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1. MANUFACTURER

TEP Ex d.o.o.
Prilaz dr. Franje Tuđmana 6 HR-49210 ZABOK
Tel: +385 49 222 900
Web: www.tepex.hr

2. GENERAL SAFETY INFORMATIONS



WARNING!

The user manual contains basic information about the product. Mounting, installation, usage and maintenance should be carried out under this user manual to provide and ensure safe operation within the nominal characteristics. This user manual complement national Regulation and Standards. The responsible person shall ensure their implementation. Failure off implement this user manual can reduce explosion protection and endanger people, property and the environment. Any improper and illegal actions as well as non-compliance with the provisions of this user manual excludes all responsibility by manufacturer side.

Before installation/commissioning:

- Carefully read all instructions,
- Execute proper training of responsible personnel,
- Check that the contents of these instructions is fully understandable by the responsible personnel,
- Make sure that all the requirements and national Regulations as well as all special security measures are applied.

In lack of understanding:

- Contact the manufacturer.

During operation:

- Ensure that this user manual and other work instructions are available to the responsible staff at all times,
- Check the implementation of these instructions and all other safety user's instructions

3. PURPOSE

Explosion proof pendant lighting fitting, type PLFL -/... is intended for general lighting in industrial with potentially explosive atmosphere, in Zones 1, 2 and in areas endangered by explosive and flammable mixtures of dust and air in Zones 21, 22 accordance with EN 60079-10-1/-2: 2009.

4. PRODUCT COMPLIANCE

Design of lighting fitting is accordance with the standard EN 60598-1:2008 and all related standards.

The product is in compliance with Regulations concerning equipment and protective systems for use in potentially explosive atmosphere.

The product complies with the ATEX Directive 94/9 EC and standards:

- EN 60079-0:2012,
- EN 60079-1:2007,
- EN 60079-7:2007,
- EN 60079-31:2009.



The product has been developed, manufactured and tested according to the existing state of technique accordance with the standards EN 9001:2008 and EN ISO / IEC 80079-34:2011.

The product is in compliance with the LV Directive 2006/95 EC.

The product is in compliance with the RoHS Directive 2011/65 EU.

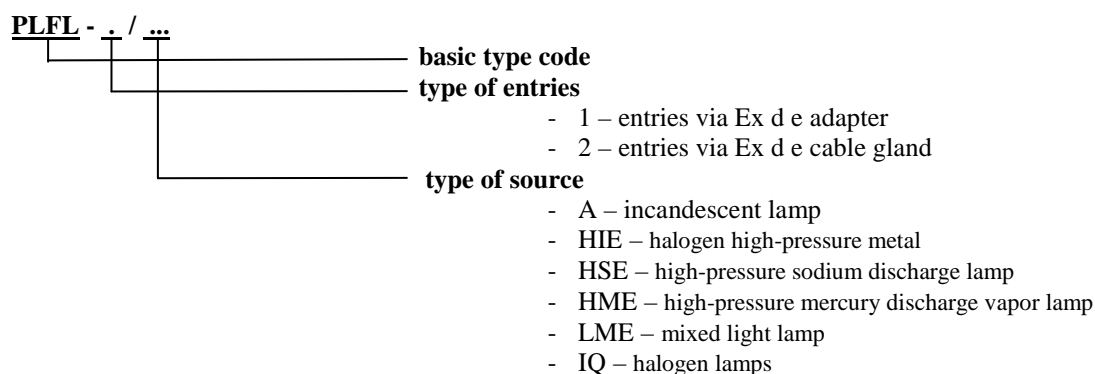
The product is in compliance with EMC Directive 2004/108 EC.

