

USLED

The Right Choice.™



An Exceptional Sign Company

Partial Client Listing

SALLY BEAUTY
SUPPLY

THE **RoomStore**
FURNITURE

BIG O
TIRES



DURON
PAINTS & WALLCOVERINGS

Adecco
THE EMPLOYMENT PEOPLE

WILD OATS MARKET

Michaels
THE ARTS AND CRAFTS STORE



**STATE
FARM**

sam goody

Noble Roman's **Pizza**

Quizno's  **SUBS**

Sbarro's Pizzeria

MAIL BOXES ETC.

charles SCHWAB



PAPA JOHN'S

CINEMARK

 **Nationwide**

U-HAUL

Century 21



TIRE KINGDOM

USLED

The Right Choice.™

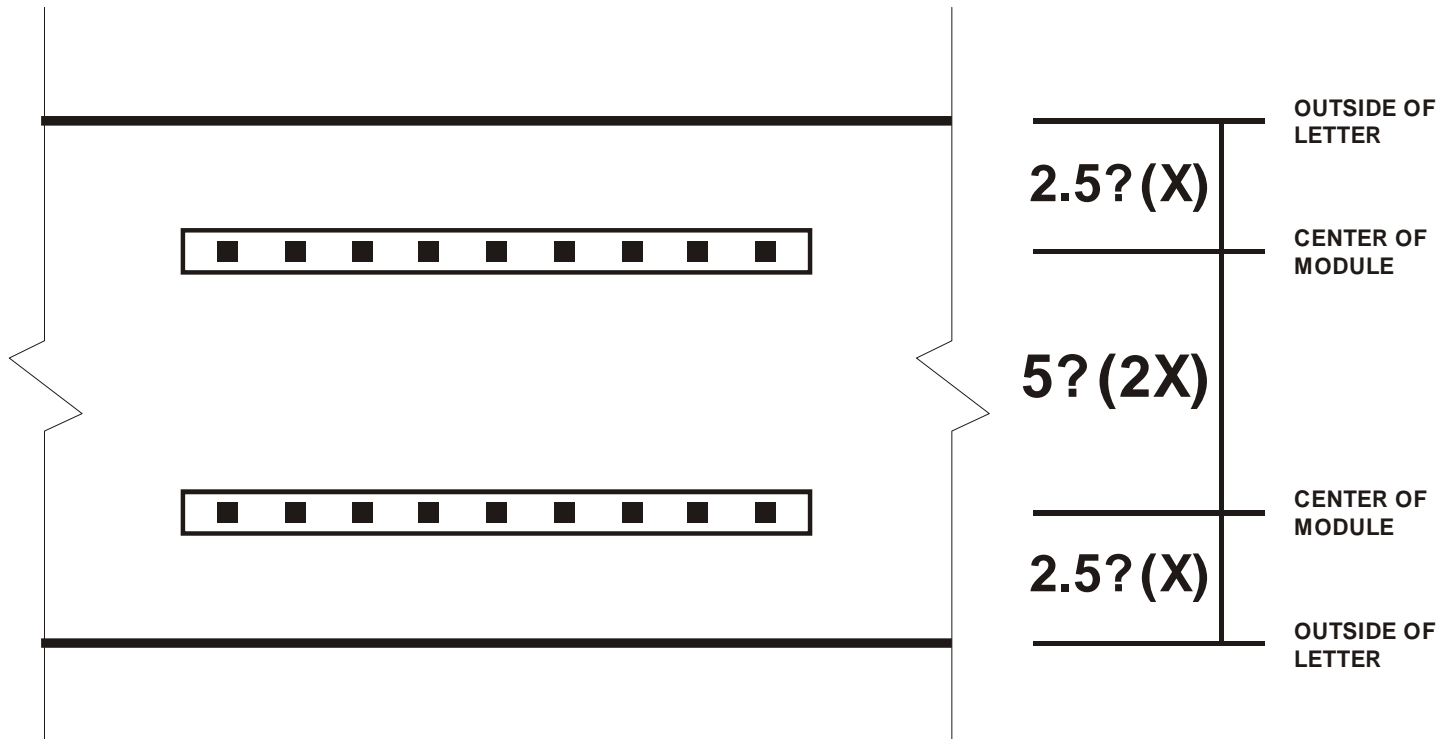


“FOUR SIMPLE RULES”

FOR RED OR RED-ORANGE PRODUCT INSTALLATION

- 1. One row of LEDs per six inches of stroke.**
- 2. One inch end to end.**
- 3. Spacing x-2x-x.**
- 4. When in doubt, use more.**

