



JOINT-STOCK COMPANY  
**PROTON-IMPULSE**

# LED

bulbs - LPO



2017

Made in Russia



**Stimulate technical progress in an active way by means of development and production of the top-of-the-line instruments and equipment of different applications .**

**Extract from Mission CJSC «Proton-Impulse».**





# Proton-Impulse

Proton-Impulse is a famous Russian company established in May, 1995, specialized in development and production of power electronics, LED indicator and lighting production. Compound JSC Proton holding. Enterprise quality management system is one of the first in Russia which was certified according to requirements of international standard ISO 9001:2008.

Two departments of R&D, three manufacturing departments work to develop and extend production range, realizing requirements of different clients.

The products of Proton-Impulse are distinguished for reliability and high stable quality, proven by multistage quality system at the enterprise.

The company owns the modern production base, making able to run a full production cycle from development, blank production up to assembly and tests.

Proton-Impulse manufactures

## 1. Lighting production:

- LED lamps – indicator lamps SKL, lighting semiconductor lamps LPO, alarm lamps, LED tube lamps (T8) and LED lamps with sockets E10, E14, E27, B9S, B15S, B15D.
- LED energy saving lamps (including illumination for refrigerating and trade equipment, household refrigerators, lift cabins, for Russian railway, housing and utilities infrastructure and for internal lighting).

Lighting production has obvious advantages and low energy consumption is only one of them. We realize continuous monitoring of the changing requirements of the regional companies and develop new series of lamps and lighting.

## 2. Power electronics:

- optoelectronic solid-state relays and specialized devices and relays;
- thyristor power control;
- USO modules (input and output) and power modules;
- energy saving (optical and acoustic) switches;
- automatic and control equipment devices (timers and blocks of the alarm system and control for refrigerating system management);
- automatic reserve "BUP";
- cargo weighing GVU device for continuous freight weight measurement in an elevator cabin.

Power effective process control systems are hard to develop without devices of modern power electronics. The semiconductor devices released by us are of high speed response, small power failure (in an open state), small current (the closed state), portability and small weight.

Our regular clients are among such large companies as: Moselectroshield, Electroshield Company Group, JSC Russian Railways, JSC Tver Carriage Works, PAO KAMAZ, PAO NLMK, Shcherbinsky and Karacharovskyelevator plants, PAO Severstal, PAO MMC Norilsk Nickel, PAO Transneft, PAO Tatneft, many other power electro plants and companies.

## SEMICONDUCTOR LIGHTING BULBS (LPO)

Semiconductor lighting bulbs (**LPO**) serve for installation in different lightings of industrial and special application as lighting source, including replacement incandescent and luminescent lamps.

Lamps are produced for wide range of operating voltage and with various socles. Design diversity of LPO affords clients to choose the device with the most suitable parameters for each application.

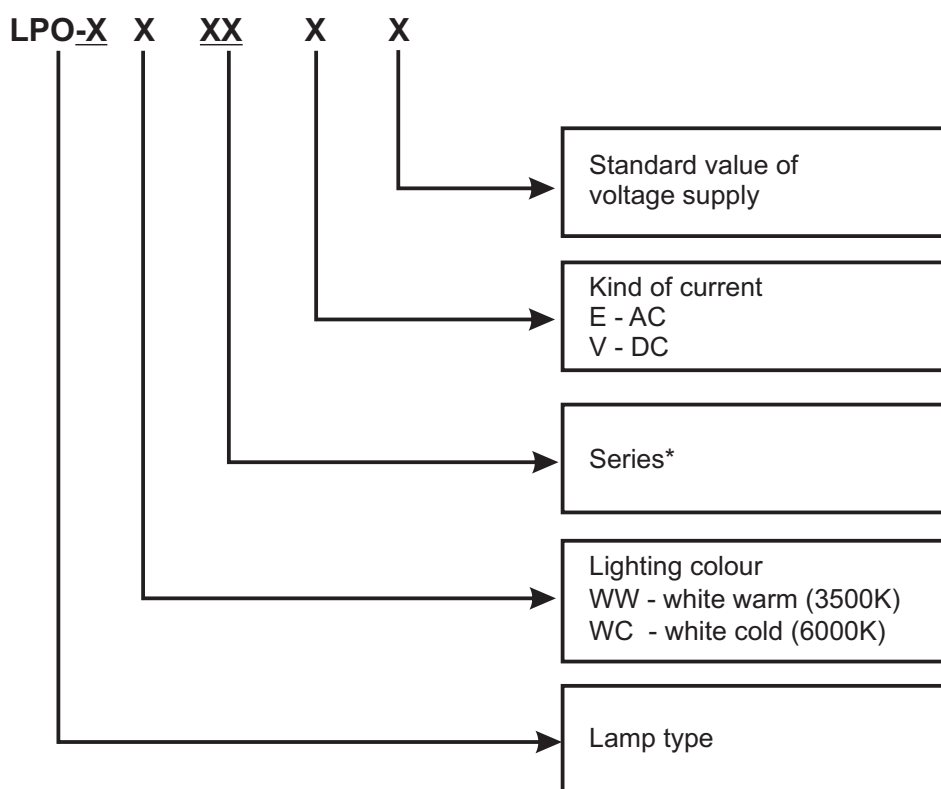
Ambient class for all the lamps is NF2.1 according to State Standard GOST 115150.

