COMPLIANCE

VERIFICATION OF COMPLIANCE

No.:	SHES2504006274PV
Applicant:	MidNite Solar, Inc. 19115 62nd Ave. NE, 98223, Arlington, Washington, United States of America
Manufacturer:	MidNite Solar, Inc. 19115 62nd Ave. NE, 98223, Arlington, Washington, United States of America
Product Name:	ESS Inverter
Product Description:	ESS Inverter
Model No.:	MN 7.5-5KW-AIO, MN 9-6KW-AIO, MN 12-7K6W-AIO, MN 12-8KW-AIO, MN 15-12KW-AIO
Trade Mark:	MidNite Solar, Inc.
Rating:	See page 2 to 4
Protection against Electric Shock:	Class I
Additional Information (if any):	Firmware version: 051001

Sufficient samples of the product have been tested and found to be in conformity with

Test Standard:	See page 5
as shown in the	
Test Report Number(s):	SHES250400627401

This Verification of Compliance has been granted to the applicant based on the results of tests, performed by Laboratory of SGS-CSTC Standards Technical Services Co., Ltd. on sample of the above-mentioned product in accordance with the provisions of the relevant specific standards.

SGS-CSTC Standards Technical Services Co., Ltd. SGS C&P EEC

Van Hua

Technical Manager 2025-04-23

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COMPLIANCE

No.: SHES2504006274PV

Other information added:

Rating:

Model:	MN 7.5-5KW-AIO	MN 9-6KW-AIO
INPUT RATINGS:		
Maximum input voltage	600V dc	
Range of input operating voltage	70 V dc to 540 V dc	
Range of input operating voltage with full power	200 V dc to 480 V dc	
Maximum input current (dc)	30/22 Adc	
Number of input	2	
OUTPUT RATINGS (Grid terminal, Bi-directional):		
Output power factor rating	default >0.99 (-0.8~+0.8 adjustable)	
Operating voltage range (ac) (L1-L2/L1-N)	0.88Un~1.1Un	
Number of phases	Single phase/Split phase	
Nominal output voltage (ac)	Split phase:120/240Vac; 2/3 phase: 208Vac	
Normal output frequency	60 Hz	
Maximum continuous output current (ac) per line	22.9Arms	27.5Arms
Rated output current (ac) per line	20.9Arms	25Arms
Maximum output apparent power (ac)	5.5 kVA	6.6 kVA
Maximum continuous output power (ac)	5.0 kW	6.0 kW
Maximum output fault current (ac) and duration	494 A_{peak}/18.6ms, 14.09 A_{rms}/cycle	
Trip limit and trip time accuracy - Voltage:	±1% Un	
Utility interconnection voltage and frequency trip limits and trip times	see Note 1 and 2	
Trip limit and trip time accuracy - Frequency:	±0.01 Hz	
Trip limit and trip time accuracy - Time	±1%setting, but not less than 50ms	
Normal operation temperature range	-25ºC to 60ºC (>45 ºC derating)	
Enclosure Rating Type	Type 3R	
Weigh (kg)	46.2kg	
Dimension (mm)	420*950*240	

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No.: SHES2504006274PV

Other information added:

Rating:

Model:	MN 12-7K6W-AIO	MN 12-8KW-AIO
INPUT RATINGS:		
Maximum input voltage	600V dc	
Range of input operating voltage	70 V dc to 540 V dc	
Range of input operating voltage with full power	200 V dc to 480 V dc	
Maximum input current (dc)	30/22/22 Adc	
Number of input	3	
OUTPUT RATINGS (Grid terminal, Bi-directional):		
Output power factor rating	default >0.99 (-0.8~+0.8 adjustable)	
Operating voltage range (ac) (L1-L2/L1-N)	0.88Un~1.1Un	
Number of phases	Single phase/Split phase	
Nominal output voltage (ac)	Split phase:120/240Vac; 2/3 phase: 208Vac	
Normal output frequency	60 Hz	
Maximum continuous output current (ac) per line	34.8Arms	36.7Arms
Rated output current (ac) per line	31.7Arms	33.4Arms
Maximum output apparent power (ac)	8.36 kVA	8.8 kVA
Maximum continuous output power (ac)	7.6 kW	8.0 kW
Maximum output fault current (ac) and duration	494 A_{peak}/18.6ms, 14.09 A_{rms}/cycle	
Trip limit and trip time accuracy - Voltage:	±1% Un	
Utility interconnection voltage and frequency trip limits and trip times	see Note 1 and 2	
Trip limit and trip time accuracy - Frequency:	±0.01 Hz	
Trip limit and trip time accuracy - Time	±1%setting, but not less than 50ms	
Normal operation temperature range	-25ºC to 60ºC (>45 ºC derating)	
Enclosure Rating Type	Type 3R	
Weigh (kg)	46.2kg	
Dimension (mm)	420*950*240	