5. DEGREE OF PROTECTION AND DATA

Certificate	EXA 14 ATEX 0001
Category and explosion protection:	 II 2G Ex d e IIC T4-T3 Gb or II 2G Ex d IIC T4-T3 Gb II 2D Ex tb IIIC T140°C - T150°C Db
Ambient temperature:	$-20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$ or $+50^{\circ}\text{C}$
Thermal stability of cable at $T_a > +40^{\circ}\text{C}$ and direct entry:	$\geq 90^{\circ}\text{C}$
Service temperature of cable gland at $T_a > +40^{\circ}\text{C}$:	$\geq 90^{\circ}\text{C}$
Mechanical protection:	IP66, category 1
Resistance to shock:	IK 08
Class of protection:	I (PE - protective earthing)
Rated voltage:	-230 V (-10% / +6%)
Frequency:	-50 Hz
Rated power:	- see selection table
Rated current:	- A 500 W 2,30 A - IQ 500 W 2,10 A - LME 250 W 1,30 A - HIE 250 W 1,80 A - HSE 250 W 1,80 A - HME 250 W 1,80 A
Power factor	- $\cos \varphi > 0,9$ discharge lamps - $\cos \varphi = 1$ lamps
Entries:	- two entries Ex d, M20x1,5-6H in accordance EN 60079-1:2007, ISO 965-1, ISO 965-3
Ex d adapter:	- type ADP 23/1,  II 2G Ex d e IIC Gb II 2D Ex tb IIIC Db, cable gland ISO 25 for cable \varnothing 7-15 mm
Connection terminals inside adapter, type PLFL-1/...	- terminals for connection L + NE + PE; 2,5 mm ² , - solid, stranded
Connection terminals inside light fitting	- terminals for connection L + NE + PE; 2,5 mm ² , solid, stranded - it is possible through wiring, $I_{\max} = 16$ A
External PA / PE terminal:	- max 2 x 6 mm ² flexible, 3 pcs.
Tightening torque:	- housing of Ex d e adapter and Ex d plug 3,5 Nm - pressure nut of cable gland 2,5 Nm - screws of Ex e terminal 1,2 Nm
Wiring:	- Radox 155, 1,5 mm ² , 1 kV AC, -55 °C do +155 °C, in accordance EN 60228:2005 class 5, mark of quality VDE
Lamp holder:	- E 40, 750 V, 4A, 5 kV, in accordance EN 60238:2004; mark of quality ENEC
Locking switch:	- two-pole, 250 V, 16(4) A, -40 °C do +150 °C,

	in accordance EN 60947-1:2007, EN 61058:2002; mark of quality VDE - Turns of the supply voltage when opening the housing of the protective glass framework
Ballast:	- PLFL-./250 HIE, HSE, HME 230V/50Hz, $t_w=130^{\circ}\text{C}$, $\Delta T=50\text{ K}$, reversible temperature fuse $t_{out}=140^{\circ}\text{C}$ - in accordance EN 60923:2005, EN 61347-2-9:2013; mark of quality ENEC
Capacitor:	- PLFL-./250 HIE, HSE - $32\ \mu\text{F}\pm 5\%$ - PLFL-./250 HME - $18\ \mu\text{F}\pm 5\%$ 280 V, 50/60 Hz, -40°C to $+100^{\circ}\text{C}$, in accordance EN 60252-1:2011, EN 61048:2006; mark of quality VDE
Igniter:	- PLFL-./250 HIE, HSE 220-240 V/50-60 Hz, $t_c=105^{\circ}\text{C}$, in accordance EN 60927:2007, EN 61347-2-1:2008; mark of quality VDE
Mounting:	- suspension via two screws with ring heads M8, DIN 580 - for ceiling construction joists over the suspension bracket with screwed accessories M8 at a distance of 160 mm - M10 at distance of 165 x 165 mm
Weight:	- ca 18 kg – PLFL-./500 A,IQ and PLFL/250 LME - ca 23 kg - PLFL-./250 HIE, HSE, HME

6. TYPE



TYPE	EXPLOSION PROTECTED FOR ... $\leq T_a \leq$...		Allowed inclination $\pm 45^{\circ}$ from vertical mounting
PLFL-./250 HIE, HSE	Ⓔ II 2G Ex d e IIC Gb	T4 $-20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$	
		T3 $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}$	
PLFL-./250 HME	Ⓔ II 2D Ex tb IIIC Db	T140°C $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$	
		T4 $-20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$	
		T3 $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$	
PLFL-./250 LME	Ⓔ II 2G Ex d e IIC Gb	T4 $-20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$	
		T3 $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$	
		T140°C $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$	
PLFL-./500 A, IQ	Ⓔ II 2G Ex d e IIC Gb	T3 $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$	
		T150°C $-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$	

7. MOUNTING AND INSTALLATION

Mounting and installation is done according to technical and certification data on warning labels of the lamp, this user manual by manufacturer, national regulations and laws. Only with that, explosion-proof protection of pendant light fitting is ensured with EC-type certificate.

The quality of used materials guarantees functionality congruent norms, in the "normal" industrial atmosphere. For special requirements please contact the manufacturer.

Opening Ex d chamber is done by unscrewing the blocking screws M5x25 on the glass framework and unscrewing the left frame assembly and a protective glass.