IP level of impurities and water penetration is IP20 according to State Standard GOST 14254.

Mechanical resistant— M25 according to State Standard GOST 17516.1.

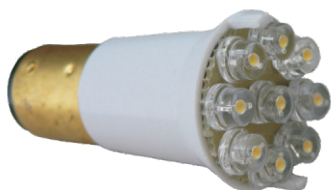
MTBF not less than 30 000 hours.

### LPO REFERENCE CODE SCHEME

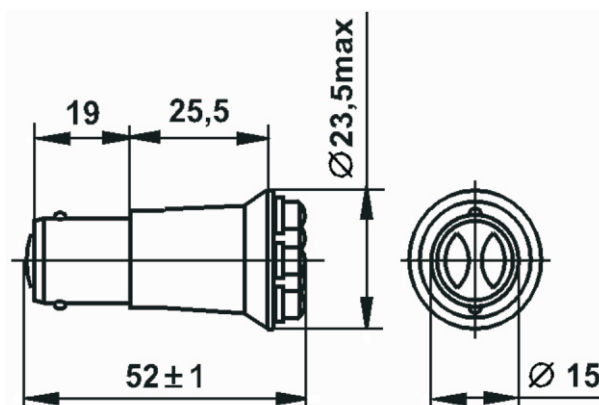


\* Is discussed with the client during order

## LPO-04



Serve for local illumination of the equipment and panels.  
Serve for replacement of incandescent lamps in railway lighting LM - 80, LO - 80.  
Socle B15d/19.



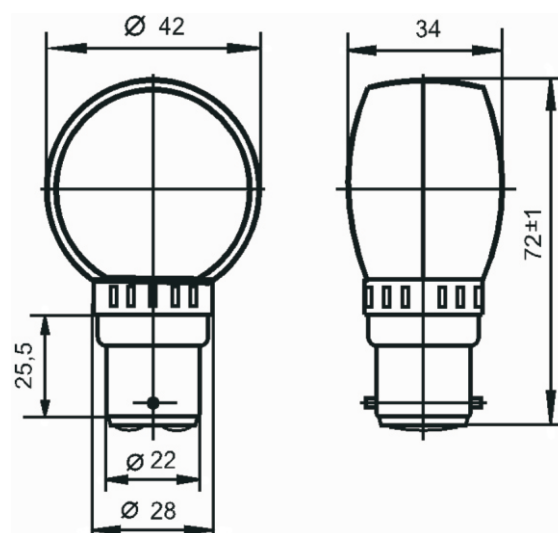
ELECTRICAL AND LIGHTING PARAMETERS

Operating voltage, V	Kind of current	Current ma, no more	Lighting on the axis from 1m height, lx, no less	Power consumption, W, no more	Color lighting	Weight, g
110	direct	15	20	1,65	white warm	20

