



# FURNISHINGS FOCUS

3 Part Series on Wired Cabinets and Retail Store Displays

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## Wired Cabinets and Commercial Retail Store Displays – What’s the Difference? Part 1 – Wired Cabinets

**By Bruce Bohren** / *Primary Designated Engineer, Furniture & Furnishings*

There is a wide variety of furnishings used for commercial displays. In each series, Bruce Bohren, UL’s Principal Engineer for Furnishings and Manufactured Wiring Systems, will delve into the different types of displays and their safety requirements. In the first part of the series, we will explore wired cabinets, which are covered by UL 65.



Traditional store display cases, often called showcases, are the typical furnishings you would find in a jewelry store. These cases are covered by UL 65 Wired Cabinets and are illuminated cabinets that may feature open (shelving) or be enclosed. Showcases and UL 65 Wired cabinets are directly tied to Article 410.59 of the National Electric Code (NEC).

For all wired cabinets, the same basic safety requirements apply. When the wired cabinet is connected to the building power system by a cord and plug, the NEC and UL 65 have specific limitations which the cabinet manufacturer and retailer need to be aware of. The cabinet is limited to either a 15 or 20 Amp circuit. When plugged in at the store location, the building circuit must match the wired cabinet rating of either 15 or 20 Amps. The cord that powers the cabinet must be a 12 AWG wire size, jacketed hard service type and be provided with a ground conductor. The power supply cord is only allowed to extend a maximum of 12 inches beyond the cabinet. The limited cord length means the store must have a permanently installed receptacle at the cabinet installation point.

Up to six wired cabinets can be interconnected by cord and plug connection. The receptacle (cord connector) and plug must be the

locking type and the receptacle cannot extend beyond the cabinet. When plugged together, the two cabinets may not be separated by more than 2 inches (50.8mm).

The standard limits additional connections. A cord connected wired cabinet may not have convenience outlets for additional electrical equipment, such as a point of sale cash register. Each cord connected wired cabinet must be self-contained, such that a power supply in one wired cabinet cannot power luminaires in additional wired cabinets.

A permanently connected wired cabinet connected with a UL Listed conduit or UL Listed cable may be interconnected with a conduit or cable, and additional convenience receptacle outlets can be provided. The installation requirements are limited by the NEC requirements and local code requirements.

*In the next article we will explore Commercial Retail Displays which are covered by UL 962, Standard for Household and Commercial Furnishings. ■*

For more information on retail or commercial displays, contact Bruce Bohren at [bruce.g.bohren@ul.com](mailto:bruce.g.bohren@ul.com).



## Part 2 – Commercial Retail Store Displays

*In this second article of our series, we will explore the types of product displays used in retail spaces, and which ones should be evaluated using UL 962.*

Due to the rise in electrified consumer products, retailers are displaying a new diversity of products today and require displays that are certified to UL 962: The Standard for Household and Commercial Furnishings. Consumers want to see, touch and explore these products, and electrified displays can help retailers better show off their products. Similar to UL 65 for Wired Cabinets, UL 962 covers wired cabinets and lighted shelving, and includes additional types of retail displays.

