



PAR56-type LED headlight for trains.

# Efficiency. Reliability. Clarity.

## High-efficiency LEDs leading the way

Teknoware Beam is a reliable and efficient PAR56-type LED headlight for modern locomotives, providing a clear view of the track ahead regardless of the surrounding weather conditions. It has 13 power LEDs to ensure sufficient light to detect objects from 800 feet away.

The traditional headlamp using halogen bulbs can be replaced with Beam. Thanks to its design, it can be fitted to the same space as the existing halogen headlamp. Beam also comes with an option for pigtail wiring. Beam's durable casing is made of cast aluminum and its LED technology guarantees a lifetime of over 60 000 power-on hours.



Light off



60 000 candela



200 000 candela

### Clear view forward

13 high power LEDs combined with a reflective metalized surface.

### Tempered clear glass

Protective front with an optional defrost function.

### Heatsink shaped

Matching existing halogen headlamps.

### Easy installation

Direct replacement of existing halogen headlamps.

### Optional pig tail

For installation with wire.

### Weatherproof

Rated IP66 from the front and IP65 from the back according to IEC 60529.

### Fire protection

Meets the requirements of NFPA 130

### Shockproof

Rated Cat. 1 Class B according to IEC 61373.

## FACTS IN BRIEF



EASY  
INSTALLATION



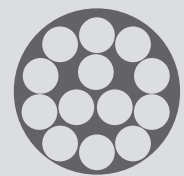
SHOCKPROOF



EXTENDED  
LIFE CYCLE



WATERPROOF  
AND DUSTPROOF



CAST  
ALUMINUM

## Specifications

Light source 13 x power LEDs 5700 K | Light output according to the requirements of US Code of Federal Regulations 49 CFR § 229.125

Full beam headlight mode	Optical axis	> 200 000 cd
	7.5 degrees from centerline	> 3 000 cd
	20 degrees from centerline	> 400 cd
Dimmed beam headlight mode	Optical axis	> 60 000 cd

## Product characteristics

		Input voltage	Voltage, min-max*	Features	Power consumption, max. (±10%)
Product ID	TL-TVN95011 (1001-1232)	75 or 110 VDC	50–150 VDC		30 W
	TL-TVN95111 (1001-1233)	75 or 110 VDC	50–150 VDC	Heated glass	50 W
	TL-TVN95012 (1001-1234)	24 or 37.5 VDC	16.8–50 VDC		30 W
	TL-TVN95112 (1001-1235)	24 or 37.5 VDC	16.8–50 VDC	Heated glass	50 W
Weight	4.6 lbs				
Dimensions (H x L x D)	6.97" x 6.97" x 5"				
Connectors	M4 screw terminals				
Lumen maintenance	60 000 h / L70				

\* Range according to EN 50155

## Material

Casing	Cast aluminum, powder painted Color: Black, RAL 9005
Glass	Tempered glass

## Environmental conditions for electronics

Ambient temperature range	–40 °F...+158 °F
Degrees of protection	Front: IP66 Back: IP65 According to IEC 60529
Requirements for electronic equipment used	According to EN 50155
Fire protection level	NFPA 130
Shocks and vibrations	IEC 61373 Cat. 1 Class B

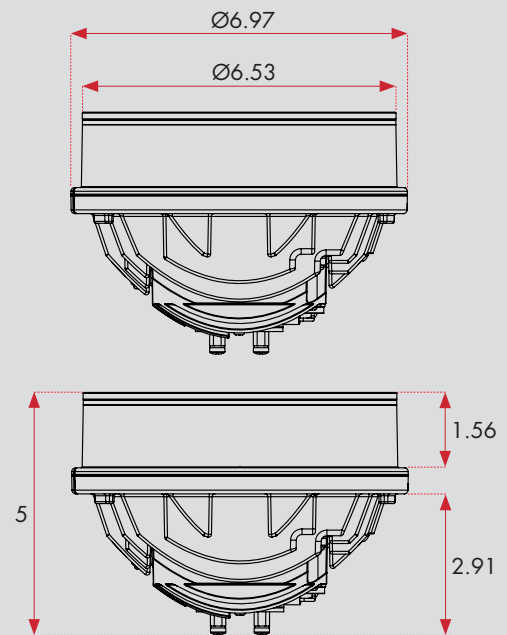
## EMC

Immunity and emissions	According to EN 50121-3-2
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## Product features

- Product is protected against reverse input voltage polarity.
- Inrush current limited (max.  $5 \times I_{nom}$  at max. load).
- Heated glass is activated at temperatures below  $\sim +41$  °F

## Dimensions (inch)



## LET THERE BE CONFIDENCE.

People tend to take the presence of light for granted. We take it seriously. Our passion for finding the best interior solution or lighting for our customers' needs is the foundation which unites our three businesses. The Bus & Coach and Rail Divisions aim to increase our customer vehicles' comfort, safety and functionality. The Emergency Lighting Division is innovating new means and measures to improve the safety and usability of buildings and cruise ships.

Teknoware is your local partner. We employ over 500 experts in 8 countries, and our sales network serves customers in over 50 countries. Our head office and largest production facilities are located in Finland, and our other world-class production units are located in the UK, Malaysia, Poland and the US.

Teknoware is part of the Teknopower Group.

**Teknoware – Designed in Finland.**

