Certificate of Compliance

Certificate:	80121274	**Master Contract:**	302773
Project:	80270745	**Date Issued:**	2025-10-21
Issued to:	**Lunar Energy, Inc** **755 Ravendale Drive** **Mountain View, California** **94043** **United States** **Attention:** Harshad Joshi	**Issued by:**	*Peter Lim* Peter Lim

The products listed below are eligible to bear the CSA Mark shown with adjacent indicator 'US'

US

PRODUCTS

Class 5311 89 POWER SUPPLIES - Distributed Generation Power Systems Equipment - Certified to U.S. Standards

Transformerless bidirectional Battery and PV Inverter

Model(s)
10-005025

Note: For details related to rating, size, configuration, etc. reference should be made to the CSA Certification Record, the descriptive report, and Annex A.

Conditions of Acceptability:

1. Do not operate grounded PV modules or batteries together with the product.
2. The product can only be operated with an intrinsically safe lithium-ion battery that is both approved under the UL:1973 standard and authorized by Lunar Energy.

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3. This evualtion exclude battery pack.
4. Allow the capacitors of the inverter to discharge (350ms)
5. To be deployed with the Lunar's Energy Storage Power System only.
6. Approved matching connectors of similar manufacturer shall be used at the system level in order to meet Type 3R Rating.
7. The integration of the metering device its accuracy of the metering is not part of the evaluation.
8. All the EMC immunity testing were conducted together with the ESS system.
9. For AC disconnecting means, it shall be installed in the Lunar Bridge Panel's breaker.
10. Environmental Stress Testing (based on UL 991) –vibration test is be done in the Energy Storage system level.
11. Battery circuits (see C22.2 No. 107.1-16 Clause 4.19.3 and UL 1741 section 32.4) were not investigated. Suitable wiring and protection must be evaluated in the end application.
12. Additional cosmetic enclosures and guards (see C22.2 No. 107.1-16 Clause 4.2 and UL 1741 section 38) must be provided in the end application.
13. Supplement SB – Grid support utility interactive inverters and converters (UL 1741 SB) were performed from SB4 to SB6 inclusively.
14. The AC disconnected relay shall be fully sealed and vacuumized type.
15. All PCB Assemblies are conformably coated.
16. Evaluation does not include C22.3 No. 9 for Canadian Grid Tie Integrity.
17. For use in a residential environment only.
18. To meet EMI requirements, metal shield plate and metallic tape is to be added (see photos in Att1).
19. PCS current monitoring equipment and components shall be rated for the application and comply with UL2808 where the PCS components are intended to be installed in another manufacturer's panelboard, switchboards and other equipment. Current monitoring equipment evaluated for use with specific panelboards or other equipment shall meet the requirements in UL61010 and the applicable end product standard for that equipment.
20. For systems governed by NEC Articles 705 (Interconnected Electric Power Production Sources), 706 , (Energy Storage Systems), and 710 (Stand-Alone Systems), a placard or directory is required. This placard must clearly indicate the location of the disconnecting means for each individual power source. This placard is to be provided at the end system.

This bidirectional inverter is investigated for use only as part of the Lunar's Energy Storage System where the acceptability of the final assembly is to be determined by CSA Group.

APPLICABLE REQUIREMENTS

UL 1741:2021 - Third Edition - Including revisions through October 23, 2024 - UL Standard for Safety Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources

UL 1699B:2018 -First Edition- Including revisions through May 18, 2021 - Photovoltaic (PV) DC Arc-Fault Circuit Protection

UL 1741 CRD - Third Edition - Including revisions through September 28, 2021 - UL Standard for Safety Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources - Section / Paragraph Reference: New: 200.1 and 200.2 Subject: Power Control Systems (PCS)

UL1741 CRD (April 7, 2023) - Clarification of Multi-Mode Inverter Requirements Including Supply Conductor Grounding

UL 3141 (Issue 1) - SUBJECT - UL Outline for Investigation for Power Control Systems

UL 1741 CRD: September 28, 2021 - Third Edition - Including revisions through April 01, 2023 - Standard for Safety Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources - Section / Paragraph Reference: New: 200.1 and 200.2 Subject: Non- Isolated EPS Interactive PV Inverters Rated Less Than 30Kva.

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Standards Notes

Notes:

(1) Conformity to UL 1741(Third Edition, Dated May 19, 2023) includes compliance with applicable requirements of grid support function is evaluated according to UL 1741 Supplement SB and IEEE 1547.1-2020 with the SRDs of California Electric Rule 21, IEEE 1547-2018 and IEEE 1547a-2020, the interoperability is verified with IEEE 2030.5-2018 communication protocol.

(2) To fulfill the rapid shutdown requirements of the NEC Article 690.12 and CEC Sec 64-218 Photovoltaic system rapid shutdown, the Lunar Inverter is integrated with PVRSS. The PV input of the inverter complies with the requirements of the following standards to ensure the PV conductors are within the controlled limits of 30Vdc, 15Vac and 8A within the 30s:
a) UL1741 3rd edition (PVRSS)

(3) The functional safety has been evaluated according to applicable requirement of UL 1998-Edition 3, UL991 and CSA C22.2 0.8 (Dated 1 January 2019) as required by the product standard.

(4) Meeting UL1741 CRDs include compliance with PV combiner, multi-mode, ground fault (or IMI isolation) detection and PCS reference to UL3141 Issue 1 Outline of Investigation for Power Control Systems.

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Project: 80270745 **Date Issued**: 2025-10-21

Notes:

Products certified under Class(es) C531189 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

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Supplement to Certificate of Compliance

Certificate: 80121274 **Master Contract:** 302773

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80270745	2025-10-21	Update Report 80121274 (80266993) to include multi-mode evaluation for a Meter Socket Adapter Controller (MSAC) and third-party certified Meter Socket Adapter (MSA) configuration.
80266993	2025-08-27	Update Report 80121274 (80233547) to include alternate PCS configuration for Lunar Battery System, consisting of the Inverter and Battery Block, combined with the certified Lunar Meter Socket Adapter Controller (MSAC) and third-party certified Meter Socket Adapter (MSA).
80243937	2025-05-09	Update report 80121274 (80233547) to include alternate constructions which are unrelated to grid tie function.
80233547	2025-01-12	Update report 80121274 (80231827) to include UL1741 CRD covering PCS (referencing UL3141)
80231827	2025-01-03	Update report 80121274 (80219918) to include 3 String DC inputs
80231579	2024-10-25	Update Report 80121274 (80219918) to correct the model number. Changes also include updating the CoC's legal business name to reflect the current official business name and the initial written scope of certification in the salesforce (Central) from UL1741 SA+SB to UL1741 SB. The revision is necessary due to transfer error from Salesforce (Centra) to CMS.
80231073	2024-10-25	Update Report 80121274 (80219918) to correct the model number. Changes also include updating the CoC's legal business name to reflect the current official business name and the initial written scope of certification in the salesforce (Central) from UL1741 SA+SB to UL1741 SB. The revision is necessary due to transfer error from Salesforce (Centra) to CMS.
80219918	2024-08-16	Update report 80121274 to include alternate construction and adding three Strings PV inputs (See attached Inverter Type B Impact analysis for details)

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80121274	2024-04-26	To evaluate to UL1741 and CSA 107.1 (C/US) for Inverter, DC-DC converters and PV optimizer (including Control Panel and Metering). Scope includes grid tie – IEEE 1547 and UL1741 SA+SB. Also includes UL 1699B for Inverter Arc-Fault Circuit Protection. Full scope of Standards listed in Standard Section.

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