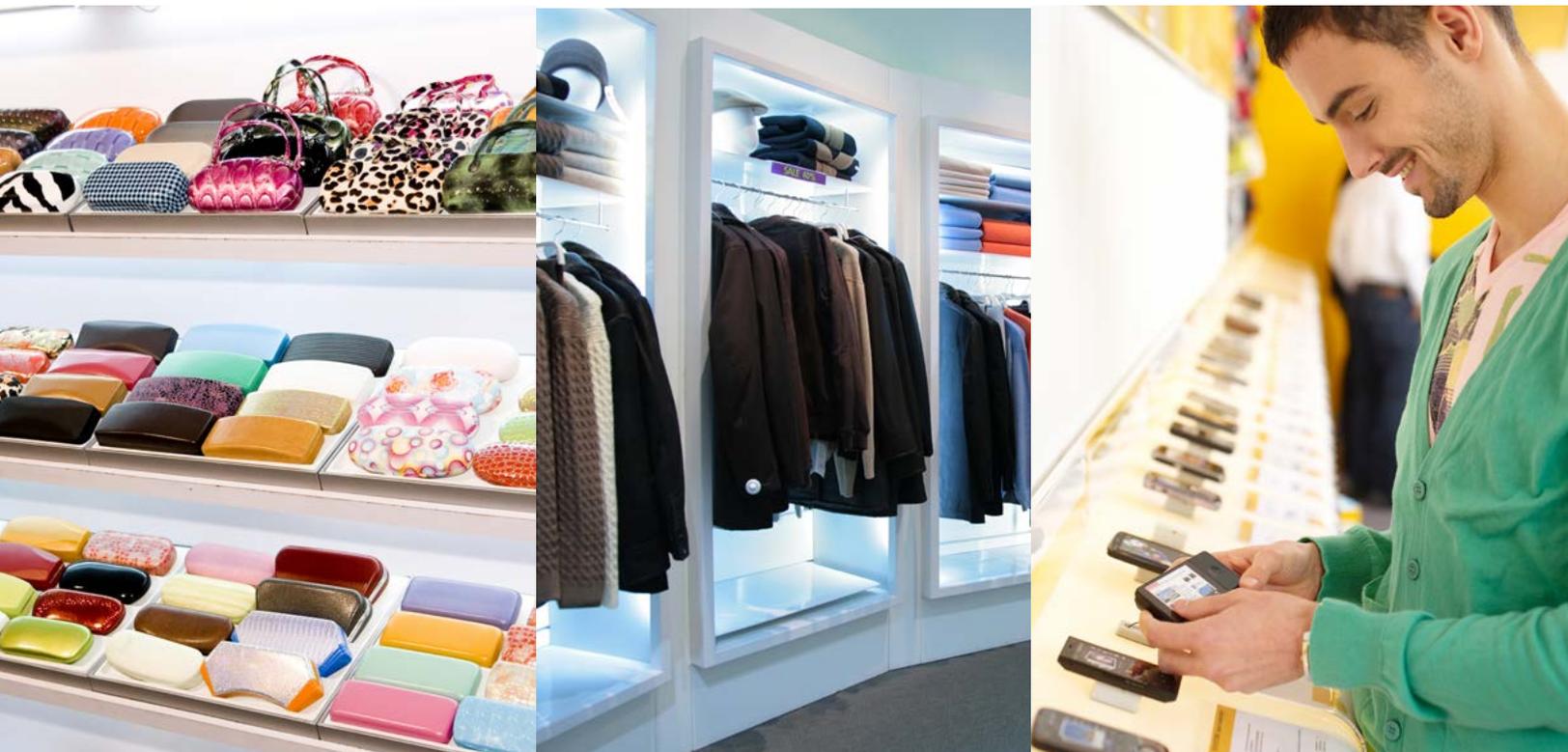
Examples of the displays include: ceiling and wall supported luminaires, displays for cameras and electronics, motorized wire spool and carpet racks, nightlights, door-bells, garage door openers, bathroom fans, stereos, TVs and other retail products.

There are a variety of safety issues that can be associated with these types of displays, including but not limited to the risk of electrical fire and shock hazards; physical entrapment concerns of the products on display; the motorized display that moves; and

potential tip-over hazards from mounting speakers, video screens and other equipment on the display. UL 962 has requirements to address the fire contribution displays may present in retail stores.

UL 962 requirements provide for power supply cords up to 15 feet long and 2 supply cords on a single display. Cords may be sized for the electrical load, which often allows a lighter gauge cord than in UL 65. When motors are supplied to provide motion to the display, UL 962 provides guidance to evaluate the electrical safety of the motor. If an entrapment hazard exists, the standard requires barriers or safety controls to reduce the potential for injury from the moving parts. Some product displays such as a carpet rack not only display the product, but also have features to cut the product to size per the customer's requirements.

In addition to customer safety, UL 962 features provisions to address the safety of the store personnel as well. An example of this is a lock out requirement so that only a trained store operator can turn on the power to operate the display. UL 962 has requirements to address these hazards. The structural strength and flammability of the display is also investigated. ■



