

EGL Neon Specification Guide

May .06



Neon and Cold Cathode

The *EGL Specification Guide* is intended for use in all applications where Neon and Cold Cathode is applied.

Neon's ability to outperform all other sources of light is a combination of many factors. To insure all details are considered, this guide provides application details for lighting professionals.

EGL colors can be specified using the EGL color designation. (Ex. EGL CL Designer 71) Part numbers not req.

DETAILS:

1. **Neon Tubing Rated Life** - Minimum 50,000 hours. 10 years.
2. **Neon Transformer Rated Life** - 20,000 hours. 5 years.
3. Validity: Millions of examples still in service 30+ years.
4. *High Lumen Output per foot.... Low Current - Energy Efficient.*
5. **EGL Rare Earth Phosphors** consist of chemicals incorporated in phosphor coatings that emit extremely narrow bandwidths of light. Results in brighter more vivid colors that outperform all other types of lighting. Light output depreciation is minimized and Rare Earth phosphors along with our C.L. Designer Whites exhibit exceptional color stability.
6. **EGL C.L. Designer White Tubing** consists of 6 high output white colors available in standard neon tubing and cold cathode tubing, for use in applications where output, color consistency and color rendition is important. This tubing is also a rare earth phosphor, and is well suited for channel letters, cove lighting, and architectural accent lighting. The colors range from C.L. 24 white (Incandescent) to C.L. 71 white (Daylight) .

Components

- Design
- Tubing
- Electrodes
- Processing
- Gas
- Channel Letters
- Contacts

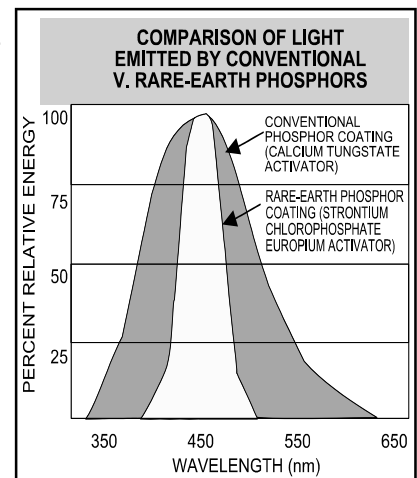
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Rare Earth Tubing Colors

Advantages

- Increased Illumination—Higher Visibility and Impact
- More evenly illuminated *Channel Letters*
- Increased illumination in colder climates
- More attractive lighting with truer colors
- Improved color range and intensity
- Higher color rendition and color preference.
- Colors resist ageing or graying and replacement units will match more closely
- Consistent color from end to end.



EGL Neon Tubing Color Selector

REQUESTED COLORS FOR INTERNALLY ILLUMINATED LETTERS	
<ul style="list-style-type: none"> EGL C.L. Designer 71(K-4 gas) 	
<ul style="list-style-type: none"> EGL CLEAR GLASS (w/ Neon gas) 	

EGL Electrode Selector

ELECTRODE TYPE	DESIGNATION	TUBE LENGTH	OPERATING MILLIAMPS
EGL electrodes must be used. No substitutions			
EGL Premium 8CC/T8CC	(15CL/T15CL)	glass length available-2 3/8, 2 5/8 2 7/8 13-15MM TUBES	4 FT.— 8 FT. max. length 30—80 MILLIAMP

SECTION I SPECS.

A.) Select color from list above. B.) Note tubing diameter on all specs. C.) Select correct electrode from chart.

- Colors above available in 12mm, 13mm, 15mm.
- 12—13mm is used for lettering up to 18 inches high, and some decorative borders and highlights
- 15mm tubing applies to most indoor & outdoor applications, channel letters and border tubes.
- Recommended tubing length—maximum 8ft. Long with one weld on tube and two welds at electrodes.
- Electrodes must be matched to each project to insure longevity of tube life.

EGL Processing Guide - Cold weather fill

SECTION II SPECS.

