

## PLFS-N 100 LED

Upute za uporabu  
User manual

## UPOZORENJE

Upute za uporabu sadrže osnovne informacije o proizvodu. Montaža, instaliranje, uporaba i održavanje trebaju biti izvedeni prema ovoj Uputi kako bi bio osiguran siguran rad unutar nazivnih karakteristika. Ovu Uputu nadopunjuju nacionalni Pravilnici i norme. Odgovorna osoba korisnika je dužna osigurati njihovo provođenje. Neprovođenje može umanjiti protueksplozijsku zaštitu uređaja i dovesti u opasnost ljude, imovinu i okoliš. Svako neispravno i nedozvoljeno postupanje kao i nepoštivanje odredbi ove Upute isključuje svaku odgovornost proizvođača.

**Prije ugradnje/puštanja u pogon:**

- Pažljivo pročitati cijelu Uputu za uporabu,
- Izvršiti odgovarajuću obuku odgovornog osoblja,
- Provjeriti da je sadržaj ove Upute u potpunosti razumljiv odgovornim osobama,
- Uvjeriti se da su primijenjeni svi zahtjevi nacionalnih Pravilnika i posebne sigurnosne mjere ukoliko postoje.

**U slučaju nejasnoća:**

- Kontaktirati proizvođača.

**Tijekom pogona:**

- Osigurati da ove Upute za uporabu i druge radne upute korisnika budu vidljivo istaknute i dostupne odgovornom osoblju cijelo vrijeme,
- Provjeravati provođenje ove Upute i svih drugih sigurnosnih uputa korisnika.



## 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.

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## 1. NAMJENA

Protueksplozijski zaštićena ovjesna svjetiljka PLFS-N 100 LED namijenjena je za upotrebu u industrijskim prostorima na mjestima s potencijalno eksplozivnom atmosferom plinova, para i prašina u zonama opasnosti 1, 2, 21, 22 sukladno normi EN 60079-10-1 i EN 60079-10-2.

## 2. SUKLADNOST PROIZVODA

Konstrukcija svjetiljke sukladna je s normama EN 60598-1 i svim povezanim normama.

Proizvod je sukladan Pravilniku o opremi i zaštitnim sustavima namijenjenim za uporabu u potencijalno eksplozivnim atmosferama, NN br. 34/16.

Proizvod je sukladan ATEX Direktivi 2014/34/EU i normama:

- EN IEC 60079-0:2018,
- EN 60079-1:2014,
- EN IEC 60079-7:2015+A1:2018,
- EN 60079-28:2015,
- EN 60079-31:2014.


Proizvod je razvijen, proizveden i ispitan prema postojećem stanju tehnike sukladno normama EN ISO 9001, EN ISO 80079-34 i EN ISO 14001.

Proizvod je sukladan LVD Direktivi 2014/35/EU.

Proizvod je sukladan RoHS Direktivi 2011/65/EU.

Proizvod je sukladan EMC Direktivi 2014/30/EU.

## 3. TEHNIČKI PODACI

Certifikat	FIDI 19 ATEX 0031
Oznaka kategorije i protueksplozijske zaštite uređaja:	 II 2G Ex db eb op is IIC T6 Gb II 2D Ex tb op is IIIC T85°C Db
Temperatura okoline:	-40°C / -20°C ≤ Ta ≤ +50°C
Mehanička zaštita:	IP 66
Otpornost na udar:	IK 08
Klasa zaštite:	I (PE - zaštitno uzemljenje)
Nazivni napon Un:	110 – 230 V AC, 127-230V DC
Radni napon:	90 - 305 V AC / 127 - 431 V DC
Nazivna snaga Pn:	35 W / 60 W / 80 W / 100 W
Faktor snage:	>0,95
LED izvor:	CLU058-1825C4-403M2M2-F1, Citizen LTD.
OVP zaštita:	IEC 61000-4-5, EN 62031 3kV/1min - udarni prenapon 8/20μs 6kV/3kA

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## 1. PURPOSE

Explosion protected pendant light fitting type PLFS-N 100 LED, is intended for general lighting in industrial areas with potentially explosive atmosphere Zones 1, 2, 21, 22 in accordance with EN 60079-10-1 and EN 60079-10-2. The quality of the materials ensures compliance with standard functionality in standard industrial atmosphere.

