Standard Specification for
Bicycle Signal Head c/w Bicycle LED Modules

TTS 808.230.01 SCOPE

This specification covers the requirements for polycarbonate bicycle signal head c/w bicycle LED modules and associated components and accessories.

TTS 808.230.02 REFERENCES

This specification refers to the following standards, specifications, or publications:

City of Toronto Construction Specifications and Drawings for Traffic Control Devices:

TTS 808.240 Bicycle Signal LED Modules Material
TS 808 Traffic Signal Equipment

Institute of Transportation Engineers

No. ST-017A Equipment and Materials Standards of the Institute of Transportation Engineers

TTS 808.230.03 DEFINITIONS

The definitions included in ITE Publication No. ST-017A shall apply to this specification.

TTS 808.230.04 DESIGN AND SUBMISSION REQUIREMENTS

For the purposes of design, the signal heads shall be assumed to be supported as shown in Table 1 below. The vendor shall submit specification sheets for the bicycle signal heads to the City for review. At the request of the City, the vendor may be required to submit samples for review.

Table 1: Bicycle head size and type

Head size and type	Applicable mounting arrangement	
	Rubber cushion head Hanger	Two point mounting
200mm/200mm/200mm Black Head	**X**	**X**
300mm/300mm/300mm Black Head	**X**	**X**

TTS 808.230.05 MATERIALS

TTS 808.230.05.01 General

Signal heads, components and accessories shall be according to ITE No. ST-017A. All signal heads shall be supplied without lamps.

All signal heads shall be designed to withstand maximum wind loading according to ITE No. ST-017A.

TTS 808.230.05.02 Signal Head Housing

The signal head housing shall be one-piece moulded polycarbonate body and left hinged door assembly. The signal head housing shall be one piece of material with sides, top and bottom integrally cast or moulded with ribbing to ensure sufficient strength. The signal head housing shall be constructed with two integrally moulded hinges for door attachment on the left side. The housing shall be constructed with internally moulded latch screw slot for stainless steel captive bolts with wing nuts on the right side or other approved locking mechanism.

The door assembly shall have separate sets of stainless steel screws for LED module and visor attachment. The individual signal housings shall be self-aligning when installed together. The top and bottom of the housing shall have an opening to accommodate standard 38 mm I.D. pipe brackets. The signal head shall be moulded, ultraviolet and heat stabilized, flame retardant resin, and black in colour.

The design of housing should allow upside down installation to allow the signal head door to swing from left to right.

Individual signal housings shall be securely attached together to prevent separation.

TTS 808.230.05.03 Visors

Each lens housing shall be provided with a removable polycarbonate visor of the cowl (cap). The visor shall be moulded polycarbonate with minimum thickness of 2 mm. Each visor shall be securely attached to the door by stainless steel screws. Snap fit visors are not acceptable.

Inside colour of visor is to be flat black, outside shall also be flat black.

TTS 808.230.05.04 Reinforcing Plate

Stainless steel reinforcing plate(s) shall be provided according to the manufacturer's recommendation depending on the mounting arrangement specified for the head.

TTS 808.230.05.05 Bird Plug

Depending on the mounting arrangement specified for the head, removable sealing device(s) (bird plugs) shall be provided as required. Bird plugs may be flush mounting, two piece round disc type design complete with bolt, nut and locking washer. Alternatively bird plugs may be one piece round type complete with self tapping screw. Friction fit bird plugs are not acceptable. Round rubber bird plug washers are to be provided as required.

TTS 808.230.05.06 Hardware

All hinges, latching mechanisms, screws, retainer clips and washers shall be stainless steel. Screws used for visor attachment, backboard attachment, LED module retainer clips and bird plugs shall have Robertson type screw heads.

TTS 808.230.05.07 Assembly

All components shall be factory assembled using mechanical devices according to the strength requirements of ITE No. ST-017A.

TTS 808.230.05.08 Marking

Each signal head shall have identification marking showing the manufacturer's name and trade mark, and the date of manufacture.

TTS 808.230.05.09 LED Modules

The bicycle signal head shall be supplied with 3 LED modules in colours red, amber and green according to TTS 808.240.

TTS 808.230.06 EQUIPMENT – NOT USED

TTS 808.230.07 CONSTRUCTION

Contractor shall install the bicycle signal head according to TS 808.

TTS 808.230.08 QUALITY ASSURANCE – NOT USED

TTS 808.230.09 MEASUREMENT FOR PAYMENT

TTS 808.230.09.01 Signal Head for Bicycle

For measurement purposes, a count shall be made of number of signal head for bicycle units installed. Unit is defined as each intersection where the complete detection system either one or two approaches is installed.

TTS 808.230.10 BASIS OF PAYMENT

TTS 808.230.10.01 Signal Head for Bicycle – Item

Payment at the Contract Price shall be full compensation for all labour, Equipment, and Material to do the work.