Processing is the life of the tubes, so it is critical that all equipment and techniques conform to the requirements listed in this detail. This is the minimum quality acceptable.

- Processing Equipment must be capable of achieving and maintaining a vacuum of less than 5 microns.
- Gauges must include a temperature gauge for glass temp., Milliamp bombarding meter , Torr or positive pressure gas filling gauge, and a vacuum gauge.
- Specify only EGL Cold Weather Gas for all indoor and outdoor Argon filled tubing colors, and EGL Neon Gas for all neon filled colors. Substitutions are not acceptable unless complete testing reports are filed with EGL.
- Tubes shall be individually processed, and filled with industry standard filling pressures.
- Neon Tubing must be heated to a minimum 250 degrees Celsius(485 F.)
- Gas must be filled at no less than 50 degrees C. (122 F.)
- All neon units must be welded to manifold for evacuation, (No tube or hose type connections are acceptable)
- Only Triple Distilled Mercury in Glass bottles must be used.The amount of 200mg shall be used per tube. Mercury Dispensers must be glass.
- Neon units must be aged (operated) for a minimum 24 hours before installation.
- Neon units should be warranted for 2 years to be trouble free.
- All neon units 4 ft. or less must add 2mm gas pressure to the gas pressure chart levels.

TUBE	NEON	K-4
12mm	11mm	11mm
15mm	9mm	9mm
18mm	8mm	8mm
20mm	7mm	7mm
25mm	6mm	6mm
GAS TUBE PRESSURE		

Transformers and Wiring

SECTION III SPECS.

- Solid state transformers are recommended for best efficiency over conventional transformers
- Transformers must comply with local and federal codes. All transformer certification must be clearly marked.
- Transformers are selected for their environment. Outdoor transformers may require a waterproof enclosure .
- All outdoor tubing operating at below 0 Celsius (32 F.) that uses K-4 Argon Gas requires the use of 60 milliamp transformers to insure consistent illumination in colder climates.
- Neon units operating on 60 milliamp transformers should be 15mm diameter or larger.
- Transformers must be loaded in accordance with ANSI Footage charts, and a 5 - 10 % reduction of load should be employed on all outdoor applications.
- All installations must be tested with a portable ma (Milliamp) meter to insure they are operating within guidelines.
- High Voltage wiring must not exceed 15 ft. leads.
- Only 1/2 inch metallic conduit is acceptable for secondary wiring.
- Transformers with a maximum 10,500 Volts or less are recommended.
- Single line exterior border neon should only utilize 9000 Volt or less transformers.
- Input voltage must be 120 Volt +- 3% variable.
- Proper ground bonding as per code must be followed.
- Maintain high voltage spacing requirements. (1 - 1.5 inches from any non-metallic surfaces.)
- Use of PVC electrode insulators for outdoor applications are prohibited.
- All GTO High Voltage wiring must be rated for 15,000 volt operation.
- All conventional transformers must be HPF type (high power factor)

TRANSFORMER MILLIAMP CHART

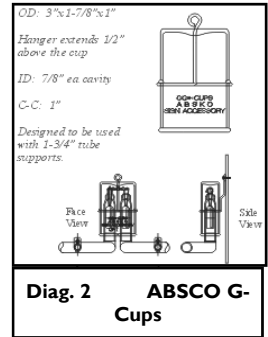
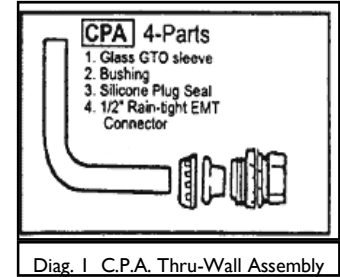
30 mA Transformer = 24 mA installed
 60 mA Transformer = 48 mA installed
 120 mA Transformer = 96 mA installed

mA readings below are not acceptable.
 mA readings above are acceptable.

EGL Neon Design/Channel Letters

SECTION IV SPECS.