## LPO-05



LED railway lamps.  
Serve for local and general illumination of railway vehicle.  
Serve for replacement of incandescent railway lamps:  
ZH 54-10, ZH 54-15, ZH 54-25, ZH 54-25-1,  
ZH 110-10, ZH 110-15, ZH 110-15-1, ZH 110-25.  
Socle B 22d/25\*26



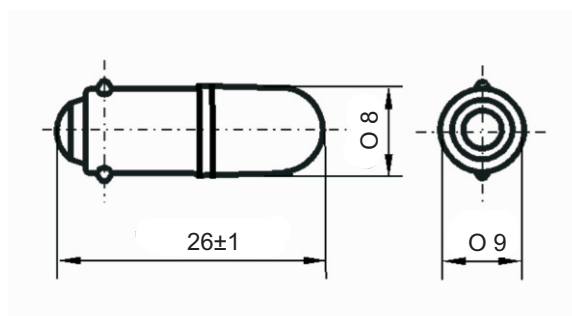
ELECTRICAL AND LIGHTING PARAMETERS

Operating voltage, V	Kind of current	Current ma, no more	Lighting on the axis from 1m height, lx, no less	Power consumption, W, no more	Color lighting	Weight, g
50	direct	50	40	2,5	white warm, white cold	60
110	direct	22	40	2,5		

## LPO-08



Serve for illumination and light signal equipment.  
Socle BA9s.



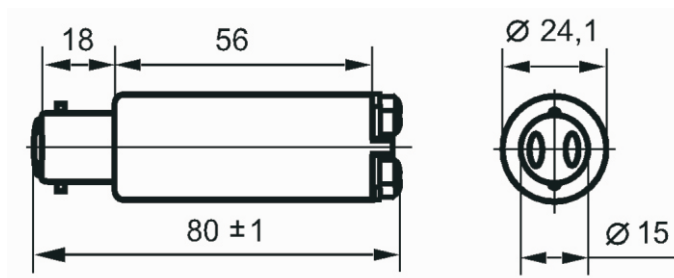
ELECTRICAL AND LIGHTING PARAMETERS

Operating voltage, V	Kind of current	Current ma, no more	Lighting on the axis from 1m height, lx, no less	Power consumption, W, no more	Color lighting	Weight, g
24	direct	20	500	0,48	white cold	3
28	direct	20	500	0,56		

## LPO-10



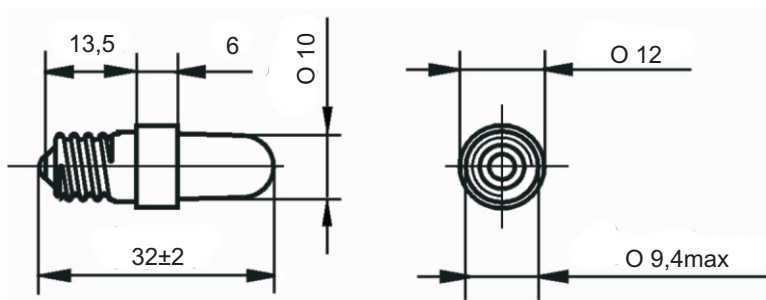
Serve for local illumination of equipment and different panels (TSB, TSM). Serve for replacement incandescent lamps with socle B 15d.



ELECTRICAL AND LIGHTING PARAMETERS

Operating voltage, V	Kind of current	Current ma, no more	Lighting on the axis from 1m height, lx, no less	Power consumption, W, no more	Color lighting	Weight, g
110	direct	20	20	2,12	white warm, white cold	25
220	alternating	25	20	4,4		

# LPO-13



Serve for illumination and light  
signal equipment.  
Socle E 10/13.

ELECTRICAL AND LIGHTING PARAMETERS

Operating voltage, V	Kind of current	Current ma, no more	Lighting on the axis from 1m height, lx, no less	Power consumption, W, no more	Color lighting	Weight, g
24	direct	20	500	0,48	white cold	3
28	direct	20	500	0,56		





**Dear colleagues!**

**If you find it difficult to choose device according to the parameters or specifications, we are ready to consider your technical requirements to elaborate new lighting.**





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