

102 Construction – Electrical

102.1 Power-supply cords

102.1.1 The power supply cord and attachment plug cap shall be rated in accordance with Electrical Ratings, [198.6](#), based on the maximum current rating of the lighting assemblies intended to be applied to the base, in accordance with the marking specified in [210.1](#).

102.2 Polarization

102.2.1 Polarity shall be maintained electrically through all components (power supply cord, base, adapter and lighting assembly). The screw shell of an Edison-base lampholder and an identified (neutral) conductor of a ballast shall be connected to the grounded (neutral) conductor of the lighting assembly and the base.

102.2.2 The mechanical means required in [102.2.1](#) for maintaining polarity of the components (for example, a keying ridge or protrusion) shall comply with the Mechanical Means of Polarity Test, Section [182](#).

102.3 Adapter

102.3.1 The base shall be provided with a fixed number of locations for attachment of adapters.

102.3.2 An adapter shall not be provided with a general purpose receptacle.

103 Markings

103.1 An interchangeable type unit shall comply with the marking specified in Interchangeable Units, Section [210](#).

TRACK-STYLE UNITS – SUPPLEMENTARY

104 General

104.1 The requirements specified in this section apply to portable luminaires that utilize one or more replaceable or interchangeable lighting assemblies fitted to a track or portion thereof intended to facilitate adjustment.

104.2 These requirements are supplementary to other applicable requirements in this standard.

104.3 A track-style type unit shall comply with the applicable requirements in this standard. The track and adapter shall comply with the applicable requirements in the Standard for Track Lighting Systems, UL 1574. A lighting assembly complying with the applicable requirements in UL 1574 need not be subjected to further evaluation.

105 Construction – Mechanical

105.1 Track

105.1.1 The track shall be provided in fixed, one piece, lengths with a maximum length of 8 feet (2.4 m) and with the power-supply cord fitter and end cap attached.

105.2 Securement of cord and end cap

105.2.1 The power-supply cord fitter and the end cap shall be permanently secured in place.

105.2.2 With respect to [105.2.1](#), an end cap or power-supply cord fitter is determined to be permanently secured in place when it is secured in such a manner that it is not removable:

- a) Without the use of tools; or
- b) With ordinary tools such as a flat or cross blade screwdriver, common pliers, or a hex head driver.

Exception: The power-supply cord fitter or end cap is able to be removable (removed) with ordinary tools when the assembly means is not visible after installation.

105.3 Mounting means

105.3.1 Mounting means shall be provided with each track. The mounting means shall consist of:

- a) Screws or bolts for mounting the track; or
- b) Clips for mounting the track along with screws or bolts for mounting of the clips.

Exception: A different mounting means is to be provided when it complies with the Track Clip Securement Test, Section [183](#), and is investigated and found to be equivalent to the mounting means described in [105.3.1](#).

105.3.2 Mounting clips, when provided, shall comply with the Track Clip Securement Test, Section [183](#).

106 Construction – Electrical

106.1 Power-supply cords

106.1.1 The power-supply cord attachment plug and overcurrent protection shall be sized in accordance with [Table 106.1](#). Overcurrent protection shall be provided in the power-supply cord.

Table 106.1
Size of power-supply cord attachment plug and overcurrent protection

Cord size AWG	Minimum plug rating (Amperes)	Maximum ampere overcurrent
12	20	none
12	15	15
14	15	15
16	10	10
18	7	7

106.2 Polarity

106.2.1 Polarity shall be maintained electrically through all components (power-supply cord, power-supply fitter, track, adapter, and lighting assembly) of a track-style type unit.

106.3 Receptacles

106.3.1 A general purpose receptacle shall not be provided.

107 Tests

107.1 Mechanical means of polarity test

107.1.1 The mechanical means required in [106.2.1](#) for maintaining polarity of the components in a track-style type unit (for example, a keying ridge or protrusion) shall comply with the Mechanical Means of Polarity Test, Section [182](#).

107.2 Track clip securement test

107.2.1 Mounting clips and the exception to [106.2.1](#) shall be evaluated by complying with the Track Clip Securement Test, Section [183](#).

