RESIDENTIAL DIMMING FLUORESCENT FIXTURES

With Greg Murphy

MAXLITE™

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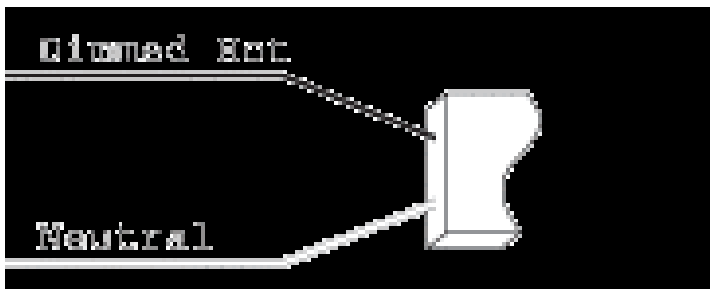
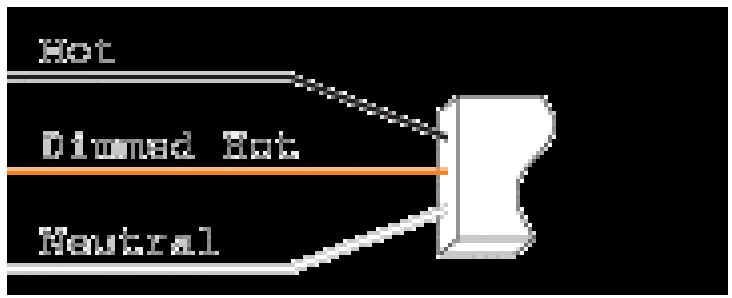
Topics To Be Covered

- *Dimming technologies, 2-wire vs. 3-wire dimming for residential fixtures.*
- *Challenges with dimming.*
- *What the utilities can expect in the near future of dimmable fixtures.*

2 Wire Vs. 3 Wire





2 Wire Vs. 3 Wire

- In order for dimmable fluorescent fixtures to be accepted by consumers, manufactures are going to have to make dimming fixtures compatible with 2-wire incandescent dimming switches. The 3-wire dimming requires retrofitting the existing wiring (to add the third wire) or is limited to new construction.

Pin based Vs. Screw-in

Pin based advantages,

screw-in disadvantages

Pin Based Advantages

- Thermal and optical performance can be optimized.
- Replacement lamps are less expensive.
- Mercury recovery costs less when lamp and ballast are separate.
- Less solid waste is generated since the ballast is not discarded when each lamp fails.
- The likelihood of reversion to incandescent lamps is almost eliminated.

CFL Screw-in Dimming

- Screw-in self-ballasted CFL's are specifically designed to work with existing incandescent dimming circuits. We all know normal screw-in CFL's should not be used on incandescent dimming circuits but even the current "dimmable CFL's" in the market fall short of consumer expectations. There are issues with consistent or uniform dimming ranges and premature life issues related to the heat buildup in some incandescent fixtures.

Hard wire Vs. Portable

It depends where the switch is!

Hard wire Vs. Portable

- There are currently many reliable models of dimmable portable fixtures. With portable fixtures the circuit is designed with the switching (dimming) in between the ballast and the lamp. This is a proven dimming method and is available to the consumer in most markets.
- The difficulty comes with the hard wire ceiling fixtures. In this case the switching or dimming control is occurring before the input power to the ballast, this requires special ballast. The ballast design exist now, it is the price that has kept this technology from penetrating the market. I believe if left alone for market forces to dictate, meaningful market penetration is several years away. Dedicated dimming systems are available for CFL's with four-pin bases and electronic ballasts. Dimming ballasts are capable of modulating the light output from 1-100 percent.
- Dimming ballasts are expensive and require additional investments into special dimming switches. This high initial cost in conjunction with low watts makes dimming control of compact fluorescents an unreasonable energy savings measure for most residential customers. With your help we can overcome this problem.

Sponsors investment leads to advances and acceptance!

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