



Marker light

Tail light



Headlight

Sharp. Compact. Supreme.

Vision at its sharpest.

Teknoware Vision Plus is a sharp, multifunctional, overall train headlight with a cut-off beam. It includes all the external light functions required on European railways. Vision Plus is optically the most efficient headlight for trains on the market, and its anti-glare system is fully compliant with EN 15153-1, table 3.

The modern and innovative design provides a more homogeneous, highly efficient and supremely reliable light source. Its robust, durable casing is designed to withstand shock, impact and vibration. The beam on Vision Plus has an intensity peak pointing directly towards the front to ensure that tracks are lit longer and approaching trains can be seen earlier.

In Vision Plus, all three functions (according to EN 15153-1) are included in the same package and depending on the driving direction, a different function can be used. Vision Plus is a compact light unit that assures clear visibility on the rails in every situation.



Table 3

Headlight with a cut-off beam.

Multifunctional

Headlight, marker light and tail light modes.

Reduced maintenance time

Lifetime expectation 100 000 h.

Boost function

Failure of a single LED can be compensated to still meet the requirements.

Weatherproof

Rated IP69,
according to IEC 60529.

Fire protection

Rated HL3,
according to EN 45545-2.

Shockproof

Rated IK08,
according to IEC 62262.

FACTS IN BRIEF



CUT-OFF
BEAM



MULTIFUNCTIONAL



SHOCK AND
VIBRATION PROOF



WATERPROOF
AND DUSTPROOF



CAST
ALUMINIUM



Specifications		
Light source	Headlight mode	5800 K LEDs
	Marker light mode	3000 K LEDs
	Tail light mode	RED LEDs
	Colours according to EN 15153-1	
Light output on optical axis, different angles according to EN 15153-1 requirements	Full beam headlight	65 000 cd
	Dimmed headlight	15 500 cd
	Full lower marker light	600 cd
	Dimmed lower marker light	270 cd
	Tail light	80 cd
Intensity value adjustments possible on request. Lit area for each function according to EN 15153-1.		

Mechanical characteristics	
Product ID	TVP71001 (1003-5052)
Weight [kg]	4.1
Dimensions (HxLxD) [mm]	211 x 211 x 150
Connectors	Deutsch DT04-12PA-CE09
Wire set length	30 cm (other possibilities on request)

Electrical characteristics		
Input voltage: nominal	110 VDC	
Voltage: min.–max.	Range according to EN 50155	
Lumen maintenance*	100 000 h (estimated)	
Power consumption** (110 VDC version) ±10%	Full beam headlight	20 W
	Dimmed headlight	5 W
	Full lower marker light	3.5 W
	Dimmed lower marker light	2.5 W
	Tail light	6 W

* Lifetime expectation may vary depending on ambient temperature.

