

STANDARD INFORMATION

Standard: ANSI/CAN/UL 8801

Standard ID: Photovoltaic (PV) Luminaire Systems [ANSI/CAN/UL 8801:2022 Ed.1+R:26Nov2024]

Previous Standard ID: Photovoltaic (PV) Luminaire Systems [ANSI/CAN/UL 8801:2022 Ed.1]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **November 26, 2026**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

Overview of Changes:

- PV Module Overcurrent Protection
- Battery compartment removable cover secureness
- Disconnect switches for the PV module and battery
- Ambient temperature markings
- Multiple concurrent DC charging or power sources

Specific details of new/ revised requirements are found in table below

Note: If the listing references a Canadian standard, per the Canadian Electrical Code (CSA C22.2#0) Section titled Language of markings, Caution and Warning Markings shall be in English and French.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<p>Additions to existing requirements are <u>underlined</u> and deletions are shown lined-out below.</p>
7	Info	System Subassemblies
7.2	Info	PV Modules
		Clause deleted;
7.2.6		<p>Fusing on the output of the PV module shall comply with CSA or UL 248-19 and shall be rated between 1.56 Isc (rounded up to the nearest trade size fuse) and 5 A.</p>
		New clause added;
		<p>PV module output circuit shall have two independent safeguards (for example, two diodes in series) to prevent reverse current flow into a module when any of the following situations exist:</p>
7.2.7		<p>a) Three (or more) modules have their outputs connected in parallel, b) The PV module output is connected directly to the battery, or c) The control device or circuitry between the PV module and the battery does not include an equivalently reliable means of preventing current flow from the battery to the PV module.</p> <p>NOTE: For (b) and (c), if the battery short circuit output current is less than the PV module short circuit output rating, reverse current protection is not required.</p>
7.4	Info	Batteries
		<p>If the battery compartment has a removeable cover, that cover shall remain secured to the equipment when opened, by a hinge, <u>cable (including chains and similar flexible attachment means)</u>, or similar means to prevent full removal. <u>A cable (or similar) that allows the cover to hang freely in air, supported only by the cable, shall comply with the mounting means secureness test of 8.6.2. If the cable is other than metal, it shall be located within the compartment when the cover is secured. The securement means shall be of a design and of sufficient strength and environmental resistance to retain its capability for the expected life of the equipment.</u></p>
7.4.2		
7.6	Info	Battery output circuits
		<p>Conductors connected to the load side of the battery shall be sized based on the continuous DC amperage rating of the overcurrent protection device, in accordance with <u>applicable provisions of NFPA 70 or CSA C22.1, as specified in 7.1.2. NFPA 70, Section 240.4(D) or CSA C22.1 Rule 14-104, as applicable. When no overcurrent protection device is required (per the exception to 7.6.1), conductors shall be sized in accordance with 7.9.1.</u></p>
7.6.3		



CLAUSE	VERDICT	COMMENT
7.9	Info	Electrical conductors and connections
		A disconnect means (switch or detachable connector) shall be provided on the output of the PV module and on the output of the battery. These disconnecting means shall be readily accessible and marked to identify their purpose and be located as follows:
7.9.3		<p>a) For power levels exceeding class 2, either:</p> <p>1) Externally accessible and operable with no need to remove a cover or panel, or</p> <p>2) Accessible behind a panel that can be opened without the use of a tool.</p> <p>b) For power levels within class 2 limits:</p> <p>1) Option 1 or 2 under (a) above, or</p> <p>2) Accessible behind a panel that requires a tool to open.</p>
		<i>New clause added;</i>
7.9.4		When the disconnect means is located per 7.9.3 (a)(2) or (b)(2), the panel shall be marked in accordance with 9.13.
8	Info	Performance
8.6	Info	Mounting means secureness test
		<i>New clause added;</i>
8.6.2		A battery compartment cover secured by a cable (or similar) shall be subjected to three 'drops' as follows, without detachment from the battery compartment or visible damage to or detachment of the cable. The cover is to be released from the battery compartment and secured only by the cable. It is then to be held in a horizontal plane with only air below that allows for full extension of the cable when the cover is released. The cover is then to be released in a single motion, allowing gravity to accelerate the cover until fully supported by the cable. This drop is to be repeated two additional times.
	Info	MARKINGS
9	Info	System Markings
9.3		The system shall be marked with its permitted ambient temperature range, based on the most constrained known limits for the key subassemblies (PV module, battery, or luminaire). The marking shall be in the form: "CAUTION. Suitable for installation only where ambient temperatures are not expected below ___ °C or above ___ °C." The blanks shall identify the minimum (-20 °C, or lower) and/or maximum (+40 °C, or higher) temperature rating of the system subassembly with the most constrained low or high limit. <u>All marked temperatures shall be in no less than 5 °C increments (i.e., 15 °C or 20 °C is permitted; 18 °C is not permitted).</u>



CLAUSE	VERDICT	COMMENT
		<i>New clause added;</i>
9.13		In addition to the marking of 9.12, a PV module or battery disconnect means that requires opening a panel for access, per 7.9.4, shall be marked on an exterior surface of that panel "DISCONNECT SWITCH INSIDE", or similar wording. If the means for removing the panel is not obvious, the marking shall include instructions for removal.
Annex A	Info	SYSTEMS WITH SUPPLEMENTAL POWER CONNECTIONS
A2	Info	Supplemental Battery Charging
A2.3		The system shall have means for switching or regulating the battery charging circuit between the PV module output and the utility-supplied class 2 power source output in a manner that prevents the charging circuit from <u>distributing more current or voltage to the battery than measured during the Battery Charge Rate and Voltage Limit Measurement of 8.2.</u> being concurrently supplied by both sources. <u>Where switching between sources is used,</u> an appropriately rated double pole, single throw relay that complies with CSA or UL 60947-4-1, or similar, is considered suitable for this mechanism. Switching shall only occur within the class 2 circuit, and not on the primary (utility-connected) side of the class 2 power supply. <u>Where current or voltage regulation is used, the regulating circuit shall retain its intended performance under single fault conditions.</u>
A3.3		The system shall have means for switching or regulating the power flow to the luminaire from the battery output and the utility-supplied power source output, in a manner that prevents the luminaire <u>from receiving current or voltage beyond its established ratings.</u> being concurrently supplied by both sources. If the utility supplied power source has a class 2 output, the switching mechanism is permitted to use the same devices as specified in A2.3. Otherwise, an automatic transfer switch or branch circuit emergency lighting transfer switch that complies with CSA C22.2 No. 178.1 or UL 1008, or an emergency lighting control device that complies with CSA C22.2 No. 141 or UL 924, are considered suitable for this mechanism. <u>Where current or voltage regulation is used to limit power to the luminaire, the regulating circuit shall retain its intended performance under single fault conditions.</u>
A3.4		Switching between the battery and the utility-supplied power source is permitted to be controlled by a timer, a voltage sensor, or other means (including remote wireless or local manually-operated switches). <u>Single fault conditions in the switching control electronic circuitry shall be considered if such a fault could allow both charging sources to concurrently connect to the battery without a regulating circuit to limit the power as described in A3.3.</u>



CLAUSE	VERDICT	COMMENT
--------	---------	---------

New annex added;

SYSTEMS WITH VOLTAGE LEVELS PRESENTING A RISK OF ELECTRIC SHOCK INJURY

Annex D

These requirements are supplemental to those in the body of the Standard. They apply to systems and system subassembly devices with operating voltages above 30 Vdc / 15 Vac that are exposed to water, and/or with operating voltages above 60 Vdc / 30 Vac located inside a housing that prevents water entry.

See standard for details.
