

FUSION

INVERTER DATASHEET

Solar Grid-Tie Inverter

(3KW - 100KW)



SCAN HERE

ABOUT LOOM SOLAR



Loom Solar is a start-up, a manufacturer of solar panels and Lithium batteries based out of Faridabad, Haryana. It is an ISO 9001 - 2015 certified company and recognized startup by Govt. of India. It is present in 500 districts across India having 3500 resellers, 100 employees, 2 offices and 1 Manufacturing unit.

Loom Solar[®] has won the prestigious gold and silver award in the 11th Annual 2019 Golden Bridge Business and Innovation Awards at United States of America.

GRID CONNECTED SOLAR SYSTEM

A solar inverter can be defined as an electrical converter that changes the uneven DC (direct current) output of a solar panel into an AC (alternating current). This current can be used for different applications like in a viable electrical grid otherwise off-grid electrical network. In a PV system, it is a dangerous BOS (balance of system) component that allows the utilization of normal AC powered apparatus. These inverters have some functions with PV arrays like tracking of utmost PowerPoint & protection of anti-islanding. If we are using a solar system for a home, the selection & installation of the inverter is important. So, an inverter is an essential device in the solar power system.



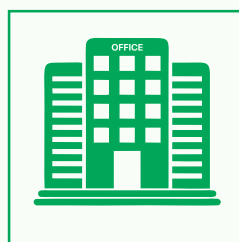
Solar On-Grid Inverter

3KW - 100KW

APPLICATIONS



Home



Office



Factory

Grid-Tie Inverter (3-5 KW) 1 ϕ



Loom Solar Single Phase Grid-Tie Inverter is designed to offer improved reliability and simple integration. The wide input range ensures operation at the highest efficiency at all times. The compact and light design simplifies shipping and storing, and easy one-person installation.

KEY BENEFITS:

- Compact and light design for easy installation
- Wide input range
- Natural cooling
- Mobile app monitoring
- Remote monitoring
- Low power transmission
- Simple and compact
- DC overloading up to 30%
- AC overloading up to 10%
- Transformerless GT technology
- Dual MPPT Design with accurate MPPT algorithm
- Optional: Export Power Block Function, Weather monitoring

1 ϕ Inverter (3-5 KW)

Model Name	Fusion 31	Fusion 41	Fusion 51
Rating	3 KW	4 KW	5 KW

Input (DC)

Max. Peak DC Input Power (KW)	3.6 KW	4.5 KW	6 KW
Max. DC I/P (V dc)	500V DC		
Max. MPPT I/P Current (A)	20A	20A + 20A	
Max. Short Circuit Current (A)	27A	27A + 27A	
MPPT Tracking Voltage (Vdc)	50-500V		
Min. Start Voltage (V)	70V		
Number of MPPT Tracker	1	2	
Strings per MPPT Trackers	1		

Output (AC)

Rated Output Power (KW)	3	4	5
Max. Peak Output Power	3.3	4.4	5.5
Operating Grid Voltage (V)	184V - 277V (This can vary with grid standards)		
Rated Grid Voltage (V)	230V		
Nominal Grid freq. (Hz)	50Hz		
Max. output current AC (A)	14.3	23.9	28.2
AC Connection (with PE)	L + N + E		
THD (%)	<5%		
Output Power Factor (%)	>99.99%		

Efficiency

Max. Conversion eff. (%)	97.5
Max. Euro Efficiency (%)	97
Max. MPPT Efficiency (%)	>99%

Physical Parameters

Dimension (LXHXW) mm	280 x 310 x 185	330x323.5x192.5
Weight (Kg)	6	8

General Data

Operating temperature	-25° to +60°C
Operating Surrounding Humidity	0-100%
Design Life	Over 25 Years
Night Con. (W)/Noise Level	<0.2/<30d B
Heat Dissipation	Natural Convection
RH/Max. Altitude	0% to 98%. No Condensation/<2000 without power derating
Display	Graphical - LED with LCD Display
DC / AC Connectors (IP-65)	MC-4
Communication Interface	Wifi / GPRS / RS 485 / RS 232 / ETHERNET LAN
Standard Warranty	5 Years