1. Neon units in Channel Letter applications, must have spacing between tubing no more than 3 inches, and 1.5 inches from letter sides.. Exposed neon can utilize any spacing, as this method is decorative.
2. Neon channel letters with plastic faces must be 5 inches in depth minimum to avoid hotspots in letters.
3. EGL **Rare Earth** tubing colors should be specified behind like colors. Ex. (7328 white plastic— use EGL CL Designer 71 white)
4. Use EGL Plastic—Neon color selector guide for color choice.
5. Outdoor installations require **Absko C.P.A. (Conduit Plug Assembly)** for all thruwall connections to protect against moisture. Diagram 1.
6. Indoor installations where few surface perforations are required, can use PK style housings.
7. There must be a minimum of 1 tube support (standoff) every 2.5 ft. of tubing, or a minimum of 3 tube supports on 1—8 ft. unit. This is a UL Listed product for indoor or outdoor applications. Tube supports must be installed 6” from each end of the neon tube.
8. All letter backs on Channel letters must be made from non-combustible material approved for use in outdoor applications. Wood backings must not be used..
9. Outdoor letters must have 1/4” Drain holes for moisture in the bottom of each letter.
10. EGL recommends that the inside of letters be painted matte white for enhanced light reflection.
11. All EGL electrodes must be paint matched using **Neon Blockout paint**.



NEON SELECTION GUIDE FOR CHANNEL LETTERS			
PLASTIC COLOR	CYRO ACRYLIC	ATOHAAS ACRYLIC	NEON COLOR
WHITE FACE	015-2	7328	EGL C.L. DESIGNER 71 WHITE
BLUE perforated film w/ white illumination at night	020 DIFFUSER	EQUAL	EGL CL DESIGNER 71 WHITE
RED FACE	278 RED	EQUAL	EGL CLEAR GLASS W/NEON

* Tubes measured on 60 milliamp transformers are approximately 75 % brighter than the same on 30 milliamp transformers.



Your Neon Source
The EGL Company, Inc.

CITIGROUP

E.G.L. Co. Inc.
100 Industrial Road
Berkeley Heights
New Jersey
07922 USA

Phone: 800 345 9010
Fax: 908-508-1122
Email: sales@egl-neon.com
Web: egl-neon.com
Contacts:
Kevin Rourke: krourke@egl-neon.com
Cell# 973 727 6595
Sean Sulzbach: sean@egl-neon.com
Chief engineer Bernard Diffin
Bernard@egl-neon.com

Low Maintenance Lighting Design Guidelines

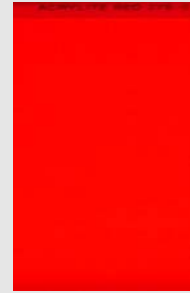
- Make form fit function
- Life expectancy... decide!
- Specification of Premium Components
- Clearly Specify and Enforce
- Pre-install planning: Surveys and Layout
- Design for maintenance, AND installation.
- Consider moisture egress
- Insure Tube Processing Integrity
- Provide required electrical supply
- Upon install pay attention to " punch list "
- Design for SGFP. (secondary ground fault protection)

Citigroup channel letters

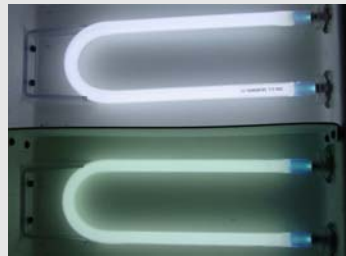
Why is it so important to specify neon components?

Increased light output = increased visibility:

278 RED faces: Recommended EGL Clear Glass w/ neon



White faces: Recommended EGL CL Designer 71 white w/ K-4 (top) 50% brighter over standard 6500(bottom)



Blue perforated faces: EGL CL Designer 71 white w/K-4 illuminating blue perforated for white illumination. Highest visual impact.



*purple perforated film shown here for illustration purposes only