OS-2 (10-08)

pennsylvania
DEPARTMENT OF TRANSPORTATION
www.dot.state.pa.us

September 26, 2012

Ms. Isabel Martin, President
Traffic Safety Corp.
2708 47th Avenue
Sacramento, CA 95822

RE: Experimental Certificate of Approval for Traffic Safety Corp. Model TS600YYL4 In-Roadway Warning Lights

Dear Ms. Martin:

Our office has reviewed your signed and notarized "Acknowledgment of Conditions for Approval" form for Model TS600YYL4 In-Roadway Warning Lights. At this time, we are issuing the enclosed Experimental Certificate of Approval TSC-003E for this product. This approval allows the sale of equipment under the conditions listed below and in accordance with the provisions of the enclosed certificate and acknowledgement of conditions.

While the product is under experimental approval status, each installation must be preapproved by PennDOT's Bureau of Maintenance and Operations. In addition, PennDOT will limit the number of installations for the purpose of testing and evaluation. Consideration will be given to removing the experimental approval status of this equipment after it has operated to the satisfaction of PennDOT for a three year period, or other evaluation period determined by PennDOT.

If you have any questions concerning this matter, please contact Mr. Matthew DePaoli of my staff at 717-787-9787 or madepaoli@pa.gov.

Sincerely,

Daniel Farley

FOR Douglas M. Tomlinson, P.E., Chief
Traffic Operations Section
Bureau of Maintenance and Operations

Enclosure

Commonwealth of Pennsylvania
Department of Transportation

Approval Number: **TSC-003E**
Date Issued: **September 26, 2012**

Experimental Certificate of Approval for the Sale of Traffic Signals or Other Power-Operated Traffic Regulatory Devices

To: **Traffic Safety Corp.**
2708 47th Ave
Sacramento, CA 95822

Under authority of the Vehicle Code, the Secretary of Transportation hereby approves the sale of the following described traffic signals or other power-operated traffic regulatory devices in the Commonwealth of Pennsylvania.

Description: In-Roadway Warning Lights

Model Number: TS600YYL4

This "Experimental Certificate of Approval" is issued for the sale of the above equipment to permit the use of the equipment if each installation is preapproved by PennDOT's Bureau of Maintenance and Operations. Consideration will be given to removing the experimental approval status of this equipment after it has operated to the satisfaction of PennDOT for a three-year period, or other evaluation period determined by PennDOT. In addition, the purchaser must be advised that written consent is required by the Chief, Transportation Operations Section, Department of Transportation for each installation of such equipment.

This "Experimental Certificate of Approval" is issued in accordance with the conditions identified in the "Acknowledgment of Conditions for Approval for Traffic Safety Corp. Model TS600YYL4 In-Roadway Warning Lights."

Failure to comply with the above will result in the cancellation of this approval.

Approved: Barry J. Schoch, P.E.
Secretary of Transportation

By: Daniel Farley
FOR Douglas M. Tomlinson, P.E., Chief
Traffic Operations Section
Bureau of Maintenance and Operations

Traffic Safety Corporation
2708 47th Ave.
Sacramento, CA 95822-3806
Toll Free: 888.446.9255
Tel: 916.394.9884
Fax: 916.394.2809
Email: sales@xwalk.com
Web: www.xwalk.com

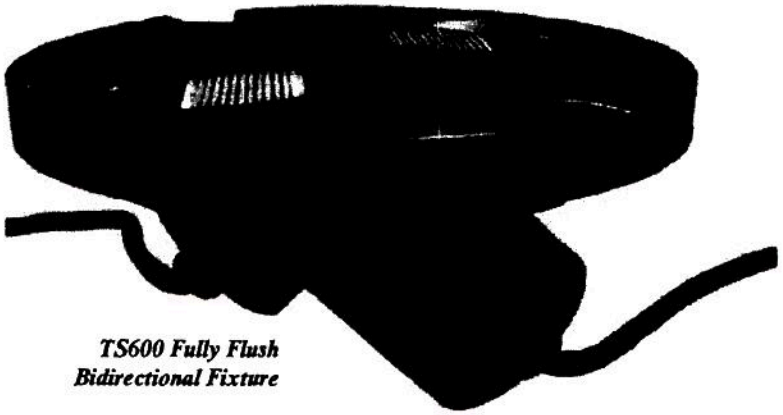
TS600
Fully-Flush, Self-Cleaning, Bi-Directional Fixture In-Roadway Warning Lighting Systems

General Description

The TS600 fixture is designed for In-Roadway Warning Lighting Systems installed in snowplow areas. Their enhanced self-cleaning feature makes them ideal for installations with inclines. And the use of High-bright LED technology makes them the perfect choice for solar powered applications where power consumption must be minimized. The Bi-Directional design allows backlighting of pedestrians in the crosswalk, further improving the pedestrian safety. The TS600 comes standard as a bi-directional fixture, but may be customized to a uni-directional fixture (TS601).

The TS600 is typically used in crosswalk applications, but is often used in school zone or rail-road crossing, lane control for bridges and tunnels, wrong way warning, and toll booth or toll way lead-on applications.