Standards, Safety & Protections

DC Switch	Optional
SPD (Surge Protection Device)	Type - 2 DC MOV
Protection Class	1
Efficiency	IEC 61683
Safety Standard	IEC 62109-1&2
EMC Standard	IEC61000-6-1,6-3 & IEC 61000-3-11, 3-12
Environment Protection	IEC 60068-2-1/2/14/30
Anti-Islanding	IEC-62116
Ingress Protection	IP 65
Utility Interface	IEC-61727
Protection & Safety	<ul style="list-style-type: none"> - String input Reverse Polarity - Insulation Resistance detection - Output Over/Under frequency - Zero export protection - DC input short circuit - Output Over /Under voltage - Over temperature - Anti-Islanding - DC O/V & U/V - Output Over current - GDI for input & Output

Grid-Tie Inverter (5-15KW) 3 ϕ



Loom Solar three phase inverter combines sophisticated digital control technology with efficient power conversion to achieve excellent solar power harvesting and full reliability.

KEY BENEFITS:

- Compact and light design for easy installation
- Wide input range
- Natural cooling / Forced Air
- Mobile app monitoring
- RS 485 Remote monitoring (WIFI / GPRS)
- low power transmission
- DC overloading up to 30%
- AC overloading up to 10%
- Transformerless GT technology
- Dual multi MPPT Design with accurate MPPT algorithm
- Optionals: Export Power Block Function, Weather monitoring, String level monitoring, SPD for AC & DC Protection

3 ϕ Inverter (3-15 KW)

Model Name	Fusion 53	Fusion 63	Fusion 83	Fusion 103	Fusion 123	Fusion 153
Rating	5 KW	6 KW	8 KW	10 KW	12 KW	15 KW

Input (DC)

Max. Peak DC Input Power (KW)	6.5 KW	7.8 KW	10.4 KW	13 KW	15.6 KW	19.5 KW
Max. DC I/P (V dc)	1000V DC					
Max. MPPT I/P Current (A)	20A+20A					20A+26A
Max. Short Circuit Current (A)	30A+30A					30A+39A
MPPT Tracking Voltage (Vdc)	120-850V				200-850V	
Min. Start Voltage (V)	140V				250V	
Number of MPPT Tracker	2					
Strings per MPPT Trackers	1+1					1+2

Output (AC)

Rated Output Power (KW)	5	6	8	10	12	15
Max. Peak Output Power	5.5	6.6	8.8	11	13.2	16.5
Operating Grid Voltage (V)	320V - 480V (This can vary with grid standards)					
Rated Grid Voltage (V)	400V					
Nominal Grid freq. (Hz)	50Hz					
Max. output current AC (A)	8	9.6	12.8	15.9	19.1	23.9
AC Connection (with PE)	3L + N + E					
THD (%)	< 5%					
Output Power Factor (%)	>99.99%					

Efficiency

Max. Conversion eff. (%)	98.5
Max. Euro Efficiency (%)	98
Max. MPPT Efficiency (%)	>99%

Physical Parameters

Dimension (LXHXW) mm	330x472x202
Weight (Kg)	15

General Data

Operating temperature	-25° to +65°C
Operating Surrounding Humidity	0-100%
Design Life	Over 25 Years
Night Con. (W)/Noise Level	<0.2/<30dB
Heat Dissipation	Natural Convection
RH/Max. Altitude	0% to 98%. No Condensation/<2000 without power derating
Display	Graphical - LED with LCD Display
DC / AC Connectors (IP-65)	MC-4
Communication Interface	Wifi / GPRS / RS 485 / RS 232 / ETHERNET LAN
Standard Warranty	5 Years