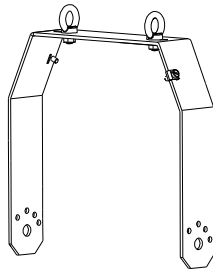
Blockade switch is ensuring non-voltage state on E40 lampholder when the Ex d casing is opened. In that way is possible to replace the light source without switching off the electrical current.

The lamp is standard delivered without source of light.

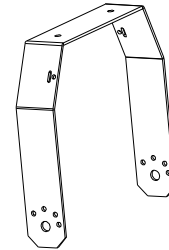
The connection cable is installed into the adapter Ex de ADP 23/1. It is necessary to check that the cables are clean and undamaged. Particular attention should be paid to the selection of the inner sealing ring of the adapter to the outer diameter of the cable. Pressure nut of the adapter and the adapter body should be torqued with nominal torque. Unused introduction should

be close with plug Ex d ATEX certified for II 2G, II 2D that is protected from loosening by the manufacturer. The electrical connection is made in Ex de adapter by connecting the cable guides on the circuit terminals Ex-e - L + N + PE and tightening the clamps with nominal torque. Through-wiring is possible by connecting the plug-in terminals inside the case. Cable for potential equalization / external earthing should be connected to an external grounding. Closing the casing is performed as described above, in reverse order of actions. Standard mounting Fixtures are:

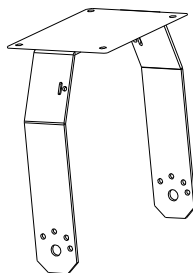
- suspension via two screws with ring heads M8, DIN 580



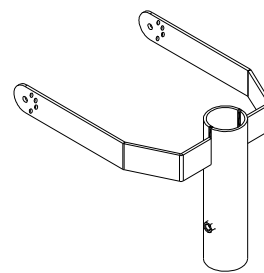
- for ceiling construction joists over the suspension bracket with screwed accessories M8 at a distance of 160 mm



- on the wall using a joints for wall mounting with screw M10 at a distance of 165 x 165 m



- suspension to the tube 2 'and blocking with the two screws M10



It is allowed to turn the lamp from the vertical by $\pm 45^\circ$.

8. INSPECTION, MAINTENANCE, REPAIR AND OVERHAUL

Inspections are carried out in accordance with IEC 60079-17:2014, general and special conditions of manufacturer and users Regulations and includes supervision of parts on which the explosion protection depends, especially:

- that the Ex d cable glands and Ex d e adapter are installed by the instructions of the manufacturer and that are fastened with nominal torque,
- that the housing completely closed with protective glass compound and that mechanical blockage against self-opening is done,

All the repairs are performed by the manufacturer or the manufacturer's authorized personal and the original parts must be provided according to the product documentation, all in accordance with EN 60079-19:2011.

If repair or any other procedure are performed on the product by unauthorized person, all producer responsibility for the product and the warranty and the manufacturer's declaration of conformity becomes invalid.

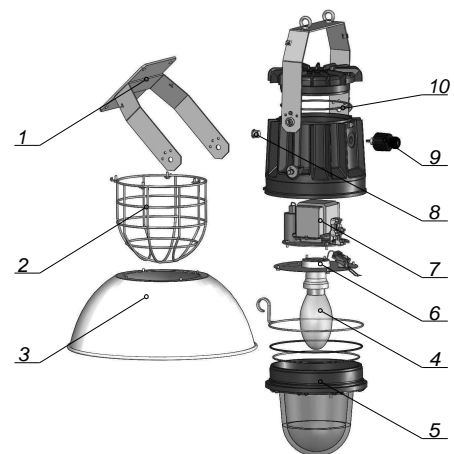
9. SPARE PART AND ACCESSORIES

Accessories:

1. Mounting bracket (the possibility of rotate $\pm 45^\circ$)
2. Protective grid, set
3. External reflector, wide beam, set
4. Light source, according to table
8. Ex d plug, M20, type D8920110, SIB ADR
 - Ex d cable gland, ATEX certificate II 2G, II 2D

Spare parts:

5. Protective glass with glass holder
6. Internal reflector with lamp holder set
7. Set bed plate
8. Ex d plug M20, type D8920110, SIB ADR
9. Adapter Ex d e ADP 23/1, set
10. Cover gasket



10. RESPONSIBILITY AND AUTHORIZATION

This instruction is the basic information about the product. It is completed by the corresponding national laws and regulations. Production, use, certification and supervision are determined at the national level:

- Regulations concerning equipment and protective systems intended for use in potentially explosive atmospheres EU directive 94/9 EC (ATEX 95)
- Regulations on minimum requirements for safety and health protection of workers and technical inspection of facilities, equipment, installations and equipment in hazardous areas EU directive 1999/92/EC (ATEX 137).