DRAWING OF X-2X-X LAYOUT ON MULTI-STROKE LETTERS



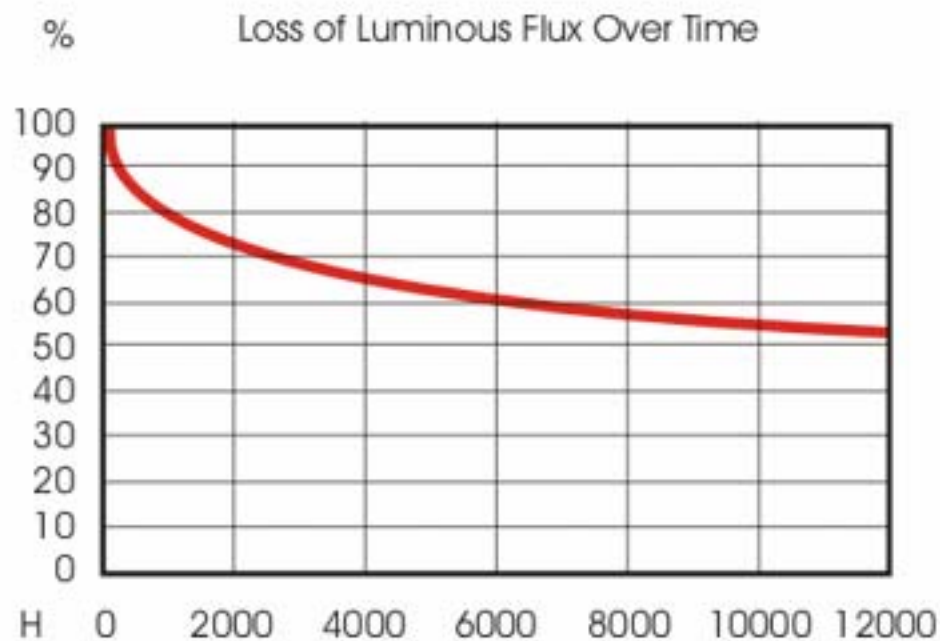


Transformer:

1. AC hook-up.
2. Simplicity of thought.
3. No need for special tools.
4. Common wire.
5. Common connectors.
6. No need for balancing the transformer load (2.5:1 load ratio).
7. Twelve 15" letters to one transformer.
8. One foot of product on a transformer without overpowering the LEDs.
9. Class 2, so no need for secondary to be in conduit.
10. 57 fully-loaded transformers to load a single 20-amp circuit at 16 amps.
11. Transformer can be remote (15 feet of 14-gage wire to the transformer or 30 feet of 12-gage or 45 feet of 10-gage wire).
12. Lower cost compared to most competitors.

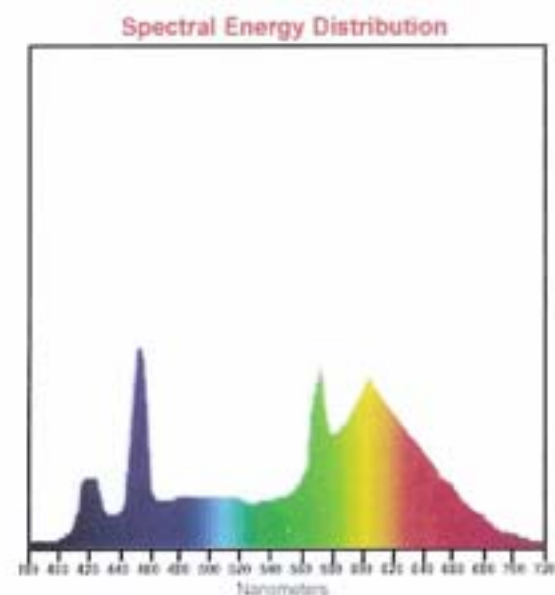
Competing products' complexities and design flaws:

- 1. No conformal coating.**
- 2. Light levels below that of neon even for red.**
- 3. Power consumption only marginally different than neon.**
- 4. Power sources with minimum load requirements.**
- 5. Power sources with requirements of equal loads per circuit to achieve uniform light.**
- 6. Short maximum footage of wire that can be run from the letter to the transformer.**
- 7. Requirements of equal lengths of wire from the letters to the power source.**
- 8. Dip switches on their power sources that need to be used to achieve light balance.**
- 9. DC power requiring polarity considerations.**
- 10. Oversized transformers that do not physically fit in many common sign applications.**
- 11. Large unique connectors that are difficult or impossible to fit into many smaller letter sizes.**
- 12. Requirements to "midpoint" the wire connection to the LED run.**
- 13. Segregated flux bins that require several considerations including careful tracking of what flux grades have been used in each application, what dip switch setting has been utilized with each power source and inventory issues.**