Standards, Safety & Protections

DC Switch	DC Switch Available
SPD (Surge Protection Device)	Type -2 DC MOV
Protection Class	1
Efficiency	IEC 61683
Safety Standard	IEC 62109-1&2
EMC Standard	IEC61000-6-2,6-4& IEC 61000-3-11, 3-12/IEC 61000-3-2, 3-3
Environment Protection	IEC 60068-2-1/2/14/30
Anti-Islanding	IEC-62116
Ingress Protection	IP 65
Utility Interface	IEC-61727
Protection & Safety	<ul style="list-style-type: none"> - String input Reverse Polarity - Insulation Resistance detection - Output Over/Under frequency - Zero export protection - DC input short circuit - Output Over /Under voltage - Over temperature - Anti-Islanding - DC O/V & U/V - Output Over current - GDI for input & Output

Grid-Tie Inverter (20-100KW) 3 ϕ



Our inverters produce extremely clean, reliable, uninterrupted power and allow unused energy to be stored in a battery, resulting in long periods of continuous operation and maximum energy independence during power outages, meeting requirements concerning reliability and quality of power supply in the most demanding applications.

KEY BENEFITS:

- Compact and light design for easy installation
- Wide input range
- Natural cooling / Forced Air
- Mobile app monitoring
- RS 485 Remote monitoring (WIFI / GPRS)
- low power transmission
- DC overloading up to 30%
- AC overloading up to 10%
- Transformerless GT technology
- Dual multi MPPT Design with accurate MPPT algorithm
- SPD for AC & DC Protection
- Optionals: Export Power Block Function, Weather monitoring, String level monitoring, SPD for AC & DC Protection

3 ϕ Inverter (20-100 KW)

Model Name	Fusion 203	Fusion 253	Fusion 333	Fusion 503	Fusion 803	Fusion 1003
Rating	20 KW	25 KW	33 KW	50 KW	80 KW	100 KW

Input (DC)

Max. Peak DC Input Power (KW)	26 KW	32.5 KW	42.9 KW	65 KW	104 KW	130 KW
Max. DC I/P (V dc)	1000V DC					
Max. MPPT I/P Current (A)	26A+26A	26A+40A	40A+40A	40A+40A+40A+40A		40A+40A+40A+40A+40A+40A
Max. Short Circuit Current (A)	39A+39A	39A+60A	60A+60A	60A		
MPPT Tracking Voltage (Vdc)	200-850V					
Min. Start Voltage (V)	250V			200V		
Number of MPPT Tracker	2			4		6
Strings per MPPT Trackers	2+2	2+3	3+3	3	4	

Output (AC)

Rated Output Power (KW)	20	25	33	50	80	100
Max. Peak Output Power	22	27.5	36.3	55	88	110
Operating Grid Voltage (V)	320V - 480V (This can vary with grid standards)					
Rated Grid Voltage (V)	400V					
Nominal Grid freq. (Hz)	50Hz					
Max. output current AC (A)	31.9	39.9	52.6	80	127	159
AC Connection (with PE)	3L + N + E			3P+N+E		
THD (%)	< 5%					
Output Power Factor (%)	>99.99%					

Efficiency

Max. Conversion eff. (%)	98.6		98.7	> 98%		
Max. Euro Efficiency (%)	97.8		98.1	98.3%		
Max. MPPT Efficiency (%)	>99%			> 0.99		

Physical Parameters

Dimension (LXHXW) mm	362x577x215		647.5x537x303.5	700 x 575 x 297	838 x 568 x 323	
Weight (Kg)	25.5		44.5	60	73.7	

General Data

Operating temperature	-25° to +65°C					
Operating Surrounding Humidity	0-100%					
Design Life	Over 25 Years					
Night Con. (W)/Noise Level	<0.2/<30dB					
Heat Dissipation	Smart cooling			Natural Convection		
RH/Max. Altitude	0% to 98%. No Condensation/<2000 without power derating					
Display	Graphical - LED with LCD Display					
DC / AC Connectors (IP-65)	MC-4					
Communication Interface	Wifi / GPRS / RS 485 / RS 232 / ETHERNET LAN					
Standard Warranty	5 Years					

