

**SECTION 16515
NEON COLD CATHODE LIGHTING
PART 1 – GENERAL**

Description: Continuous neon/cold cathode running continuously for full intent of architectural cove. All pockets shall be illuminated uniformly from end to end with seamless light. Provide with all transformers as necessary located with core space ceiling for no audible noise. *E.G.L.* color & tubing size to be determined by

1.1 SUMMARY

- A. Section Includes:
 - 1. Supply and installation of Neon Unit Package including, but not limited to: high voltage side wiring from transformers to electrodes, neon tubes and connectors.
 - 2. Supply of Neon transformers and boxes.

1.2 RELATED ITEMS

- A. Section 16111 - Installation of Conduit, including conduit from transformers to J-boxes by electrical contractor.
- B. Section 16120 - Installation of Wire and Cable from primary service to transformers by electrical contractor.
- C. Section 16461 - Installation of transformers by electrical contractor.

1.3 REFERENCES

- A. UL 2161, Neon Transformers and Power Supplies.

1.4 SUBMITTALS

- A. Submit shop drawings under provisions of Section 16515.
- B. Shop drawings to include:
 - 1. Neon Units: List size and locations of attachment and overall dimension of each unit. Indicate color and method of attachment.
 - 2. Neon transformer quantities
 - 3. Transformer load calculations.
- C. No Substitutions unless prior approval by _____, and E.G.L. Co.Inc.

1.5 UNIT PRICES

- A. Submit unit price per lineal foot of conduit behind finish or soffet application from transformers to neon electrodes.

1.6 QUALITY ASSURANCE

- A. The transformers indicated on the drawings are diagrammatical; furnish the quantity required for the neon fabricator's design.
- B. Coordinate quantity of transformers between the electrical contractor and neon fabricator.

PART 2 - PRODUCTS

2.1 NEON MANUFACTURERS

- A. EGL will recommend Neon Manufacturers / Fabricators throughout the US and Canada; Contact krouke@egl-neon.com
sean@egl-neon.com
(800) 345-9010 cell:973 727 6595 ref: neon/cold cathode applications c

.....

2.2 NEON ACCENT LIGHTING MATERIALS

- A. Neon Tubing and Gas: Provide diameter of glass(12-15mm) where indicated on the Drawings. Tubing and gas colors as described below and where indicated on the Drawings:
1. The following E.G.L. neon colors/gas are to be determined & approved by _____
Straight Argon for all 120mA. K4 gas used up to 60mA. Neon shall run w/30 transformers
- B. Neon Tube Supports:
1. EGL 1 3/4" aluminum single w/wire.
 2. McMahon's #10T3 (glass) with wire ties.
- C. Transformer: 9000 volt maximum, provide transformers contained in transformer box with disconnect in compliance with UL2161.
1. Acceptable Manufacturers:
 - a. TFT (solid state)
 - b. Ventex (solid state)
 - c. Allanson (core/coil)
 - d. France(core/coil).
 2. 15mm neon: 30 or 60mA transformers. TBD
 3. 10-13mm, 30mA maximum transformers. TBD
 4. Provide open circuit protection.
 5. 15m and up. 30, 60, 120mA.
- D. Neon Wire: FRNC silicone-compound insulated wire, copper or aluminum conductor, 15,000-volt insulation, stranded conductor, white, GTO-15. UL 814 & 1581, NEMA WC3, ANSI/ASTM B3.
- E. Electrodes: E.G.L. Electrodes (no substitutions) electrode ma rating to specified to milliamp of transformer used.
1. **EGL Advantage™.**
 2. **EGL (Tubulated) Advantage™.**
- F. Neon Electrode Insulator, White color (gray or black can cast a shadow):
1. Diversified Components silicone "CAPS", 103-C-15; 15mm or equivalent for 10mm.
 2. All components should have a UL marking on each piece used.
 3. Masters Technology.
- G. UL Listed Connector Assemblies: If local authorities require UL listed neon connector assemblies, provide an additional break-out price for same. Acceptable UL connectors:
1. EGL RK212ST(terminal) RK212SJ(jumper) see attached diagram.
 2. "G-WPS & Tubes", Absko Products, San Diego, CA.

2.3 FABRICATION OF NEON

- A. Manufactured Components Required:
- B. E.G.L. MAXI-Vac Pumping system or equal to: a minimum of 32mm main body and the use of greaseless stopcocks.
- C.
1. Two pump system. One rough pump and one finish pump w/diffusion or turbo pump.
 2. Gauges: 1 positive pressure and 1 pirani (or thermocouple type).
 3. Updated Bombarder choke control unit with a minimum of 15KVA with a variac controlled choke.
 4. Milliamp meter for bombarder (0-1000mA): Equipment should be designated to evacuate the manifold to below 10 millitorr (microns) in approximately 1-2 minutes. Five (5) millitorr (microns) or below is optimum. Tubulation glass
- Connecting the tube to the manifold should be as short as possible and without sharp 90° bends, which constrict flow rate. Rubber tube connections between manifold and tubes **are not acceptable**.
- D. Processing of Tubing.
- Shall be determined by directions included in each box of electrodes used and length of tube.