108 Markings

108.1 A track style unit shall comply with the markings specified in Track-Style Units, Section [211](#).

109 Instructions

109.1 A track style unit shall comply with the instructions specified in Track-Style Units, Section [227](#).

PORTABLE LUMINAIRE KIT – SUPPLEMENTARY

110 General

110.1 The requirements specified in Sections [110](#) – [115](#) apply to portable luminaire kits. A portable luminaire kit consists of all the parts to a portable luminaire in an easy to assemble form either for “building” a unit such as a craft kit. They are intended to be assembled by a person presumed to possess a little or no knowledge of electrical circuitry. The assembled units shall comply with the applicable requirements elsewhere in this standard independent of any materials not included in the kit. Only ordinary tools shall be required for assembly unless specific tools are provided.

110.2 These requirements are supplementary to other applicable requirements in this standard.

111 Construction – Mechanical

111.1 General

111.1.1 The complete portable luminaire kit shall be packaged in a single carton or container. This does not preclude shipping cartons holding many of the individually packaged products.

111.2 Shade

111.2.1 When a shade is not provided, then instructions detailing shade dimensions shall be provided in accordance with Incandescent Units Shipped without Lampshade, [219.1](#).

112 Construction – Electrical

112.1 General

112.1.1 A portable luminaire kit shall consist of all electrical parts and screws for mounting components when required and either:

- a) The required mechanical support or enclosure parts; and/or
- b) Complete instructions for “building” or “finding” parts that meet the intent of the requirement.

112.1.2 The electrical assembly shall be completely factory wired.

Exception: The electrical assembly is not required to be completely factory-wired where the construction of the kit precludes the pulling of the cord, when:

- a) The integrity of the strain relief at all factory connections is intact;*
- b) The means of providing and maintaining strain relief and/or proper polarity are clearly detailed in the instructions; and*
- c) Splices or electrical connections do not require completion by the user except as permitted elsewhere in the standard.*

112.2 Mounting of components

112.2.1 A fluorescent unit subassembly is to include a means for supporting the ballast(s) unless the means of support is integral with the lampholder(s).

112.2.2 A cork or plug mounted on a stem connected to the lampholder is an intended means for mounting the lampholder to a bottle, vase, jar, or similar support.

113 Tests

113.1 Assembly and installation test

113.1.1 The portable luminaire kits required assembly and installation instructions shall be evaluated by conducting the Assembly and Installation Test, Section [184](#).

114 Markings

114.1 Portable luminaire kits and subassemblies shall comply with the markings specified in Portable Luminaire Kits and Subassemblies, Section [212](#).

115 Instructions

115.1 A portable luminaire kit and subassembly shall comply with the installation instructions specified in Portable Luminaire Kits and Subassemblies, Section [228](#).

115.2 All parts provided shall be detailed in the assembly instructions.

PORTABLE LUMINAIRE SUBASSEMBLIES – SUPPLEMENTARY

116 General

116.1 The requirements specified in Sections [116](#) – [120](#) apply to portable luminaire subassemblies. Portable luminaire subassemblies are parts of portable luminaries intended for either factory assembly or field assembly for rewiring a unit by persons familiar with the knowledge and hazards of electrical circuitry. Only ordinary tools shall be required for assembly unless specific tools are provided.

116.2 These requirements are supplementary to other applicable requirements in this standard.

117 Construction – Electrical

117.1 General

117.1.1 A portable luminaire subassembly shall consist of all electrical parts (including wire nuts, pre-stripped and tinned wires, and screws for mounting components when required).

117.1.2 The electrical assembly shall be completely factory wired and the lampholder shall have integral leads or an integral shell that encloses the wiring terminations.

Exception: The electrical assembly is not required to be completely factory-wired where the construction of the subassembly precludes the pulling of the cord, when:

- a) The integrity of the strain relief at all factory connections is intact; and*
- b) The means of providing and maintaining strain relief and/or proper polarity are clearly detailed in the instructions.*

117.2 Power-supply cord

117.2.1 For a unit rewiring subassembly, the minimum power supply cord length shall be such that when the unit is rewired, the external portion of the cord is at least 5 feet (1.5 m) long.

117.3 Mounting of components

117.3.1 A fluorescent unit subassembly is to include a means for supporting the ballast(s) unless the means of support is integral with the lampholder(s).

118 Assembly and Installation Test

118.1 The portable luminaire subassembly's required assembly and installation instructions shall be evaluated by conducting the Assembly and Installation Test, Section [184](#).