All In-Roadway Warning Lighting System components are available from TSC. A typical installation would include a set of fixtures, a control system, one or more activation devices such as a pedestrian push button station or pedestrian detection pad, and flashing LED crossing signs.



TS600 Fully Flush Bidirectional Fixture

Why Our TS600 Is Better

Outstanding Durability

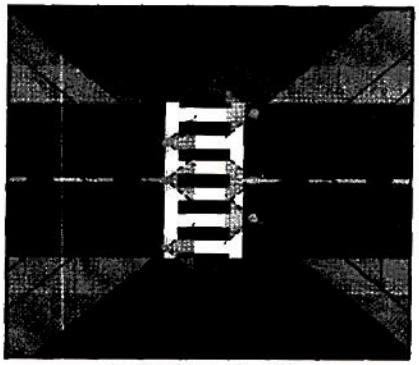
- Corrosion resistant anodized aluminum body provides resistance to traffic wear and weathering.
- Fully flush profile avoids damage that may be caused by snowplows.
- High static load rating (44,000 lb.) reduces likelihood of damage from heavy vehicles.

Superior Visibility and Energy Efficiency

- Bi-directional design improves visibility of pedestrians in crosswalk.
- High-bright LEDs are 250 times brighter than the Caltrans minimum standard making them clearly visible in daytime and under the worst weather conditions.
- High-bright LEDs consume only 3.5 watts per cartridge (7 watts per fixture) making them ideal for energy efficient solar power applications.

Low Maintenance

- Re-usable design reduces the cost, effort and time during resurfacing of the road.
- Self-cleaning lens design reduces build-up of dirt and need for frequent cleaning.
- Pre-focused optics eliminates the requirement of field adjustments.
- Long life LEDs (Average rated life of 10 years) reduces frequency of replacement.
- Factory sealed optical cartridge design reduces field maintenance issues.



Application: Two Way, One Lane Each Way

Ordering Codes

Fixture	LED Color	Lamp	Mounting
FI-TS600 Bi-directional Fixture	____ / ____	**L:** 12V LED Array	**B:** Base
FI-TS601 Uni-directional Fixture	____	**L:** 12V LED Array	**B:** Base

Notes:
1. LED Color: Y = Yellow, R = Red, X = Blank (Specify both lens).
2. Standard fixture operating voltage is 12 VDC. Fixtures may also be operated from 24 VDC in certain applications.
3. TSC supports legacy fixtures with Halogen LA-Q50MR16FL or LED LA-MR16-18LED-12Y lamps (Special Order).
4. Base Cans (BA-725-10-2), Base Can Extensions (BA-725-EX-XX), Spacers (BA-725-SP-XX) and Gaskets (BA-725-GSK) are available for the TS600 Fixture.
5. Power consumption is 3.5 watts per cartridge.
6. Bi-directional fixture requires two Female Connectors (CO-1051903021) for hook-up, uni-directional fixture requires only one Female Connector.
7. Fixture repair package available (LA-YL4-D-KIT), includes LED Array, LED Driver, and O-Rings for both light chambers, plus factory installation, testing and burn-in.

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How to Specify the TS600 Fully-Flush, Self-Cleaning, Bi-Directional Fixture

The fixture shall be model FI-TS600 as marketed by Traffic Safety Corporation or approved equal. In order to be considered equal, the alternate fixture shall satisfy the following requirements.

Construction - The fixture shall be bi-directional and of modular design comprised of a top casting and two (2) pre-focused optical cartridges made of high tensile strength aluminum alloy. The fixture shall be 0.00" above grade when mounted in the factory supplied mounting base. The diameter of the fixture shall not exceed 8" and all mounting hardware shall be stainless steel.

Durability - The fixture shall withstand a static load of 44,000 lb. without sustaining permanent deformation or cracking of materials. Leads, gaskets, etc. shall be rated to withstand 300 degrees F.

LED/Light Cartridge – Each lens shall be molded of high performance optical grade glass and formed in a removable factory sealed optical cartridge. Two cartridges required per fixture. Each cartridge consumes 3.5 watts per cartridge (7 watts per fixture) during the activation period of the fixture.

Photometric Performance – The fixture shall have both daytime and nighttime visibility exceeding that of a 50-watt halogen lamp, using a yellow light.

Finish – The fixture shall be anodized natural aluminum and be dark grey in color.

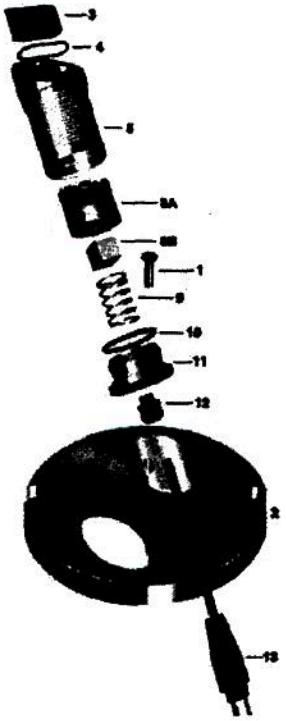
Mounting Base – Fixtures shall be installed in a mounting base *(TSC's # BA-725-10-2)* of high strength steel, hot dip galvanized after fabrication per ASTM-153 specifications, with a 7.25" diameter bolt circle, a 0.75" mud ring, and standard base depth of 10". The base shall be supplied with stainless steel bolts and a plywood cover to protect the mounting flange during installation. The height of the base shall be adjustable using spacers or extensions to facilitate roadway resurfacing.