## 2. PRODUCT CONFORMITY

The product complies with the standards:

- EN IEC 60079-0:2018,
- EN 60079-1:2014,
- EN IEC 60079-7:2015+A1:2018,
- EN 60079-28:2015,
- EN 60079-31:2014.

The product has been developed, manufactured and tested according to the existing state of technique accordance with the standards EN ISO 9001 and EN ISO 80079-34 and EN ISO 14001.


The product is in compliance with the ATEX Directive 2014/34/EU.

The product is in compliance with the LVD Directive 2014/35 EU.

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

The product is in compliance with EMC Directive 2014/30/EU.

## 3. TECHNICAL DATA

Certificate:	FIDI 19 ATEX 0031
Category and explosion protection:	 II 2G Ex db eb op is IIC T6 Gb II 2D Ex tb op is IIIC T85°C Db
Ambient temperature:	-40°C / -20°C ≤ Ta ≤ +50°C
Mechanical protection:	IP66
Resistance to shock:	IK 08
Class of protection:	I (PE - protective earthing)
Rated voltage Un:	110 – 230 V AC, 127-230V DC
Service voltage:	90 - 305 V AC / 127 - 431 V DC
Rated power Pn:	35 W / 60 W / 80 W / 100 W
Power factor:	>0,95
LED light source:	CLU058-1825C4-403M2M2-F1, Citizen LTD.
OVP protection:	IEC 61000-4-5, EN 62031 3kV/1min impulse overvoltage 8/20μs 6kV/3kA

LED driver:	LED driver PLFS-N 100 LED, HBG-100P-60 MEANWELL Co.Ltd.
OCP zaštita:	2,25 A F
OTP zaštita:	T <sub>max</sub> =80°C, povratno, IEC 60730-1
Svjetlosni tok:	5500 lm at Tamb = 25°C for 35W 9400 lm at Tamb = 25°C for 60W 12500 lm at Tamb = 25°C for 80W 15600 lm at Tamb = 25°C for 100W
Temperatura boje svjetlosti:	4000 K
Indeks uzvratna boje (CRI):	>80
Očekivana životna dob LED-a:	50 000 radnih sati pri tamb=40°C – L90/B10
Priključne stezaljke:	stezaljke za spajanje faznog, neutralnog i zaštitnog vodiča L1, L2, L3, N, PE; max 4 mm <sup>2</sup> sol (r), sol (s), f, Moment pritezanja stezaljke 1,2 Nm Proizvođač: Connectwell Pvt. doo, Indija, Certifikat: SIRA 16 ATEX 3170U Oznaka kategorije i protueksplozijske zaštite uređaja: II 2G Ex eb IIC Gb ili Ex ib IIC Gb Tip adaptera ADP23 / 1 [L,N,PE] Oznaka kategorije i protueksplozijske zaštite uređaja: II 2G Ex db eb IIC T6 Gb ili II 2D Ex tb IIIC T85 ° C Db Certifikat tipa: FIDI 19 ATEX 0014X Proizvođač: TEPEX d.o.o, Hrvatska
Vanjske stezaljke za uzemljenje:	stezaljke za vanjsko uzemljenje i izjednačavanje potencijala, max 2 x 6 mm <sup>2</sup> sol(s), f
Uvodi:	prema tablici izvedbi
Ex e uvodnica i čep:	jedna Ex eb II 2G / II 2D kabelačke uvodnice M25x1,5 i jedan Ex eb II 2G / II 2D čep M25x1,5 sukladno EN 50262
Momenti pritezanja:	Pritisna matica Ex eb uvodnice 2,5 Nm Tijelo Ex db uvodnice i čepa 3,5 Nm
Masa:	cca 10,5 kg

Navojni raspori (According to EN 60079-1/2014, clause 5.3):  
M 195x 2 - 6H/6g, medium tolerance according to ISO 965-1/98, thread DIN 13 T.24/83, 8 full threads  
M 20 x 1,5 - 6H/6g, medium tolerance according ISO 965-1/98, thread ISO 965-3/98, 9 full threads  
Kombinirani raspoređivanje (According to EN 60079-1/2014, clause 5.2):  
 $L=c+d=(6,4\pm 0,1)+(22\pm 0,1)=28,4\pm 0,2$  mm  
Gap  $i_{max}=0,2$  mm ( $f<0,5$  mm)

