



***Oberon's National Electric Code Compliance
Statement and
Underwriters Laboratories (ULTM)
Considerations when using Oberon's
Wireless LAN Access Point Mounting
Solutions and Telecommunications
Enclosures***

Manufacturers' Statement of Compliance with NFPA 70-2005, National Electric Code

Oberon's wireless access point enclosures and telecommunications enclosures are constructed entirely of non-flammable steel and aluminum above the ceiling plane. Therefore, they are compliant with the following NFPA 70 National Electric Code paragraphs, for wiring and equipment in the air-handling space:

300-21 Spread of Fire or Products of Combustion

300-22 Wiring in Ducts, Plenums and Other Air Handling Spaces, paragraphs (A), (B), and (C)

In particular, the following paragraph is relevant to installing equipment above a suspended ceiling:

300-22 (C), (2) Equipment – Electrical equipment having a metal enclosure, or with a non-metallic enclosure listed for use and having adequate fire resistant and low smoke producing characteristics, and associated wiring material suitable for the ambient temperature shall be permitted to be installed in such other space unless prohibited elsewhere in this code.

Additionally, *NEC* specifies access be permitted to equipment installed in the air handling space, as follows:

300-23 Panels Designed to Allow Access- Cables, raceways, and equipment installed behind panels designed to allow access, including suspended ceiling panels, shall be arranged and secured so as to allow removal of panels and access to the equipment.

For compliance with *NEC*, wireless access point enclosures and telecommunications enclosures should be supported according to the following paragraph:

300.11 Securing and Supporting.

(A) Secured in Place. Raceways, cable assemblies, boxes, cabinets, and fittings shall be securely fastened in place. Support wires that do not provide secure support shall not be permitted as the sole support. Support wires and associated fittings that provide secure support and that are installed in addition to the ceiling grid support wires shall be permitted as the sole support. Where independent support wires are used, they shall be secured at both ends. Cables and raceways shall not be supported by ceiling grids.

Underwriters Laboratory (UL) Considerations when using Oberon's wireless and telecommunications enclosures

UL 50

Enclosures for Electrical Equipment

1 Scope

1.1 These requirements cover electrical equipment enclosures for use in accordance with the National Electrical Code, NFPA 70.

1.2 Specific applications covered by this standard include cabinets and cutout boxes and junction and pull boxes.

UL 50 relates to the construction of electrical equipment enclosures per 2008 NEC, NFPA 70, Article 312.10. Most of Oberon's enclosures are designed to be compliant with NEC article 312.10. Most of Oberon's ceiling enclosures are UL 50 listed (file # E249360). UL50 listed products will state "UL Listed" in the specification sheet. UL 50 listed products will have a UL label inside the product.

UL 94

Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

1 Scope

1.1 These requirements cover tests for flammability of plastic materials used for parts in devices and appliances. They are intended to serve as a preliminary indication of their acceptability with respect to flammability for a particular application.

UL 94 relates to flammability of plastics and non-metallic materials. Most of Oberon's enclosure products have minimal plastic content, and therefore, per UL, are not subject to test for flammability of plastic materials. Oberon's model 1059 has a "Royalite" ABS access point cover, which is UL 94 V5A listed.

Plastic antennas connected to enclosures should have a UL 94-VO listing. Oberon's "Z" antennas have a UL 94-VO listing.

UL 2043

Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces

1 Scope

1.1 This is a fire test method for determining the fire performance response of discrete products (electrical equipment) intended to be installed in air handling spaces, such as above suspended ceilings. These products are subjected to an open flame ignition source and evaluated using a product calorimeter.

1.2 The purpose of this test is to determine the rate of heat release and the rate of smoke release of the burning product samples as they relate to the requirements for fire-resistant and low-smoke-producing characteristics in accordance with the provisions of the National Electric Code, NFPA 70.

1.3 This test method does not provide information on the performance of products in other fire or test conditions. This test does not investigate the toxicity of the products of combustion.

1.4 This test does not cover the constructional, electrical, or other performance requirements of the product.

Oberon's products are not "*electrical equipment*" and therefore are not covered by UL2043. Electrical equipment (the wireless access point), which is mounted in the plenum space, should be UL2043 listed.

Oberon's ceiling enclosures are designed such that installations compliant with NEC, NFPA 70, Article 300-21 and 300-22 can be achieved, when UL2043 listed product (the "*electrical equipment*") is mounted in a properly installed Oberon ceiling enclosure.

Oberon's model WC-AP-1240-X, specifically, has been tested to comply with UL 2043 Fire Test for heat and visible smoke release in plenum spaces; Intertek report #3121942SAT-002

UL 72

Tests for Fire Resistance of Record Protection Equipment

1 Scope

1.1 These requirements cover the test procedures applicable to the fire-resistance classification of record protection equipment intended to provide protection to one or more types of records when exposed to various durations of fire exposure.

Oberon's products are not "*record protection equipment*", and therefore are not covered by UL 72.

UL Design Number, relating to Fire Resistance Rating of a Ceiling Assembly

The degree to which an entire ceiling assembly, not individual components, withstands fire and high temperatures (measured in hours). Specifically, it is an assembly's ability to prevent the spread of fire between spaces while maintaining structural integrity. The fire-resistance rating relates to the assembly and is published in the UL Fire Resistance Directory.

The ceiling system is designed by the architect for a fire resistance rating, per a UL Design Number (the UL Design Number should be known for a facility). The UL Design Number specifies, among other things, the maximum amount of Fixture Penetration (i.e, wireless and network enclosures) in (square ft. / 100 square ft.). The installer/code enforcement officer must insure that the fixture penetration area is not exceeded. There is *not* a UL listing for components (including wireless and network enclosures) that addresses fire resistance rating in a system.

Specific requirements for a UL Design Number can be obtained from

<http://database.ul.com/cgi-bin/XYV/template/LISEXT/IFRAME/index.htm>

CABLING

UL Type CL2P Cabling

Cable which is rated for class 2 circuits (low voltage as defined NEC article 745) in a plenum space.

RF Cabling used in plenum spaces, and in Oberon enclosures (for example, antenna jumpers), should be UL Type CL2P (Class 2 Plenum). The cable should say "UL Type CL2P" on its jacket.

CMP and CMR

CMP- Communications Multipurpose Plenum

CMR – Communications Multipurpose Riser

Data cable used in plenum or riser space should say on the jacket "CMP" or "CMR" respectively. Data cable used in Oberon enclosures in the plenum space should say "CMP" on the jacket.