119 Markings

119.1 A portable luminaire subassembly shall comply with the markings specified in Portable Luminaire Kits and Subassemblies, Section [212](#).

120 Instructions

120.1 A portable luminaire subassembly shall comply with the installation instructions specified in Portable Luminaire Kits and Subassemblies, Section [228](#).

120.2 All parts provided shall be detailed in the assembly instructions.

PORTABLE LUMINAIRE ACCESSORIES – SUPPLEMENTARY

121 General

121.1 A portable luminaire accessory consists of components such as interconnecting cord sets, dimmers, and switch assemblies.

121.2 A portable luminaire accessory intended for use as a conversion kit to enable a portable luminaire to be converted to a fixed unit (luminaire) shall comply with the requirements for Convertible Units – Supplementary, Sections [95](#) – [99](#).

121.3 These requirements are supplementary to other applicable requirements in this standard.

122 Construction

122.1 The interconnecting means between the portable luminaire accessory and the portable luminaire shall comply with the requirements for Interconnected Units, Section [33](#).

123 Markings

123.1 The portable luminaire accessory shall comply with the markings specified in Section [213](#).

124 Instructions

124.1 The portable luminaire accessory shall comply with the installations instructions specified in Section [229](#).

WORK LIGHTS – SUPPLEMENTARY

125 General

125.1 The requirements specified in Sections [125](#) – [129](#) apply to work lights defined in accordance with [2.66](#).

125.2 These requirements are supplementary to other applicable requirements in this standard.

125.3 A work light with a tungsten halogen lamp shall additionally comply with the requirements in Tungsten Halogen Units, Sections [54](#) – [59](#), unless superseded by requirements herein.

125.4 A work light with a high intensity discharge lamp shall additionally comply with the requirements in High Intensity Discharge Units, Sections [65](#) – [69](#), unless superseded by requirements herein.

125.5 A work light with a fluorescent lamp shall additionally comply with the requirements in Fluorescent Units, Sections [60](#) – [64](#), unless superseded by requirements herein.

125.6 A work light with an LED light source shall additionally comply with the applicable requirements from the Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products, UL 8750, unless superseded by requirements herein.

125.7 A work light marked for outdoor use, in accordance with [214.4](#), or for wet location use, in accordance with [215.1](#), shall additionally comply with the requirements in Wet Location Use, Sections [130](#) – [135](#), unless superseded by the requirements herein.

125.8 A work light provided with an integral generator shall comply with the wet location requirements and be marked in accordance with [214.4](#).

125.9 A work light with an integral or separable battery pack is not within the scope of this Standard. See [1.5](#).

126 Construction – Mechanical

126.1 Assembly

126.1.1 A work light is able to be unassembled when the subassemblies comply with Assembly and Packaging, Section [8](#).

126.1.2 A guard for a work light, when not factory attached, is to be shipped only as a single unattached subassembly when it is able to be attached by common household tools and is marked in accordance with [214.6](#).

126.2 Guards

126.2.1 A work light shall be provided with a guard that complies with this section.

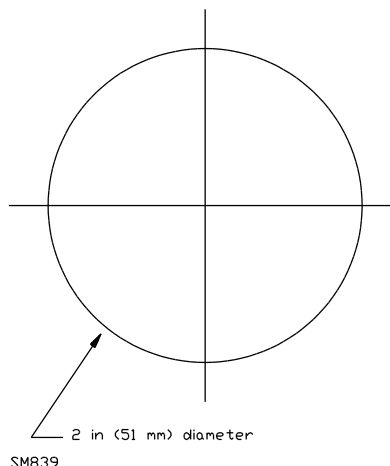
Exception No. 1: A guard is not required when the housing surface temperatures do not exceed 150°C (302°F) during the Normal Temperature Test – General, Section [143](#), Test Method – General, Section [144](#), and Specific Test Conditions – Work Lights, Section [147](#).

Exception No. 2: A work light provided with an integral generator is not required to be provided with a guard when the lamp compartment is located at least 5 feet (1.5 m) above the ground in its lowest position.

