

THRU-BRANCH WIRING FOR UL LISTED LUMINAIRES (FIXTURES)

The NEC addresses the construction of Luminaires (fixtures) as raceways. It does not allow luminaire to be used as raceways, UNLESS the Luminaire (fixture) has been Listed for use as a raceway (Article 410-31), OR the Luminaire (fixture) complies with Article 410-32. It states "Luminaires (fixtures) designed for end to end connection to form a continuous assembly OR luminaires (fixtures) connected together by recognized wiring methods shall be permitted to carry through conductors of a 2-wire or multiwire branch circuit supplying the connected luminaires (fixtures) and need not be listed as a raceway" (2002 NEC).

This means that row mounted strips and industrials (designed for end to end connection) or luminaires with wiring to "daisy-chain" them together (connect by recognized wiring methods) do NOT need to be listed as raceways, providing that the wiring powers only the luminaires (i.e. a circuit cannot be run through the fixtures to power something else at the other end.)

SPECIAL APPLICATIONS FIRE RATED CEILINGS

Fire resistance ratings provide a measure of the ability of an entire structural assembly to act as a barrier to the spread of fire from area to area and confine the fire to its area of origin.

Fire resistance ratings apply only to assemblies in their entirety. Individual components are not assigned a fire resistance rating, and are not intended to be interchanged between assemblies. Rather they are designated for use in a specific design in order that its rating may be achieved.

Generally, fluorescent fixtures bearing the UL listing mark can be utilized in most floor-ceiling designs as long as the utilized fixture area does not exceed the specified ceiling/fixture area ratio, and are installed as required by the specific construction details of the UL Design No. being considered.

Specific construction details will vary, but if considering an exposed "T" ceiling grid system, most designs require additional hanger wire at the midpoint of ceiling grid tees along each 4' side of nominal 2'x4' and 1'x4' luminaires as well as hanger wire at each of the four corners of the fixtures.

In addition to the hanger wire requirements, most designs also require the use of fixture protection which is usually fabricated from available ceiling acoustical material bearing the UL Classification Marking with application details as specified by the specific UL Design No. The extent of fixture protection may range from as little as a single piece of material over the back of the luminaire, with an air gap between the fixture and material, to the use of a complete five (5) sided box enclosing the fixture.

Care should be observed in the application of luminaires in fire rated assemblies to insure that ballasts do not over heat, thereby resulting in shortened ballast life and/or nuisance tripping of the ballast thermal protector.

The use of energy saving ballasts and reduced wattage lamps will alleviate potential thermal problems in most applications involving elevated plenum temperatures. Consult factory with specific details for questionable applications.

The final approving authority is the local code enforcement official and as such should be consulted for local requirements and code interpretation. These requirements should be determined before construction, preferably during the specification period. Check the latest edition of the UL "Fire Resistance Directory" for specific assembly hour ratings and design constraints.

Simply put, there is no UL classification for "fire rated" luminaires. The UL listings refer to ceiling assemblies which may include UL listed troffers as part of the assembly. Some manufacturers offer an "FR" option which consists of a standard luminaire with a label indicating suitability for use in fire rated ceiling assemblies. Standard Day-Brite recessed luminaires using 40wT12 or 32wT8 lamps are listed under UL1598 and will operate without cycling in 1 hour or 2 hour fire rated ceiling enclosures, provided the enclosures are not covered with insulation. Day-Brite can supply a label on the luminaire (indicating "suitable for use in fire rated ceiling") if required.