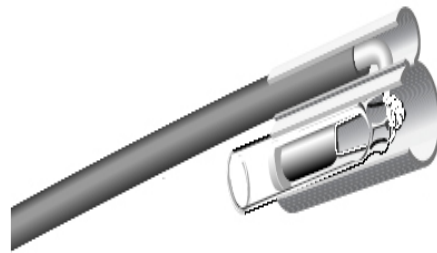
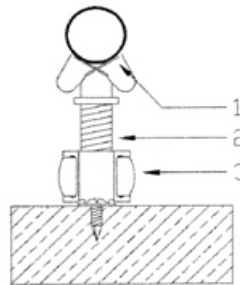
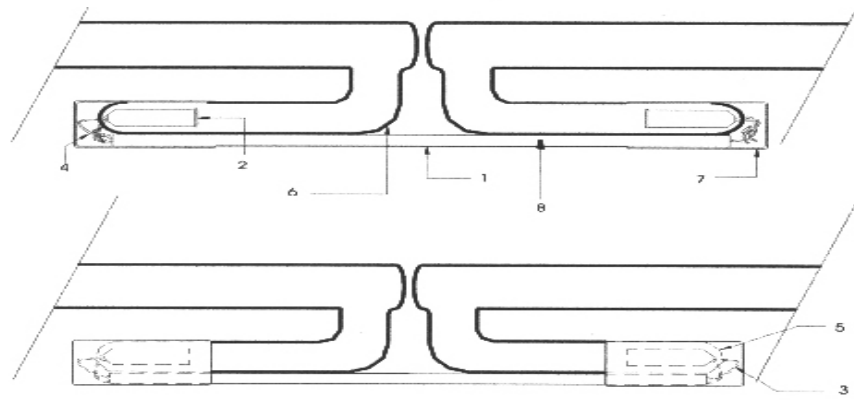
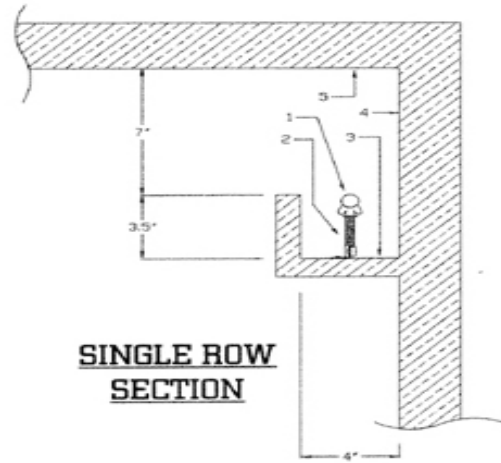
- E. Burn-in: Remove tubes from manifold, place on burn in table and age for a minimum of eight hours. Transformer current shall not exceed 30 ma for 15mm tubes and 20 ma for 10mm tubes. Inspect tubes for quality prior to removal from burn-in table.
- F. Tube lengths: No Unit shall exceed ten feet in length (maximum two 5 foot tubes) or less than two feet in length.
- G. Glass Fabrication Requirements:
 - 1. Burners Heat levels shall be high enough to work the glass without damage to the phosphors, particularly the more heat sensitive components (blue and green).
 - 2. Double back Bends: shall be executed in a manner to minimize stretching or breaking of the phosphor coating exposing the discharge column on the outside of the bends whenever possible.
 - 3. Amount of welds in a single unit shall be limited to four, including electrodes.
 - 4. Tubing shall be wiped clean before fabrication to remove excess phosphors.
 - 5. Weld procedure: The removal of phosphor coating at the end of tubes prior to making a weld joint shall be limited to approximately 1/16".

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install neon units centered, level and aligned at locations indicated on Drawings in accordance with manufacturer's instructions and herein specified. Conform to applicable codes and ordinances.
- B. Install tube supports 6 inches from each electrode and approximately 2 feet o.c. between. Provide approximately 1/4" spacing between ends of tubing units.
- C. All curves shall flow smoothly and continuously along the tubing length and across breaks.
- D. Install wiring from J-boxes to transformers in metal conduit.
- E. Wiring from above ceiling mounted transformers to neon electrodes shall be concealed behind finish wall and shall be installed in listed flexible conduit (metal or nonmetallic).
- F. Wiring connecting transformers to neon tubing units shall be as short as possible and insulated to prevent capacitance destructive to the cable and neon units.
- G. Exposed high-tension cable from electrode to electrode shall be approved silicone GTO w/sleeving.
- H. Clean and polish neon strips removing dust and dirt prior to energizing.
- I. Provide Transformer locations and neon wire lengths as recommended by Neon Fabricator. Maximum GTO cable length each side of a transformer to be 20 feet. Whenever possible transformers shall be mid point grounded or virtual grounded to prevent voltage drop from transformer to neon.
- J. Provide adhesive backed 3/4" diameter ceiling identification markers at each neon transformer location. Markers shall be suitable for ink notation on purple colored faces.
- K. Cross overs and double backs shall be painted once with an approved block out for indoor and outdoor use, and then painted to match background.