The responsible person shall ensure their implementation at the working facility.

11. STORAGE AND TRANSPORT

Transportation and warehousing of the lamps is only allowed in the original packaging, as outlined in a cardboard box.

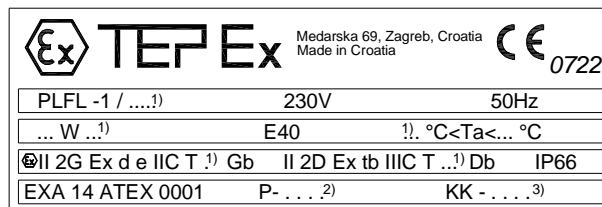
12. MANUFACTURER'S WARRANTY

The manufacturer provides a warranty on the product for a period of one year under the provisions of this user manual and the law on obligations. This statement has the force of Warranty sheet.

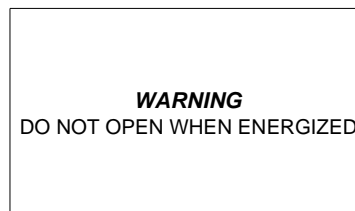
13. MARKING

Explosion-protected pendant lighting fitting, type PLFL-1/. . . is labeled with:

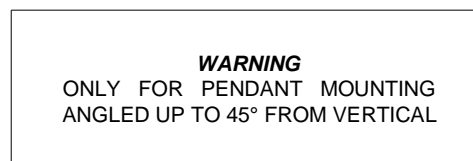
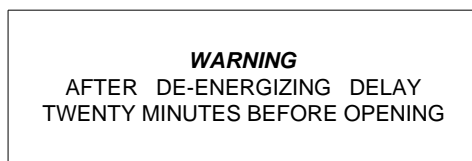
- marking plate on housing:



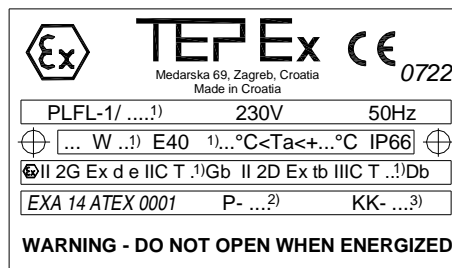
- warning plate on cover:



- warning plate on housing:





- marking plate on internal reflector:



Explosion-protected pendant lighting fitting, type PLFL-2/. . . is labeled with:

- marking plate on housing:

 TEP Ex		Medarska 69, Zagreb, Croatia Made in Croatia	 0722
PLFL -2 / ¹⁾	230V	50Hz	
... W ... ¹⁾	E40	!}. °C<Ta<... °C	
⊕ II 2G Ex d IIC T .. ¹⁾ Gb		II 2D Ex tb IIIC T .. ¹⁾ Db IP66	
EXA 13 ATEX	P- ²⁾	KK- ³⁾	

- warning plate on housing:

WARNING
DO NOT OPEN WHEN ENERGIZED

- warning plate on housing:



WARNING
AFTER DE-ENERGIZING DELAY
TWENTY MINUTES BEFORE OPENING

WARNING
ONLY FOR PENDANT MOUNTING
ANGLED UP TO 45° FROM VERTICAL

- warning plate on housing for T_a> +40°C:

WARNING
USE CABLE AND CABLE GLANDS
SUITABLE FOR A TEMPERATURE
OF AT LEAST 90°C

- marking plate on internal reflector:

 TEP Ex		Medarska 69, Zagreb, Croatia Made in Croatia	 0722
PLFL-2/ ¹⁾	230V	50Hz	
⊕ ... W .. ¹⁾ E40 !}. °C<Ta<+...°C IP66 ⊕			
⊕ II 2G Ex d IIC T .. ¹⁾ Gb		II 2D Ex tb IIIC T .. ¹⁾ Db	
EXA 14 ATEX 0001	P- ... ²⁾	KK- ... ³⁾	
WARNING - DO NOT OPEN WHEN ENERGIZED			

¹⁾ entered type of sources and technical data

^{2),3)} entered the number of individual tests