Warranty - The fixture shall be warranted against defects in workmanship and materials for one year from date of shipment and is eligible for TSC's 5-Year Limited System Warranty.

Replacement Parts

Part	P/N	Amt.	Name
1	AL-852MB	2	MBX20 DIN 963 SS screw
2	AL-852CXFL2	1	8" flange straight
3	N/A†	2	Laminated lens
4	N/A†	2	O-ring R3162
5††	Y=AL-852CLHY	2	Lamp holder
	X=AL-852CLHX†††	2	Lamp holder
8A	LA-MR16-18LED-12Y	2	LED (12V)
8B	LED Driver	2	27-TLM4036DC-350
9	AL-852SS	2	Cylinder spring
10	AL-8520147	2	O-ring R147
11	AL-852EC	2	End closure
12	AL-852CG	2	Cable gland
13	FI-AL-852FC	2	Fixture lead, male
Legacy Halogen Parts (not shown)			
LA-Q50MR16FL		2	Lamp (120V)
Y=AL-852CFY		2	Color filter
AL-852-FS		2	Fixing spring

† Component of Part 5, not sold separately.
†† Includes items 3-12.
††† No lamp or filter.
†††† Component breakout is for legacy fixtures which are field replaceable. The current TS600 Fixture uses the L4 LED array which is factory replaceable.



Commonwealth of Pennsylvania
Department of Transportation

Acknowledgment of Conditions for Approval for the Traffic Safety Corp. Model TS600YYL4 In-Roadway Warning Lights

On behalf of Traffic Safety Corp. of Sacramento, California, I hereby acknowledge that the company has read this "Acknowledgment of Conditions for Approval." I further acknowledge that the company understands and agrees to fully comply and be bound by all of the following provisions if the Pennsylvania Department of Transportation should issue an "Experimental Certificate of Approval" for Model TS600YYL4 In-Roadway Warning Lights.

1. Model TS600YYL4 In-Roadway Warning Lights shall be in accordance with the February 26, 2001, Department of Transportation, "Specification for In-Roadway Warning Lights" and February 22, 2005, Department of Transportation, "Municipal Requirements for In-Roadway Warning Lights" (copy attached).

2. While under experimental approval status, each installation must have the prior approval of the local municipality, the Pennsylvania Department of Transportation's local Engineering District Office, and the Pennsylvania Department of Transportation's Traffic Operations Section. Model TS600YYL4 In-Roadway Warning Lights must have an "Experimental Certificate of Approval" issued to the manufacturer by the Pennsylvania Department of Transportation before installation, and also before the project's bid opening date in accordance with Section 1104.01 of Pennsylvania Department of Transportation Publication 408 (copy attached). The special provisions for the subject project must also be written in such a manner as to permit the use of the Model TS600YYL4 In-Roadway Warning Lights.

3. The manufacturer agrees that, in the event that the Model TS600YYL4 In-Roadway Warning Lights do not function or operate to the satisfaction of the local municipality or the Pennsylvania Department of Transportation while under experimental approval status, the manufacturer will replace the In-Roadway Warning Lights with approved equipment at no additional expense to the local municipality or the Pennsylvania Department of Transportation. The replacement equipment shall be proven In-Roadway Warning Lights that have prior approval of the Pennsylvania Department of Transportation and the local municipality, and may be from another manufacturer.

Commonwealth of Pennsylvania
Department of Transportation

Acknowledgment of Conditions for Approval for the Traffic Safety Corp. Model TS600YYL4 In-Roadway Warning Lights

4. The manufacturer agrees to inform the Pennsylvania Department of Transportation of any revisions that alter the operation or performance of this equipment.

5. It is understood that, while the Models TS600YYL4 In-Roadway Warning Lights are under experimental approval status, each installation in Pennsylvania may be subjected to any and all tests that the Pennsylvania Department of Transportation or the local municipality deems necessary to adequately determine the performance of the product.

6. Failure to comply with these conditions may result in the cancellation of the "Experimental Certificate of Approval" for Model TS600YYL4 In-Roadway Warning Lights and may eliminate the possibility of any Traffic Safety Corp. product approvals in the future.

Signature: _____ Title: PRESIDENT

Sworn before me this 10 day of SEPTEMBER, 2012

Notary: _____

Attachments: February 26, 2001, Commonwealth of Pennsylvania, Department of Transportation, "Specification for In-Roadway Warning Lights"

February 22, 2005, Commonwealth of Pennsylvania, Department of Transportation, "Municipal Requirements for In-Roadway Warning Lights"

Section 1104.01 of Pennsylvania Department of Transportation Publication 408

MELVIN MARIO
COMM. # 1856898
NOTARY PUBLIC - CALIFORNIA
SACRAMENTO COUNTY
COMM. EXPIRES JULY 6, 2013