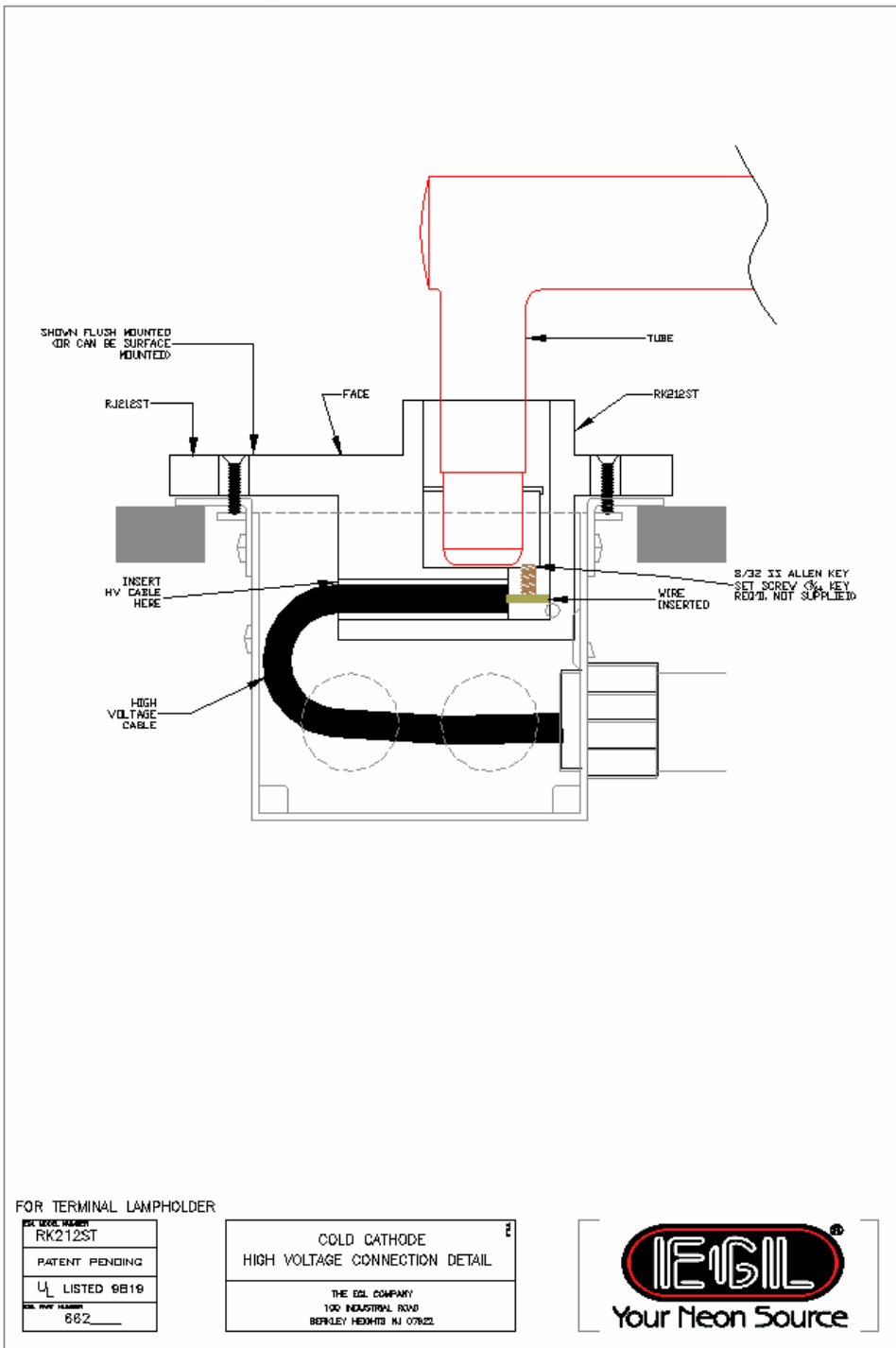
END OF SECTION



CODL CATHODE DETAIL TERMINAL

Kevin Rourke

knourke@egl-neon.com



HOUSING DETAIL JUMPER

Kevin Rounke

krounke@egl-neon.com