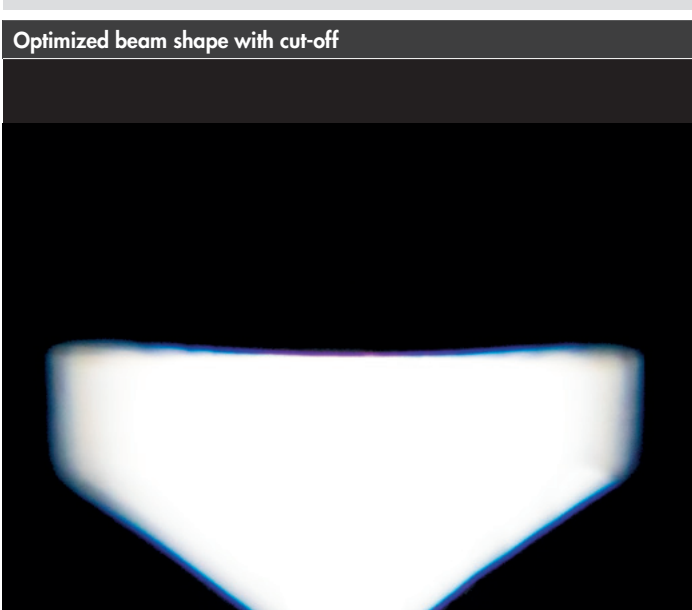
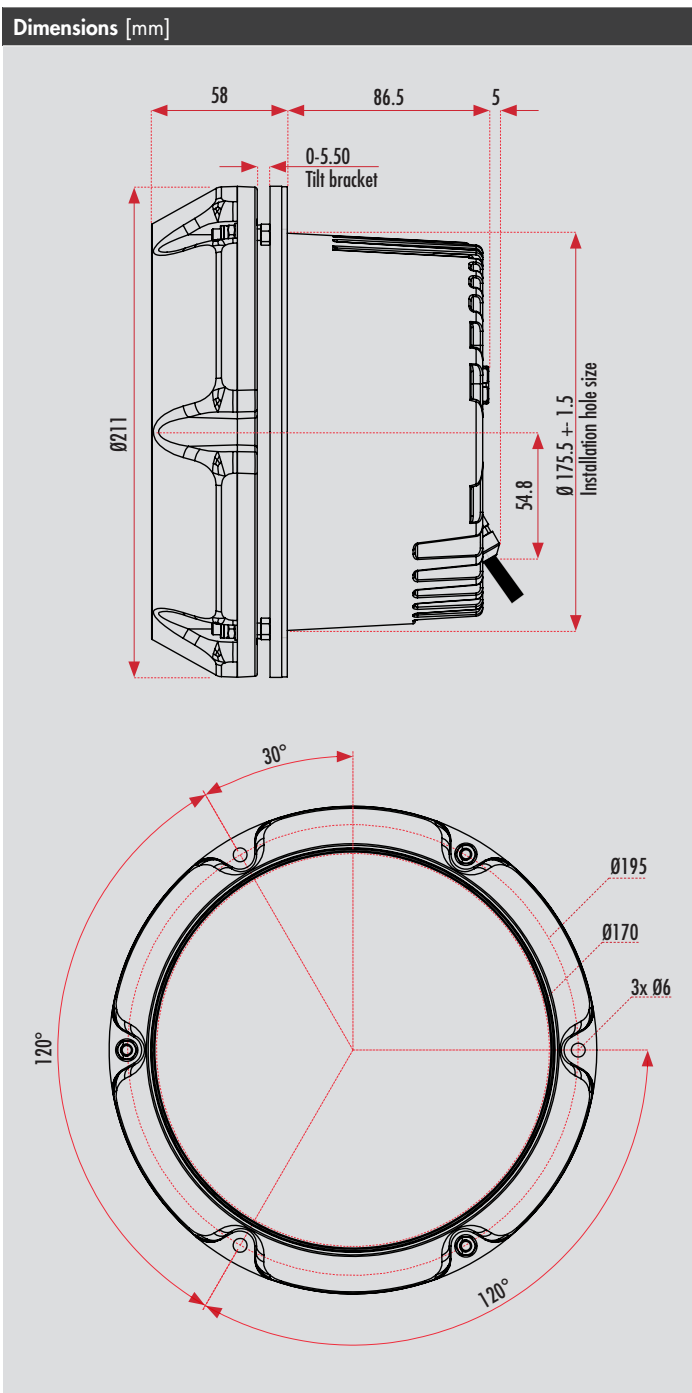
** Power consumption may vary due to installation adjustments for train type.

Material	
Casing	Cast aluminium, powder painted (RAL 9005)
Lens	Tempered glass

Environmental conditions	
Ambient temperature range	-40 °C...+70 °C
Degrees of protection	IP69 according to IEC 60529
Requirements for electronic equipment used	According to EN 50155
Fire protection level	HL3 according to EN 45545-2
Shocks and vibrations	IEC 61373 Cat. 1 Class B
Shock resistance	IK08 according to IEC 62262
Salt mist	According to EN 60068-2-11

EMC	
Immunity and emissions	According to EN 50121-3-2

- | Product features | |
|--|--|
| <ul style="list-style-type: none"> • Product is protected against reverse input voltage polarity. • Status feedback for all different functions. • Angle adjustment on 2 axis ±1.5°. • Headlight boost mode allows the failure of a single headlight LED to be compensated to still meet EN 15153-1 requirements. • Inrush current limited (max. $5 \times I_{nom}$ at max. load). | |



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.