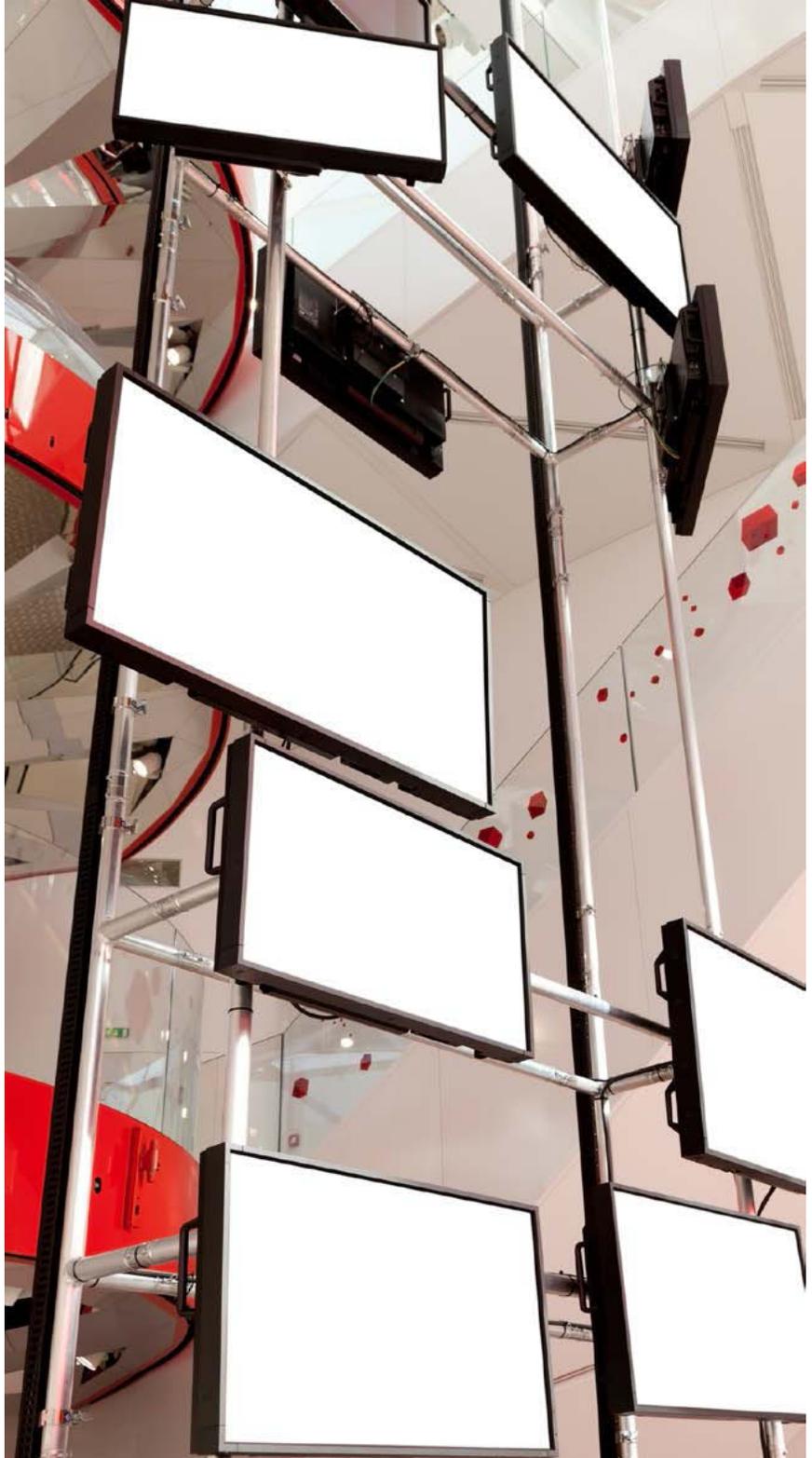
## Part 3 – Why Certify to UL65 or UL962

*In this third article on commercial displays for retail spaces, we will explore which UL standard is best for your needs.*

In Part 1 and 2 of these articles we presented some of the differences between UL 65 and UL 962, which are two standards used to certify retail store displays.

For a basic product display such as a glass enclosed cabinet or a shelving unit with or without a luminaire, manufacturers typically find it best to certify the display to UL 65 for Wired Cabinets. UL utilizes a certification program for UL 65 that typically does not require testing. Instead, the program allows the display manufacturer to build to the requirements in UL 65, and to an inspection document that provides additional guidance. UL's Field Representative (inspector) provides the certification oversight for the program.

Additionally, UL 65 allows for more flexibility in the design of the display, since the standard has requirements for when testing is not required. This gives the display manufacturer flexibility to build custom display cases and shelving systems without needing to have approval from UL engineering for each custom design. The program follows the rules of UL 65, which means that cord and plug connected displays have very limited cord lengths. Additionally, the cord connected displays cannot be provided with empty receptacle outlets for other field-installed equipment such as a point of sale checkout system, or for products that need power to attract the customer. However, a permanently wired UL 65 cabinet can be provided with these features. The program also requires that cabinets utilize UL Listed luminaires suitable for use in cabinets. Recognized component luminaires must be reviewed by UL's engineering group before they can be added to a Wired Cabinet type product.





For displays that are not as simple as a wired cabinet, UL 962 Standard for Household and Commercial Furniture is the standard for commercial displays that are typically more complex in design than wired display cabinets. UL 962 should be used for commercial displays that feature video, motion or power supply options to display products. The standard allows for options such as receptacle outlets on a cord and plug connected display, the use of recognized component luminaires, motorized displays, displays with TVs attached and power supply cords up to 15 feet in length. The certification program for UL 962 does require that each unique design be reviewed by UL's engineering staff, and the flammability of the materials used has specific criteria.

The general rule of thumb is that manufacturers who produce basic illuminated display cases and shelving should choose UL 65. Products that include more advance features such as outlets for the products on display, or point of sale equipment on a cord and plug connected to a display, should be certified to UL 962.

For more information on UL 65 and 962, please contact us at [FurnitureNA@ul.com](mailto:FurnitureNA@ul.com). ■



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