- Multi-function and high performance



GROWATT · PRODUCT

Datasheet	ShineMaster
Hardware Parameters	
Power adapter	Input: 100-240V, 50/60Hz AC Output 5V(+/-15%), 1A DC
Power consumption	2.5W
Application Parameters	
Max. communication range	500m
Communication with inverters	RS485 (Modbus RTU protocol)
Communication with server	TCP(Modbus TCP protocol)
Support network	Ethernet /4G
Data transfer interval	5 Minutes
Default server URL	server.growatt.com
Supported servers	ShineServer
General Data	
Dimensions(W/H/D)	130/84/25mm
Weight	180g
Language	English
Mounting options	Wall-mounted
Ambient temperature range	-30°C ~ +60°C
Degree of protection	IP30
Warranty	1 year

CE

Smart Energy Manager



- System self-consumption monitoring
- Export limitation for commercial projects
- Support online monitoring and online service
- Flexible CTs for different project size
- RS485 and Ethernet connection

GROWATT · PRODUCT

Datasheet	Smart Energy Manager				
System Size	100KW	300KW	600KW	1MW	2MW
Meter data					
Normal voltage	230/400Vac	230/400Vac	230/400Vac	230/400Vac	230/400Vac
Voltage range(L-L)	180-540Vac	180-540Vac	180-540Vac	180-540Vac	180-540Vac
Grid connection	3W/N/PE	3W/N/PE	3W/N/PE	3W/N/PE	3W/N/PE
Normal frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Frequency range	45~55Hz/55-65 Hz	45~55Hz/55-65 Hz	45~55Hz/55-65 Hz	45~55Hz/55-65 Hz	45~55Hz/55-65 Hz
CT data					
Max. input current (CT second side)	5A	5A	5A	5A	5A
Max.current (CT detection)	250A	600A	1200A	2000A	4000A
Accuracy (@ rated CT current)	0.5	0.5	0.5	0.5	0.2
Communication					
RS485	Yes	Yes	Yes	Yes	Yes
Ethernet	Yes	Yes	Yes	Yes	Yes
Max.inverter number	32	32	32	32	32
Communication distance	RS485: 500m Internet cable: 100m	RS485: 500m Internet cable: 100m	RS485: 500m Internet cable: 100m	RS485: 500m Internet cable: 100m	RS485: 500m Internet cable: 100m
General data					
Dimensions (W/H/D)	350/330/107mm	350/330/107mm	350/330/107mm	350/330/107mm	350/330/107mm
Weight	6kg	6kg	6kg	6kg	6kg
Operation temperature range	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C
Cooling concept	Natural Cooling	Natural Cooling	Natural Cooling	Natural Cooling	Natural Cooling
Environmental Protection Rating	IP65	IP65	IP65	IP65	IP65
Relative humidity	0~100%	0~100%	0~100%	0~100%	0~100%
Altitude	2000m	2000m	2000m	2000m	2000m

CE

AUSTRALIA 200KW SOLAR PLANT

▶ 200KW

▶ 58 begarra st, Renmark, South Australia

▶ Growatt 30000TL3-S





NANYANG 100MW HILL PLANT

- 100MW ◀
- Henan, China ◀
- Growatt 40000TL3-S ◀



ANHUI 350KW SOLAR PLANT

- ▶ 350KW
- ▶ Anhui, China
- ▶ Growatt 40000TL3-NS

NETHERLANDS POWER 1.5MW SOLAR PLANT

▶ 1.5MW ▶ Netherlands ▶ Growatt 20000UE



THAILAND 134MW SOLAR PLANT

▶ 134MW ▶ Phitsanulok, Thailand ▶ Growatt 16700TL3-HE-TH



DEZHOU 1.29MW SOLAR PLANT

▶ 1.29MW ▶ Dezhou, China ▶ Growatt 40000TL3-NSE



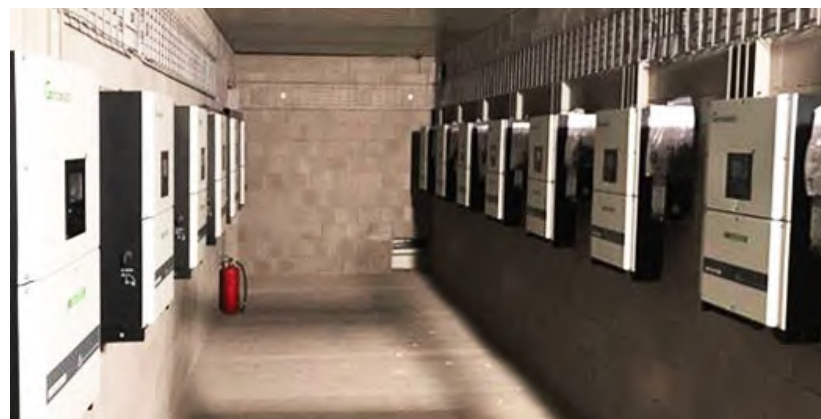
NETHERLANDS 500KW SOLAR SYSTEM

- ▶ 500kW
- ▶ Netherlands
- ▶ MAX 60KTL3 LV
MAX 70KTL3 LV



NETHERLANDS 600KW SOLAR SYSTEM

- ▶ 600kW
- ▶ Netherlands
- ▶ Growatt 40000TL3-NS



UK HOME STORAGE SYSTEM

- ▶ 5kW
- ▶ United Kingdom
- ▶ Growatt SPH5000



ZHIXI GARDEN SOLAR COMMUNITY



- 4MW ◀
- ZheJiang, China ◀
- Growatt 3000-5000 ◀

ITALY HOME STORAGE SYSTEM

▶ 6kW ▶ Italy ▶ Growatt SPH6000



NETHERLANDS HOME SOLAR SYSTEM

▶ 1kW ▶ Netherlands ▶ Growatt 3000-S



▶ 3kW
▶ Netherlands
▶ Growatt 1000-S