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No.: SHES2504006274PV

Other information added:

Rating:

Model:	**MN 15-12KW-AIO**
INPUT RATINGS:	
Maximum input voltage	600V dc
Range of input operating voltage	70 V dc to 540 V dc
Range of input operating voltage with full power	200 V dc to 480 V dc
Maximum input current (dc)	30/22/22 Adc
Number of input	3
OUTPUT RATINGS (Grid terminal, Bi-directional):	
Output power factor rating	default >0.99 (-0.8~+0.8 adjustable)
Operating voltage range (ac) (L1-L2/L1-N)	0.88Un~1.1Un
Number of phases	Single phase/Split phase
Nominal output voltage (ac)	Split phase:120/240Vac; 2/3 phase: 208Vac
Normal output frequency	60 Hz
Maximum continuous output current (ac) per line	47.5Arms
Rated output current (ac) per line	41.7Arms
Maximum output apparent power (ac)	11.4 kVA
Maximum continuous output power (ac)	10 kW
Maximum output fault current (ac) and duration	494 A_{peak}/18.6ms, 14.09 A_{rms}/cycle
Trip limit and trip time accuracy - Voltage:	±1% Un
Utility interconnection voltage and frequency trip limits and trip times	see Note 1 and 2
Trip limit and trip time accuracy - Frequency:	±0.01 Hz
Trip limit and trip time accuracy - Time	±1%setting, but not less than 50ms
Normal operation temperature range	-25ºC to 60ºC (>45 ºC derating)
Enclosure Rating Type	Type 3R
Weigh (kg)	46.2kg
Dimension (mm)	420*950*240

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Other information added:

As the gateway used by customer is certified by SunSpec, the compatibility testing is as part of IEEE2030.5 conformance testing of the gateway. According to the Resolution E-5000 & E-5036, for inverters that do not directly implement IEEE 2030.5 client functionality, the following five test cases according to SunSpec CSIP test procedures on the gateway while it is connected to the inverter.

1) Inverter Status (BASIC-028)
2) Inverter Meter Reading (BASIC-029)
3) Basic Inverter Control – Volt/Var (BASIC-006)
4) Basic Inverter Control – Fixed Power Factor (BASIC-008)
5) Basic Inverter Control – Volt-Watt (BASIC-011)

The test was conducted using the QualityLogic IEEE 2030.5 Test Harness which implements the test cases that are described in the CSIP Test Procedures document.

The inverter under test was subjected to testing conditions as follows:

- ✓ The inverter was operating during test harness verification procedure.
- ✓ The gateway was given orders as IEEE 2030.5 commands (Inverter Status, Inverter Meter Reading, Volt/VAR, Fixed Power Factor, and Volt/Watt) sent from an IEEE 2030.5 Client FTS that were subsequently translated to signals understood by the inverter.
- ✓ The inverter parameters were verified:

a) to change during the test cases for Volt-VAR, Fixed Power Factor, and Volt-Watt and b) report monitored data during the test cases for Inverter Status and Inverter Meter Reading. Based on this procedure, the requirements from Appendix C of the resolution were verified.

Test Name	Test Description	Result
BASIC-006	Basic Inverter Control (Volt/Var) [C, A, S]	Pass
BASIC-008	Basic Inverter Control (Fixed Power Factor) [C, A, S]	Pass
BASIC-011	Basic Inverter Control (Volt-Watt) [C, A, S]	Pass
BASIC-028	Inverter Status [C, A, S]	Pass
BASIC-029	Inverter Meter Reading [C, A, S]	Pass

Test Standard: California Public Utilities Commission Resolution E-5000 & E-5036
Common Smart Inverter Profile V2.1

Test procedure: Common Smart Inverter Profile (CSIP) Conformance Test Procedures V1.2

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