Example of order				
Color/n	diam/mm.	Length/m	Type of glass	Boxes*
2	15	3	K	10

* check the quantity per box in the "packing system" section for these types of glass.



discharge in: low pressure Mercury vapors

Average Lumen Maintenance Characteristics

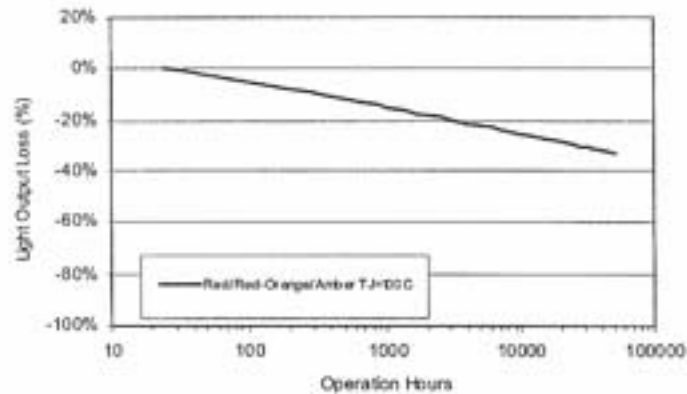


Figure 9.
Light Output vs. Time for Amber, Red-Orange and Red at I_f 385mA.

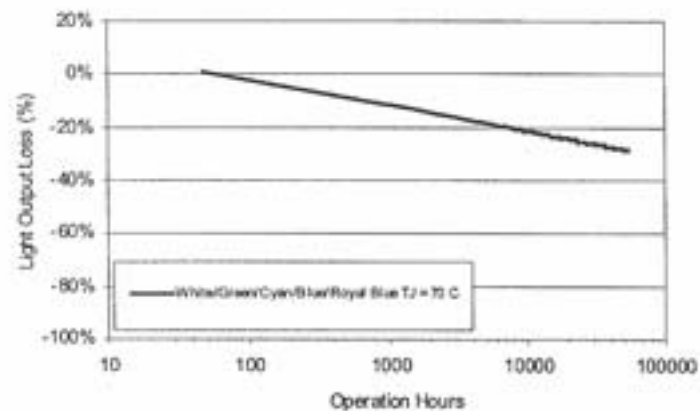
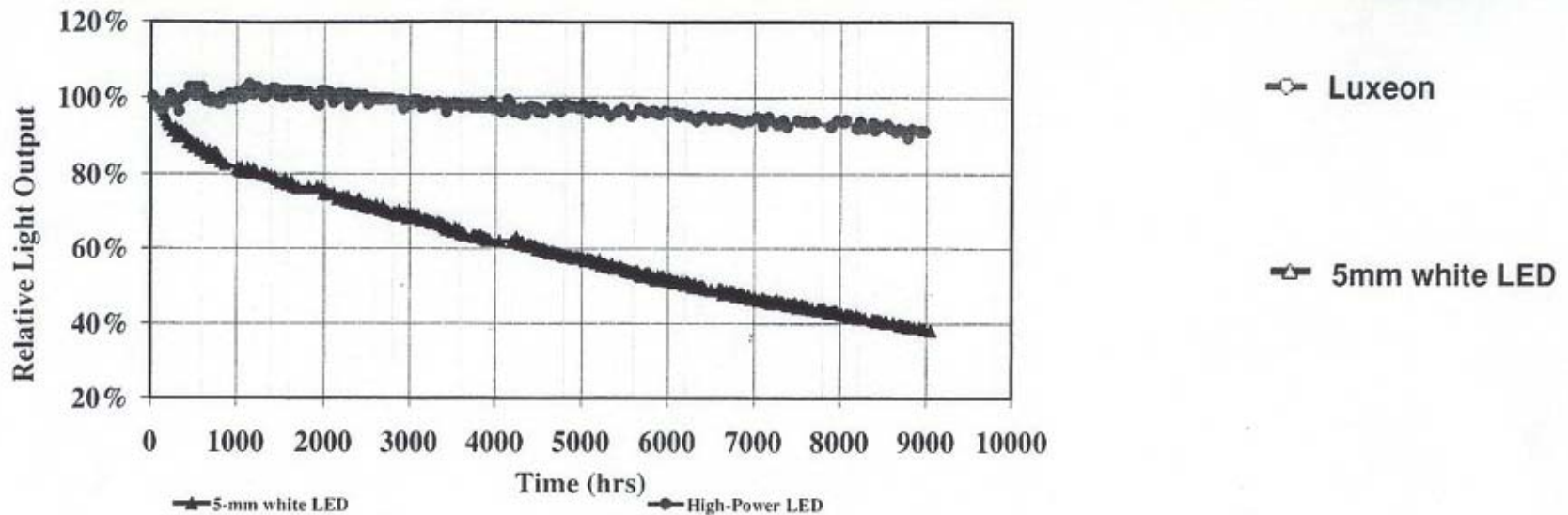