126.2.2 A guard shall be fabricated from nominal 0.06 inch (1.5 mm) minimum diameter plated or painted wire.

126.2.3 For areas other than at the exposed lamp or diffuser, the guard shall prevent a 2 inch (51 mm) diameter sphere from contacting any housing surfaces which require guarding. See [Figure 126.1](#) for sphere probe.

Figure 126.1
Sphere probe for work lights



126.2.4 A guard for the lens or diffuser is not required for a work light complying with Exception No. 1 or Exception No. 2 to [128.2.1](#).

126.2.5 A work light guard shall be attached so that it either:

- a) Requires the use of tools for removal; or
- b) Requires two separate actions to disengage the securing means (i. e. push and turn) and complies with the Guard Securement Test in Section [185](#).

126.3 Handles

126.3.1 A work light with external enclosure surface temperatures exceeding 90°C (194°F) during the Normal Temperature Test – General, Section [143](#), Test Method – General, Section [144](#), and Specific Test Conditions – Work Lights, Section [147](#), shall be provided with a handle for positioning the light. The surface temperature of the handle shall not exceed the limits in [Table 144.1](#), item 1(b).

Exception: A work light is not required to comply with this requirement when it requires a tool for making aiming adjustments.

126.4 Bases and stands

126.4.1 Work lights have the option of being freestanding, clamp on, or employing similar portable mounting means, or being provided with a means for mounting to a tool, machine, wall, or similar object.

126.4.2 A stand that telescopes and extends 5 feet (1.5 m) or more above the ground shall be arranged to prevent sudden collapse when aiming or adjusting the work light. This is to be accomplished by a detent, positive latching or locking feature.

126.4.3 The telescoping portion of a stand shall either have a mechanical stop to prevent separation or have an alignment mark. The product shall be marked in accordance with [214.7](#) describing the purpose of the alignment mark.

126.4.4 A base or stand that has casters or wheels shall have an integral locking device.

126.4.5 A base or stand of a wet location type unit that has casters or wheels shall have provision for storing the power supply cord.

126.4.6 Stability of a work light shall not rely on a compartment or a base or stand intended to be filled with liquid, sand, or other material by the user or operator.

126.4.7 *Deleted*

127 Construction – Electrical

127.1 Power-supply cords

127.1.1 A work light rated 1800 W or less shall be provided with a junior hard service cord Type SJ, SJO, SJT or equivalent rated for the current in accordance with [Table 26.1](#).

127.1.2 A work light rating exceeding 1800 W shall be provided with a hard service cord Type S, SO, ST or equivalent rated for the current in accordance with [Table 26.1](#).

127.1.3 *Deleted*

127.1.4 A work light power supply cord shall be routed or secured such that normal adjustment of the light does not result in the power supply cord resting on a surface having a temperature greater than the cord rating.

127.2 Grounding type attachment plug

127.2.1 A work light having accessible metal surfaces that becomes energized due to electrical fault shall have a grounding type attachment plug.

127.2.2 A work light provided with a receptacle shall have a grounding type attachment plug.

127.3 Receptacles

127.3.1 A work light receptacle shall:

- a) Be of the grounding type; and
- b) Comply with applicable receptacle requirements in Receptacles, Section [44](#).

127.3.2 A single or duplex receptacle is rated 15 amperes for the purposes of determining the AWG of the power supply cord and rating of the attachment plug. Alternatively, the marked maximum current rating is able to be used. See [198.6.2](#).

127.4 Tipover switches

127.4.1 When a tipover switch is provided, the Severe Condition Test, [165.3](#) is not required.

127.4.2 A tipover switch shall comply with Switches and Dimmers, Section [43](#).

127.4.3 A tipover switch shall de-energize the work light when tipped over in any direction.

127.4.4 A tipover switch shall be arranged such that the trip mechanism is not able to be externally defeated or result in nuisance tripping. A plunger activated switch where the weight of the work light activates the light source does not meet the intent of the above requirement.

128 Tests

128.1 Normal temperature test

128.1.1 A work light shall be subjected to the Normal Temperature Test – General, Section [143](#), Test Method – General, Section [144](#), and Specific Test Conditions – Work Lights, Section [147](#).