Standards, Safety & Protections

DC Switch	DC Switch Available					
SPD (Surge Protection Device)	Type -2 DC MOV			Type - 2 AC SPD & DC MOV		
Protection Class	1					
Efficiency	IEC 61683					
Safety Standard	IEC 62109-1&2					
EMC Standard	IEC61000-6-2,6-4& IEC 61000-3-11, 3-12/IEC 61000-3-2, 3-3					
Environment Protection	IEC 60068-2-1/2/14/30					
Anti-Islanding	IEC-62116					
Ingress Protection	IP 65					
Utility Interface	IEC-61727					
Protection & Safety	<ul style="list-style-type: none"> - String input Reverse Polarity - Insulation Resistance detection - Output Over/Under frequency - Zero export protection 		<ul style="list-style-type: none"> - DC input short circuit - Output Over /Under voltage - Over temperature - Anti-Islanding 		<ul style="list-style-type: none"> - DC O/V & U/V - Output Over current - GDI for input & Output 	

Hybrid Inverter with Battery Backup (1 ϕ)



Loom Solar Hybrid Inverter is a flexible and intelligent inverter which utilizes Solar power, AC Grid and Battery power source to supply continuous power to Load. It's a simple and smart solar power storage system with grid export facility for Customers to either store energy into a battery and can be use in night or use for self-consumption depending on demands. Priority for power source can be programmed and set up through smart software. During night time or power outages, it will automatically extract power from the battery source. In this way, it will reduce dependence on the Grid power.

GRID -TIE INVERTER WITH BATTERY BACKUP

- Pure Sine wave output
- Local load consumption and export to grid
- Can be programmed supply priority for Solar, Battery or Grid
- User-adjustable charging current and voltage
- Programmable multiple operation modes Like On-Grid, Off-Grid and On-Grid with Battery Backup
- Parallel operation up to 6 units available for 3kw/4kw/5kw & 10kw Models (Optional)
- Communication - RS-232, Modbus, SNMP & GPRS (Optional)

Hybrid Inverter (5 KW)

Capacity	5KW
Model No.	Fusion H51
Rated Output Power	5000 W

PV Input (DC)

Max. PV Power	6000 W
Max. PV Array Open Circuit Voltage	145 VDC
MPPT Range at Operating Voltage	60 VDC - 115 VDC
Number of MPPT	2

Grid-tie Operation

Grid Output (ac)	
Nominal Output Voltage	220 / 230 / 240 VAC
Feed-in Grid Voltage Range	184 - 264 VAC OR 195 - 253 VAC (Settable)
Feed-in Grid Frequency Range	47.5 Hz - 57.5 Hz
Nominal Output Current	21.7A
Power Factor	> 0.99
Maximum Conversion Efficiency (DC/AC)	92.50%
Nominal Grid freq. (Hz)	50Hz

Off-grid Operation (Hybrid Mode)

Grid Input	
Acceptable Input Voltage Range	170 - 280 VAC Per Phase
Nominal Frequency	50 Hz
Maximum AC Input Current	40A

Battery Mode Output (Ac)

Nominal Output Voltage	220/230/240 VAC
Output Waveform	Pure Sine Wave

Battery & Charger

Nominal DC Voltage	48 VDC
Maximum Charging Current	180A

Interface

Parallel Function (optional)	Yes
Communication (optional)	USB or RS232 / Dry-Contact / SNMP / GPRS or Modbus

Environment

Humidity	0 - 90% RH (Non-condensing)
Operating Temperature	-10°C to 55°C (Power derating above 50°C)
Installation	Indoor Only

Standards

Energy Efficiency	IEC 61683
Environmental	IEC 60068 - 2 (1, 2, 14, 30)
Safety	IEC/EN 62109-1 : 2010, IEC/EN 62109.2 : 2011
Ant Islanding	IEC 62116
Utility Interface	IEC 61727
EMC	EN 61000-6-1 : 2007, EN 61000-3-2 : 2006 + A1 : 2009 + A2 : 2009, EN 61000-6-3 : 2007 AND EN 61000-3-3 : 2008

* Battery is must for all capacity of inverters.

* Product specifications are subject to change without prior notice