Figure 10.
Light Output vs. Time for White, Green, Cyan, Blue and Royal Blue at I_f 350mA, Relative Humidity less than 20%.

Luxeon - Superior Lumen Maintenance



Lighting Research Center Data - April 2002

Source: Ongoing test data from the Lighting Research Center

- Luxeon demonstrate superior lumen maintenance to epoxy encapsulated (5mm, surface mount, etc.)
- Ongoing tests show Luxeon outperforms 5mm LEDs and Incandescent bulbs have died



BARNES & NOBLE

BOOKSELLERS



ORVIS

5848

The Eye Glassiers of Houston

ELEGANT EYEWEAR

13011

NORWALK

THE FURNITURE IDEA





AMERISUITES



STARBUCKS
COFFEE

**STARBUCKS
COFFEE**



THE HOME DEPOT

MINNESOTA'S HOME IMPROVEMENT WAREHOUSE



WAL★MART



HOOTERS

AA CLAM:

JO:

End User Perspectives:

- 1. Less outages lower maintenance costs and also require fewer labor hours devoted to sign issues by facilities personnel.**
- 2. Less power consumption increases corporate earnings and value.**
- 3. No missed deadlines due to last minute broken neon.**
- 4. No lost advertising value due to sign outages.**
- 5. Lower freight costs.**
- 6. Longer sign life adds value to the store and the company.**
- 7. Signs are genuinely reusable so store remodels cost less and have fewer deadlines to manage.**
- 8. No dimming in cold weather, contrary to white neon.**
- 9. A repair to white LEDs does not generally necessitate all new lighting.**
- 10. Greater consistency in sign light quality store to store.**

As you can detect, some of these advantages accrue to the construction department while others to the facilities managers and still others appeal to the financial officer or marketing personnel.

Sign Company Perspectives

1. Neon breakage eliminated.
 - A. No completion delays - no missed grand openings.
 - B. Increased client satisfaction.
 - C. Less warranty and production costs.
 - D. Faster invoicing and increased cash flow.
2. Faster sign installation.
 - A. Increased profits.
 - B. Better utilization of higher paid employees and equipment
(a typical sign installation truck, crane and equipment can cost \$85,000 or more).
3. JIT purchasing made possible.
 - A. Lower inventories.
 - B. Increased flexibility.
 - C. Better cash flow.
 - D. Less floor space used for inventory of sign lighting components.
4. Faster shop assembly of letters increases throughput and lowers overhead per dollar of output.
5. Red and red-orange LED modules actually cost less than neon in small letters as well as some larger letter sets. Most letter sets with red or red-orange can be sold at the same price as they would be if lit with neon.
6. There is less training needed to become competent at installing LEDs in letters, installing LED-lit letters on the wall or servicing LED-lit letters than to achieve the same level of competence with neon.
7. LEDs require much less storage space, compared to neon and there is virtually no risk of breakage losses. Less floor space used means less overhead.
8. Due to the lighter weight and no breakage risk, LED-lit letters cost less to ship.
9. There is no need to purchase and house an expensive neon plant or to employ highly skilled and highly compensated neon tub benders.
10. There is no need to transport, store, handle and dispose of toxic materials like mercury, which is used in the manufacture of neon.

Distributor Perspectives:

- 1. Selling LEDs increases their dollar volume due to the higher price of LEDs and the installation savings moving from the installing company to the distributor.**
- 2. Eliminates losses due to glass breakage.**
- 3. Less space is needed for LEDs compared to neon. In fact, \$1 million worth of product at wholesale can be stored in a 10'x10' room stacked 9' high.**
- 4. Sale of LEDs for retrofits offer distributors an unparalleled opportunity for product sales.**

It's very detail you leave out becomes the challenge you leave in.

It does not take any more energy to think big than to think small.

It is easy to have a complicated idea. It is very, very hard to have a simple idea.
Carver Mead