LED driver:	LED driver PLFS-N 100 LED, HBG-100P-60 MEANWELL Co.Ltd.
OCP protection:	2,25 A F
OTP protection:	T <sub>max</sub> =80°C, resettable, IEC 60730-1
Rated luminous flux:	5500 lm at Tamb = 25°C for 35W 9400 lm at Tamb = 25°C for 60W 12500 lm at Tamb = 25°C for 80W 15600 lm at Tamb = 25°C for 100W
Light colour:	4000 K
Refractive index(CRI):	>80
Estimated service life:	50 000 working hours Tamb = 40°C L90/B10
Connection terminal:	terminals for phase, neutral and earthing conductors L1, L2, L3, N, PE; max 4 mm <sup>2</sup> sol(r), sol(s), f, torque screw for terminals 1,2 Nm Manufacturer: Connectwell Pvt. Ltd., India, Certificate: SIRA 16 ATEX 3170U Category and explosion protection: II 2G Ex eb IIC Gb or Ex ib IIC Gb Adapter type ADP23/1 [L,N,PE] Category and explosion protection: II 2G Ex db eb IIC T6 Gb or II 2D Ex tb IIIC T85°C Db Type certificate:FIDI 19 ATEX 0014X Manufacturer: TEPEX d.o.o, Croatia
Connection terminal for grounding:	terminal for external grounding, equipotential bonding, max 2 x 6 mm <sup>2</sup> sol(s), f
Cable entries:	according to type table
Ex e cable gland and plug:	One Ex eb II 2G / II 2D cable glands M25x1,5 and one Ex eb II 2G / II 2D plug M25x1,5 in accordance with EN 50262
Tightening torques values:	Pinch Nut of the Ex eb cable glands: 2,5 Nm Body of the Ex db glands and plug: 3,5 Nm
Weight:	Cca 10,5 kg

Threaded joints (According to EN 60079-1/2014, clause 5.3):  
M 195x 2 - 6H/6g, medium tolerance according to ISO 965-1/98, thread DIN 13 T.24/83, 9 full threads  
M 20 x 1,5 - 6H/6g, medium tolerance according ISO 965-1/98, thread ISO 965-3/98, 10 full threads  
Spigot joint (According to EN 60079-1/2014, clause 5.2):  
 $L=c+d=(6,4\pm 0,1)+(22\pm 0,1)=28,4\pm 0,2$  mm  
Gap  $i_{max}=0,2$  mm ( $f<0,5$  mm)

#### 4. TIPNA OZNAKA

PLFS-N 100 LED - . / .

Prvi broj = Nazivna snaga

Drugi broj = Uvodi

#### 4. TYPES

PLFS-N 100 LED - . / .

