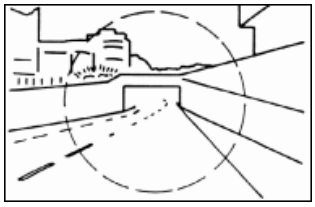
Photometric Solutions International®

THE NEW GENERATION IN PHOTOMETRIC TECHNOLOGY

TEP-2.0 Tunnel Entrance Photometer

Theory of Operation



The TEP-2.0 tunnel entrance luminance photometer is designed to view the L20 conical field at the tunnel entry. The photometer is positioned to view the tunnel portal from the carriage way edge at the stopping sight distance and provides a milliampere signal output proportional to the average luminance in the field of view. The output signal can be processed by the tunnel control system or a standalone controller to switch or dim the tunnel lighting system in response to changes in daylight values.

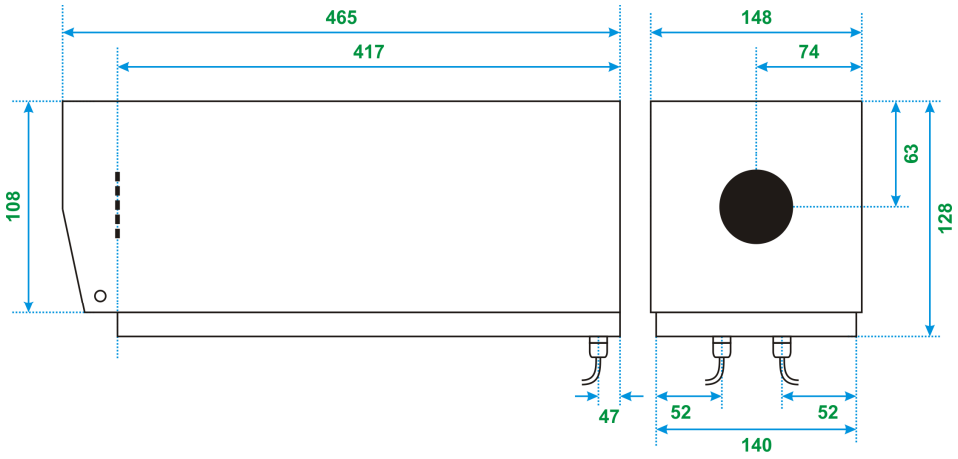
Features and Specifications

- Application for tunnels and underpasses.
- Silicon photodiode detector matched to CIE V (λ) spectral response.
- Stainless steel IP65 housing with pan/tilt adjustment finished in powder coated enamel.
- 4 to 20 mA DC output signal. Available as single range or dual range (the dual range offers a wider dynamic range, the low range is used at low luminance levels and the high range is used at high luminance levels):
  Single output: Single range from 0 to XXXX cd/m^2
  Dual output: High range: 0 to XXXX cd/m^2
  Low range: 0 to YYY cd/m^2
  where XXXX is the maximum value of the Single range or High range (can be set from 1,000 to 10,000 cd/m^2) and YYY is the maximum value of the Low range (can be set from 200 to 500 cd/m^2).
- Viewing field factory standard model pre-set at 20 degrees. Optional fields of 14° to 35°, specify on order.
- Mains supply input factory pre-set to 220/240V 50/60 Hz. Optionally 110/120, specify on order.
- Power consumption 20 W typical, 50 W maximum.
- Separate IP65 plug and socket connections provided and fitted on housing for mains input cable and signal output cable. Plug tops provided for cable connections. Access is not required to interior of housing during installation.
- Photometers and housings are made in Australia. A NATA-accredited photometric calibration certificate is provided with each unit.
- An internal heater is provided as standard to keep the detector and conditioning circuitry at a constant temperature.
- An internal heater is also provided to demist the viewing window.
- Exterior temperature range: -20°C to +50°C.
- External resistance range: 10 Ohm to 450 Ohm.
- Weight: 5.0 kg.

Notes

1. Dual range photometers provide improved signal discrimination at low signal output to refine the lower switching setting values at dusk and dawn and on overcast days. If the luminance is greater than the low range maximum setting then the low range will be clipped at 20 mA and the high range should be used.
2. It is recommended for installation areas where lightning activity occurs that surge protection is provided in the base of the pole on both mains and signal terminals.
3. A sighting device is available for aiming photometer at the viewing point.
4. Recommended power supply cable: Two core and earth 2.5 mm sheathed circular flexible cable for exterior application. Max 11 mm O/D.
5. Recommended signal cable: One twisted pair for single range, or two twisted pairs for dual range photometer. Instrument cable, 7/0.3mm, polyester taped, braided and sheathed for exterior application. Max 11 mm O/D.

Dimensions and Connections



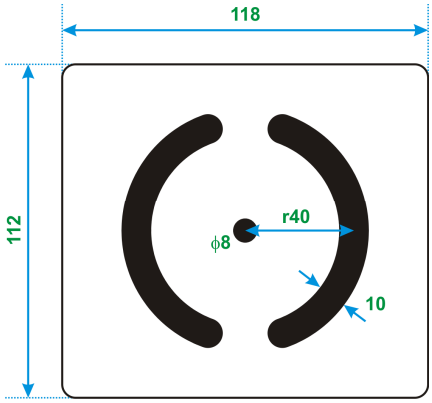
3-pin plug for mains supply input, 7-pin plug for signal output. Cable-mount connectors are provided for both.

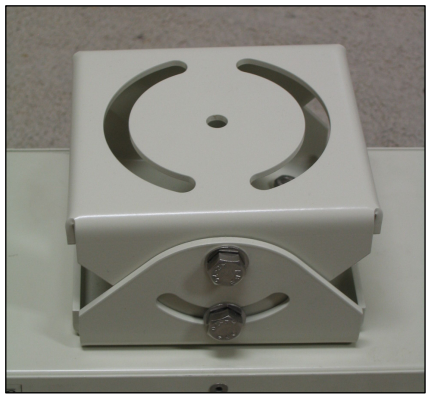
Pan and Tilt Mounting Bracket

All units are supplied with a pan and tilt mounting bracket that is fixed to the underside of the photometer.

Fixing is made through a central hole of 8 mm diameter and a circular track of 10 mm width and 40 mm radius. This allows adjustment of up to ± 60° in horizontal angle. On the sides is a mechanism for adjustment of up to ± 40° in tilt angle.

An optional wall mounting bracket is available on request.





Catalogue Number and Ordering Information

For the Single Range Photometer: Code = TEP1-FF-HHHH
For the Dual Range Photometer: Code = TEP2-FF-LLL-HHHH

FF = Field-of-view. Default is standard CIE88 field of view at 20 degrees. Optional fields from 14 to 35 degrees can be factory pre-set to order.

LLL = Luminance corresponding to 20 mA output (full scale) for the low range on the dual range photometer. Default is 500 cd/m^2, optional from 200 to 500 cd/m^2.

HHHH = Luminance corresponding to 20 mA output (full scale) for the only range on the single range photometer and the high range on the dual range photometer. Default is 3,500 cd/m^2, optional from 1,000 to 10,000 cd/m^2.

The field-of-view and luminance settings are factory set at time of order. Calibration will be provided with these settings and is not field-adjustable.

Proudly designed and made in Australia

For more information on our TEP-2.0 Tunnel Entrance Photometer Systems, please contact one of our representatives or sales/applications engineers.

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