



# UL 676

## STANDARD FOR SAFETY

### Underwater Luminaires and Submersible Junction Boxes

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UL Standard for Safety for Underwater Luminaires and Submersible Junction Boxes, UL 676  
Ninth Edition, Dated August 10, 2015

### **Summary of Topics**

***This revision of ANSI/UL 676 dated October 22, 2019 includes the following changes in requirements.***

***Scope clarifications for non-metallic forming shells and junction boxes***

***Lens Guards***

***Installation instructions related to flexible cords***

***Electric shock test luminaire constant (N)***

***Gasket testing***

***Submersible luminaires – applicable clauses from part I***

***Cycling under water test***

***Number of required grounding connections for submersible junction boxes***

***Editorial corrections and adjustments***

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated April 26, 2019.

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**AUGUST 10, 2015**  
(Title Page Reprinted: October 22, 2019)



**ANSI/UL 676-2019**

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**UL 676**

## **Standard for Underwater Luminaires and Submersible Junction Boxes**

The first edition was titled Standard for Underwater Lighting Fixtures and Junction Boxes for Swimming Pools. The second and third editions were titled Standard for Underwater Lighting Fixtures for Swimming Pools. The fourth, fifth, sixth, and seventh editions were titled Standard for Underwater Lighting Fixtures. The submersible luminaires now covered by this standard were originally covered by the Standard for Electric Lighting Fixtures, UL 57.

First Edition – March, 1972  
Second Edition – December, 1977  
Third Edition – June, 1980  
Fourth Edition – October, 1984  
Fifth Edition – April, 1986  
Sixth Edition – October, 1993  
Seventh Edition – April, 1999  
Eighth Edition – June, 2003

### **Ninth Edition**

**August 10, 2015**

This ANSI/UL Standard for Safety consists of the Ninth Edition including revisions through October 22, 2019.

The most recent designation of ANSI/UL 676 as an American National Standard (ANSI) occurred on October 14, 2019. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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## INTRODUCTION

### 1 Scope

1.1 These requirements cover electric luminaires for installation below the surface of the water in swimming pools, permanently installed spas, hot tubs, and similar water-containing vessels intended to accommodate the complete or partial immersion of persons, and for operation on supply circuits rated 150 volts or less, in accordance with the National Electrical Code, NFPA 70, Article 680.

1.2 These requirements also cover:

- a) Luminaire housings (forming shells) for use with wet-niche luminaires intended for installation as described in [1.1](#);
- b) Mounting brackets for use with no-niche luminaires intended for installation as described in [1.1](#); and
- c) Electric luminaires and submersible junction boxes for installation in fountains and similar water-containing vessels not intended to accommodate the complete or partial immersion of persons.

1.3 These requirements do not cover junction boxes for use in the deck area around swimming pools, fountains, and spas, ground-fault circuit-interrupters, transformer enclosures, or transformers used for the supply of underwater luminaires.

1.4 *Revised and relocated as [5.4](#)*

1.5 *Revised and relocated as [5.2](#)*

1.6 *Revised and relocated as [5.3](#)*

### 2 Components

2.1 Except as indicated in [2.2](#), a component of a product covered by this standard shall comply with the requirements for that component. See Appendix [A](#) for a list of standards covering components used in the products covered by this standard.

2.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

### 3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3.2 Unless indicated otherwise, all voltage and current values specified in this standard are root-mean-square (rms).

#### 4 References

4.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

#### 5 Glossary

5.1 For the purpose of this standard the following definitions apply.

5.2 LUMINAIRE, DRY-NICHE – intended to be permanently mounted and sealed in the wall of a swimming pool or fountain. It is equipped with provisions for conduit connection, and is designed to be serviced from the rear in a passageway or tunnel behind the wall or from the deck.

5.3 LUMINAIRE, NO-NICHE – intended for installation on a mounting bracket that is, in turn, mounted in or on the wall of a swimming pool or fountain where the luminaire will not extend behind the plane of the wall and will be surrounded by water. The luminaire is supplied by a flexible cord of a length that permits the luminaire to be removed from the mounting bracket and lifted to the deck for servicing.

5.4 LUMINAIRE, WET-NICHE – intended for installation in a luminaire housing (forming shell) mounted in or on the wall of a swimming pool or fountain where the luminaire will be surrounded by water. The luminaire is supplied by a flexible cord of sufficient length to permit the luminaire to be removed from the niche and lifted to the deck for servicing.

5.5 WATER, FRESH – Water of electrical resistivity well above that of sea water, generally drawn from lakes, streams, or underground sources and delivered by a private well or a municipality for industrial, commercial or household use. Fresh water treated with salt for chlorine generation, resulting in electrical resistivity that is typically 89 ohm-centimeters or higher (6000 ppm or less), is still considered fresh water for the purposes of this standard.

5.6 WATER, SEA – Water of electrical resistivity on the order of 22 ohm-centimeters, representative of water found in open seas and sometimes used (for therapeutic purposes) in swimming pools.

### PART I – SWIMMING POOL LUMINAIRES

#### CONSTRUCTION – LUMINAIRES

##### 6 General

6.1 A luminaire shall be constructed to provide mechanical strength appropriate for the stress it is likely to encounter during installation and use.

6.2 A luminaire shall be constructed to provide an enclosure for all electrical parts, including the lamp bulb.

*Exception No. 1: The lens face of a PAR lamp is not required to be enclosed.*

*Exception No. 2: Flexible cord, attachment plugs, receptacles, and cord connectors are not required to be enclosed in an electrical enclosure when the luminaire and its installation complies with requirements for Flexible Cord and Connectors, Section [10](#).*