



# Specifications For Manufactured Materials

Section: FLASHING LIGHT

Subject: SIGNAL HEAD SPECIFICATION

## 1. GENERAL

Each traffic signal head shall consist of a number of completely identical signal sections rigidly fastened together to present a continuous, pleasing appearance. Each section shall have a separate and complete housing. The traffic signal shall meet or exceed the Equipment Standard of the Institute of Transportation Engineers.

## 2. HOUSING

The housing of each section shall be a one-piece corrosion resistant aluminum alloy diecasting. Two integrally cast hinge lugs and two integrally cast latch screw slots shall be on each side of the housing. Through a symmetrical concept each housing shall be capable of providing either right or left-hand door opening. Left hinged is standard; right hinged special and must be specified. The top and bottom of the housing shall have an opening to accommodate standard 1½" pipe brackets. Each signal section shall be rigidly attached, one above the other, by means of corrosion resistant bolts and attaching washers in such a manner that any section may be rotated about a vertical axis and oriented with respect to an adjacent section.

The top and bottom opening of the signal housing shall have a Shurlock boss integrally cast into the housing. The radial angular grooves of the Shurlock boss when used with Shurlock fittings, shall provide positive 5° increment positioning of the entire signal head to eliminate rotation or misalignment of the signal. Each housing shall have cast bosses for two terminal blocks, four or five position, as specified. Each position shall be identified with both number and function cast on housing. The back of each housing shall have the manufacturer's name clearly displayed. Each housing shall have provisions for easily adding a backplate. Hinge pins and door latching hardware shall be type 304 stainless steel. Visor and back plate screws shall be high quality stainless steel.

## 3. HOUSING DOOR

The housing door of each section shall be a one-piece, corrosion resistant, aluminum alloy die casting. Two hinge lugs shall be cast on one side of each door, and two latch points shall be cast on the other side of each door. The door shall be attached to the housing by means of two hinge pins. Door shall be easily removable without the use of tools. Two latch screws and wing nuts on one side of the door shall provide for opening and closing the signal door without the use of any special tools. A gasket groove on the inside of the door shall accommodate a weatherproof and mildew resilient, EPDM gasket which, when the door is closed, shall seal against a raised bead on the housing, making a positive seal. The outer face of the door shall have four holes equally spaced about the circumference of the lens opening, with four screws to accommodate the signal head visors.

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The door shall have at least two index points to enable easy positive orientation of the lens. The door and visor shall overlap 1/2" to prevent light escaping between visor and door (visor collar).

#### 4. OPTICAL SYSTEM

Lens - The prisms traffic signal lens shall be standard red, yellow or green and shall conform to ITE standard specifications. The lens shall fit into a specially designed, slotted, extruded and bonded full-circle silicone lens gasket designed to fit the housing door in such a manner so as to exclude moisture, dust and road film. The lens and gasket shall be secured to the door with four aluminum lens clips and stainless steel screws. The lenses shall be polycarbonate or glass as specified.

Reflector - The unitized parabolic reflector assembly of specular alzak aluminum is positioned with the lightsource for proper registration with the lens. The assembly is positively held in the housing with the door open and is pivoted in the signal housing on two stainless steel pins in such a manner that it can be easily swung open for servicing the unit. The entire assembly is easily removed for maintenance or service without the use of any tools.

Lamp Receptacle - The pre-focused, moulded phenolic lamp receptacle is equipped with a lamp grip to prevent the lamp working loose due to the vibration. The receptacle may be rotated to allow proper orientation of lamp filament for optimum utilization of light output.

#### 5. WIRING

Each receptacle shall be provided with two leads with "fast-on" type terminals. Wires shall be colour coded per customer specifications.

Lamp receptacle conductors shall be No. 18 AWG, or larger, 600 V, appliance wiring material, which conforms to Military Specification: MIL W-16878 D, Type B, with vinyl nylon jacket rated 151°C.

#### 6. TERMINAL BLOCK

Each complete signal face shall be provided with a terminal block. Terminal blocks shall be placed in the bottom section unless otherwise specified. The terminal block for a standard three-section head shall be a five-position, ten-terminal, barrier-type strip. To one side of each "fast-on" terminal strip shall be attached the AC common, red, yellow and green signal section leads, leaving the opposite screw-clamp terminal for field wires.

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## 7. GASKETING

Door Gasket - An EPDM door gasket shall provide positive seal between the door and signal housing.

Lens Gasket - A special slotted, extruded silicone lens gasket shall provide positive seals between the lens and signal door and between the lens and reflector.

Lamp Holder Gasket - A resilient silicone gasket shall provide a cushion and positive seal between the reflector and lamp holder

## 8. VISORS

Visors shall be tunnel, full-circle or cap and a minimum of 7" long for 8" signals and 9½" long for 12" signals. They shall be twist-on attaching to facilitate installation. Tunnel visors shall have an open slot at the bottom of 4" for the 8" signal and 6" for the 12" signal. Visors of special length or design shall be furnished when specified.

## 9. PAINTING

All interior and exterior parts of the housing, door, backplate and visor shall be cleaned and etched with an iron phosphate and zinc solution, followed by a chemical sealer coating. A primer coat is applied to visors and backplates. The housing, door, visor and backplate are then finished with a single coat of best quality synthetic resin enamel of the colour specified, except the inside of the visor shall be painted flat black and one side of the backplate shall be painted flat black. The signal head colour shall be specified by the customer.

Standard colours are:

Yellow - Shall match Federal Standard 595a-13538

Stainless steel latching devices shall not be painted.

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## APPROVAL SHEET

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Prepared and Recommended by: Randy Schmidt 93-02-08  
Materials Standards Eng. Date

Approval Recommended by: R.A. Widger 93-08-24  
Senior Materials Engineer Date

Approval Recommended by: A.R. Gerbrandt 93-09-02  
r., Tech. Standards & Pol.Br. Date

Approved by: D.G. Metz 93-09-03  
Assistant Deputy Minister, Infrastructure Date

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