First number = Rated power

Second number = Entries

NAZIVNA SNAGA:	TEMPERATURA OKOLINE:	UVODI:
1. = 35 W	-40°C ≤ T <sub>amb</sub> ≤ +50°C	1. = Priključna komora [3L+N+PE] i prolazno ožičenje + ISO25 uvodnica i čep za t <sub>amb</sub> ≥ -40°C
	-20°C ≤ T <sub>amb</sub> ≤ +50°C	2. = ADP 23/1
		3. = Priključna komora [3L+N+PE] i prolazno ožičenje + ISO25 uvodnica i čep za t <sub>amb</sub> ≥ -20°C
2. = 60 W	-40°C ≤ T <sub>amb</sub> ≤ +50°C	1. = Priključna komora [3L+N+PE] i prolazno ožičenje + ISO25 uvodnica i čep za t <sub>amb</sub> ≥ -40°C
	-20°C ≤ T <sub>amb</sub> ≤ +50°C	2. = ADP 23/1
		3. = Priključna komora [3L+N+PE] i prolazno ožičenje + ISO25 uvodnica i čep za t <sub>amb</sub> ≥ -20°C
3. = 80 W	-40°C ≤ T <sub>amb</sub> ≤ +50°C	1. = Priključna komora [3L+N+PE] i prolazno ožičenje + ISO25 uvodnica i čep za t <sub>amb</sub> ≥ -40°C
	-20°C ≤ T <sub>amb</sub> ≤ +50°C	2. = ADP 23/1
		3. = Priključna komora [3L+N+PE] i prolazno ožičenje + ISO25 uvodnica i čep za t <sub>amb</sub> ≥ -20°C
4. = 100 W	-40°C ≤ T <sub>amb</sub> ≤ +50°C	1. = Priključna komora [3L+N+PE] i prolazno ožičenje + ISO25 uvodnica i čep za t <sub>amb</sub> ≥ -40°C
	-20°C ≤ T <sub>amb</sub> ≤ +50°C	2. = ADP 23/1
		3. = Priključna komora [3L+N+PE] i prolazno ožičenje + ISO25 uvodnica i čep za t <sub>amb</sub> ≥ -20°C
RATED POWER:	AMBIANT TEMPERATURE:	ENTRIES:
1. = 35 W	-40°C ≤ T <sub>amb</sub> ≤ +50°C	1. = Connection box [3L+N+PE] and true wiring + ISO25 cable gland and plug for t <sub>amb</sub> ≥ -40°C
	-20°C ≤ T <sub>amb</sub> ≤ +50°C	2. = ADP 23/1
		3. = Connection box [3L+N+PE] and true wiring + ISO25 cable gland and plug for t <sub>amb</sub> ≥ -20°C
2. = 60 W	-40°C ≤ T <sub>amb</sub> ≤ +50°C	1. = Connection box [3L+N+PE] and true wiring + ISO25 cable gland and plug for t <sub>amb</sub> ≥ -40°C
	-20°C ≤ T <sub>amb</sub> ≤ +50°C	2. = ADP 23/1
		3. = Connection box [3L+N+PE] and true wiring + ISO25 cable gland and plug for t <sub>amb</sub> ≥ -20°C
3. = 80 W	-40°C ≤ T <sub>amb</sub> ≤ +50°C	1. = Connection box [3L+N+PE] and true wiring + ISO25 cable gland and plug for t <sub>amb</sub> ≥ -40°C
	-20°C ≤ T <sub>amb</sub> ≤ +50°C	2. = ADP 23/1
		3. = Connection box [3L+N+PE] and true wiring + ISO25 cable gland and plug for t <sub>amb</sub> ≥ -20°C
4. = 100 W	-40°C ≤ T <sub>amb</sub> ≤ +50°C	1. = Connection box [3L+N+PE] and true wiring + ISO25 cable gland and plug for t <sub>amb</sub> ≥ -40°C
	-20°C ≤ T <sub>amb</sub> ≤ +50°C	2. = ADP 23/1
		3. = Connection box [3L+N+PE] and true wiring + ISO25 cable gland and plug for t <sub>amb</sub> ≥ -20°C

#### 5. MONTAŽA

Montaža i instaliranje svjetiljke se izvodi prema podacima na natpisnim pločicama na svjetiljci, ovim i dodatnim uputama proizvođača, nacionalnim Propisima i Pravilnicima, kao i prema općenito priznatim pravilima tehnike. Samo uz taj uvjet osigurana je tipnim certifikatom potvrđena protueksplozijska zaštita svjetiljke.

Kvaliteta upotrijebljenih materijala jamči funkcionalnost sukladnu normi, u «normalnoj» industrijskoj atmosferi. Za posebne uvjete pogona molimo kontaktirati proizvođača.

Montaža svjetiljke na podlogu vrši se preko nosača vijčanim priborom M6.

Otvaranje kućišta se vrši odvrtanjem osam vijka M6x20. Priključni kabel se uvodi u kućište kroz predviđene uvodnice. Pri tome treba provjeriti da su kabeli čisti i neoštećeni. Posebnu pažnju treba posvetiti odabiru unutarnjeg brtvenog prstena uvodnice prema vanjskom promjeru kabela. Pritisnu maticu uvodnice i tijelo uvodnice treba pritegnuti nazivnim momentom. Neiskorišteni uvod, na isti način, obavezno treba zatvoriti čepom. Zatvaranje kućišta se izvodi na opisani način, suprotnim redoslijedom radnji.