128.2 Abnormal operation tests

128.2.1 A work light is to be subjected to the following tests in Sections [165](#) – [173](#):

- a) Severe Condition, [165.2](#), [165.3](#), and [165.8](#);
- b) (Tungsten-halogen and HID work lights only:) Tungsten-Halogen Lamp Guard, Lamp Containment Barrier, and UV Filter Security Tests, Section [166](#); and

c) (Tungsten-halogen and HID work lights only:) Polymeric Lamp Containment Barrier Test, Section [172](#).

Exception No. 1: The Severe Condition Test is not required when a tipover switch is provided in accordance with Tipover Switches, [127.4](#).

Exception No. 2: The Severe Condition Test and the Tungsten-Halogen Lamp Guard, Lamp Containment Barrier, and UV Filter Security Tests are not required when the unit complies with [128.3.2](#) and is marked in accordance with [214.4](#).

128.3 Stability tests

128.3.1 A work light is to be subjected to the Stability Test, Section [153](#), at an incline of 8 degrees for any possible use adjustment.

128.3.2 A work light complying with Exception No. 2 of [128.2.1](#) is to be subjected to the Stability Test, Section [153](#), at an incline of 33 degrees.

128.3.3 *Deleted*

129 Markings

129.1 A work light shall comply with the markings specified in Work Light, Section [214](#).

DAMP LOCATION USE – SUPPLEMENTARY

129A General

129A.1 The requirements in Sections [129A](#) – [129D](#) apply to portable luminaires marked “Suitable for damp locations.”

129A.2 These requirements are supplementary to other applicable requirements in this standard.

129B Construction

129B.1 The portable luminaire shall comply with the requirements in Corrosion Protection, Section [131.3](#), as applicable to wet location products.

129B.2 The screw shell in a screw shell-type lampholder shall not be constructed of unplated aluminum.

129B.3 Nonabsorptive electrical insulation shall be used in the construction of electrical components where it is relied upon to provide electrical spacings or sole support of live electrical parts or to provide electrical insulation. Untreated fiber and similar material shall not be used; while treated cellulosic fiber, phenolic, urea, porcelain, and similar material, are examples of materials that meet the intent of the requirement.

129C Tests

129C.1 Portable luminaires intended for damp locations shall be:

a) Subjected to the Resistance to Moisture Test, Section [161](#), and

b) If provided with a polymeric enclosure, comply with the Resistance to Impact test of the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746C, using a preconditioning temperature of $0 \pm 2^{\circ}\text{C}$ ($32 \pm 3.6^{\circ}\text{F}$).

Exception: Portable luminaires supplied by a remote Class 2 power unit circuit are not subject to these tests.

129D Markings

129D.1 A damp location type unit shall comply with the markings specified in Damp Location Use, Section [214A](#). It shall not be provided with any information such as markings, instructions, or illustrations that implies or depicts wet location use.

WET LOCATION USE – SUPPLEMENTARY

130 General

130.1 The requirements specified in Sections [130](#) – [135](#) apply to surface-mounted, free standing, or stake mounted units marked “Suitable for wet locations.” Such portable luminaires are suitable for locations subject to rain, vehicle washing areas, locations subject to spray of a noncorrosive and nonflammable liquid, and similar conditions.

130.2 These requirements are supplementary to other applicable requirements in this standard.

130.3 The requirements do not cover portable luminaires for use under water (such as in a decorative fountain or a swimming pool) nor in areas that contain flammable or corrosive liquids or gases.

131 Construction – Mechanical

131.1 Enclosure

131.1.1 A portable luminaire shall be constructed to prevent the accumulation of water on live parts, electrical components, or conductors not identified for use in contact with water.

131.1.2 A polymeric material used as an enclosure for wet location use units shall have an ultraviolet light (UV) resistance rating in accordance with the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746C.

131.2 Water shields

131.2.1 A polymeric water shield, including a silicone rubber boot used over a switch, shall be a UV rated material.

131.2.2 A polymeric water shield that operates at a temperature higher than 65°C (117°F), but not higher than 95°C (171°F), as determined by Normal Temperature Test of Test Method – General, Section [144](#), and that does not have a recognized temperature rating for the measured temperature shall comply with the Thermal Conditioning Test of Section [187](#), Polymeric Thermal Conditioning Test.

131.3 Corrosion protection

131.3.1 Copper, aluminum, and alloys of copper and aluminum, stainless steel, and similar materials having inherent resistance to atmospheric corrosion may be used without additional corrosion protection.