FLN-MAR RUBBER & PLASTIC'S INC.
L.E.D. ILLUMINATED STREET NAME SIGN SPECIFICATIONS

DESCRIPTION - Light Emitted Diodes (L.E.D.), Edge Lit Internally Illuminated Street Name Signs
This specification shall govern for L.E.D. Edge Lit Internally Illuminated Street Name Signs attached to the traffic pole. All materials used in fabrication shall be new and of excellent quality.

Sign Dimensions:

1. Sign will open by removing side extrusion.
2. The height of the sign shall be a minimum of 12" and a maximum of 30" viewing of up to 600 feet away with a 9"- 12" Highway Gothic letter height.
3. The sign will be a maximum depth of 2 5/8" for double-sided and single sided, on all four sides.
4. Maximum weight of signs is 6 lbs per square foot for double-sided signs.

Environmental Requirements:

1. The sign fixture shall be designed and constructed to prevent deformation or failure when subjected to 150 mph wind loads in conformance with the requirements of the AASHTO 1 publication.
2. The sign fixture should be able to withstand and operate at temperature extremes of -40 degrees to 140 degrees F.
   Signs are listed and approved by UL 48 standards. All signs are marked for Electric signs UL48.
   Signs have been tested for the following:

   Exclusion of Water Test
   Strain Relief Test
   Temperature Test
   Dielectric Voltage-Withstand Test

Materials:

1. All materials furnished shall be in accordance with the NEC.
2. Sign shall be single sided or double-sided message. The background shall be 3M diamond grade translucent sheeting with green E.C. film. Town logos or seals can be easily applied

Housing:

1. The extrusion/housing is made from 6063-T5 aluminum and is 2" x 2 5/8". Light engines are mounted inside the top channel or top and bottom. The thickness of material where the light engines are mounted is a ¼" thick. This will also help to dissipate the heat. The other side of the extrusion is grooved to accept plastic faces. End caps will have a poly-ethylene gasket to form a weather tight seal.
   Extrusion must be designed so that L.E.D. assembly will slide into slots extruded into channel.
2. All extrusions must be attached at all four (4) corners inside using aluminum extrusion brackets.
   Attaching brackets to frame with 5/16 - 18 x ½" stainless steel butt head cap screws.
3. Extrusion shall be powder-coated texture black.

Sign Panels:

1. The entire surface of the sign shall be evenly illuminated. The sign's led's shall be rated to operate at no less than 70% of their initial brightness for 100,000 hours with supplied photo cell..
   The entire surface of the sign must be evenly illuminated with a minimum average brightness reading of 500 lumens per square foot

2. The sign panels shall be translucent and made of high impact, UV resistant, plastic material able to withstand five (5) years of 500nm UV light.

Hardware:

1. The signs can be mounted to a rigid mast and /or span wire.
2. All fasteners and screws in or on the fixture shall be stainless steel Type 302 or 305.

L.E.D. SYSTEM

Optical System:
The L.E.D. assembly shall have linear collimating optic with and emitting angle of 6 x 48 degrees.
The optic shall be manufactured of optically clear acrylic.

L.E.D. Assembly:
The L.E.D. assembly shall consist of one (1) or multiple MCPCB (Metal Clad Printed Circuit Boards), that are designed specifically for high brightness L.E.D.s. The MCPCBs shall have a white solder mask and an aluminum substrate. The L.E.D. assembly shall be designed such that multiple MCPCBs shall be plugged together to reduce wiring and connections within the L.E.D. housing and designed so that one LED failure not affect signs LUX output more than 10% over affected area. The L.E.D. assembly that is located at the end of the L.E.D. housing shall have 6" wire leads with water resistant fasten connectors for ease of installation and replacement. Minimum of six (6) L.E.D. per linear foot. L.E.D's. can be installed in top extrusion and bottom. L.E.D.s are Cree with a minimum viewing angle of 115 degrees mounted on rugged boards consuming a minimum of 7 watts per linear foot and an output of over 500 lumens per foot.

Termination Housing:
The termination housing shall provide waterproof sealing in the form of a gasket and cover. Wires shall enter the Driver via 1 Nylon Strain Relief. The termination housing shall accommodate a built-in photocell the protrudes through the cover of the termination housing. All termination must be done outside the sign in the termination housing.

Electrical:
The Driver shall include the following; AC to DC power supply. The power supple shall have a universal input voltage of 120-277 and an input frequency range of 50 to 60 Hz. The power supply must be rated for damp location, output shall be 100 VDC. The power supply shall be UL recognized and shall have TUV and CE certifications.

WARRANTY, MAINTENANCE AND SUPPORT
All manufacturers guarantees and warranties which are normally provided as customary trade practice for items and materials incorporated into the work. All materials have a warranty, including L.E.D.s and Drivers for five (5) years.