#### 5. INSTALATION

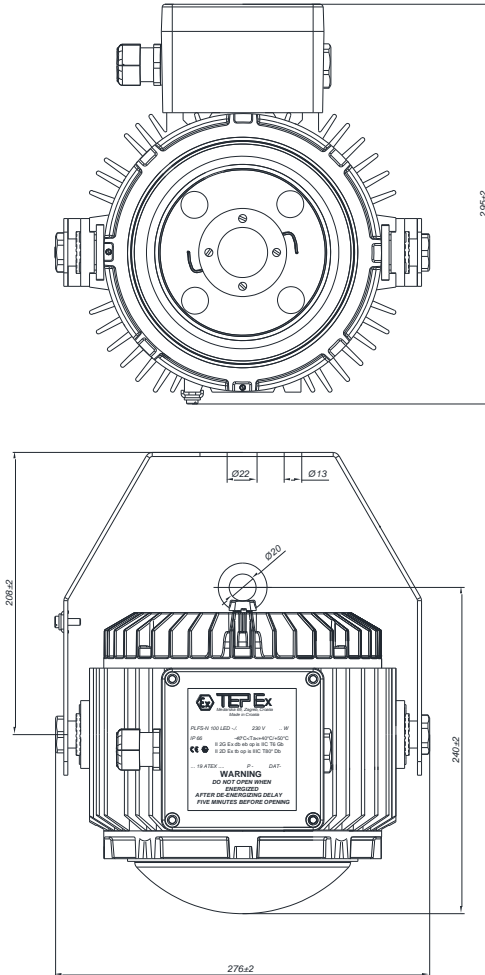
Installation and putting into operation have to be done according to technical and certification data on warning label on lamp, this user manual, national regulations and laws. Only with that, explosion-proof protection of bulkhead light fitting is ensured with EC-type examination certificate.

Installation of lamp (on wall or ceiling) is done with steel brackets with M6 screws.

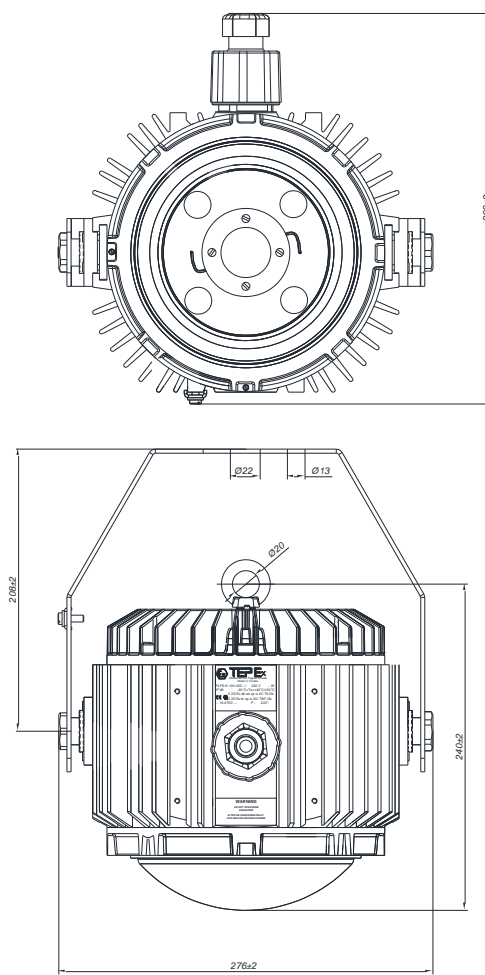
Opening of Ex e enclosure is done by unscrewing four screws M6x20. Special attention must be dedicated to selection of inner gasket sealing ring of Ex db cable glands according to diameter of connecting cable. Pressure nut and intermediate gland must be tightened with nominal torque. Unused cable entries must be closed with plug. The electric connecting is performing by connecting power supply cable (L, NE, PE) on the connection terminals and terminal for internal grounding.

The closing of the Ex e enclosure should be done by a reverse sequence of action.

## 6. DIMENZIJE



## 6. DIMENSIONS



## 7. PREGLED, ODRŽAVANJE, POPRAVAK I OBNAVLJANJE

Potrebno je obavljati preglede i održavati sve dijelove uređaja o kojima ovisi protueksplozijska zaštita sukladno normi EN 60079-17, općim i posebnim uputama proizvođača i Pravilnicima korisnika, a naročito:

- da su kućište, svi dijelovi kućišta, zaštitno staklo i brtve bez puknuća i oštećenja,
- da je kućište potpuno zatvoreno sklopom zaštitnog stakla,
- da su uvodnica, čep, vijci kutnika brtve, vijak stezaljke za uzemljenje pritegnuti nazivnim momentom.

Popravak, obnavljanje ili pregradnju kućišta obavlja proizvođač ili od proizvođača ovlaštena pravna osoba, originalnim dijelovima prema proizvodnoj dokumentaciji, a sve sukladno normi EN 60079-19.

Ukoliko popravak i/ili obnavljanje i/ili pregradnju vrši treća osoba, prestaje svaka odgovornost proizvođača za proizvod, a izjava sukladnosti proizvođača postaje nevažeća.

## 7. INSPECTION, MAINTENANCE, REPAIR AND OVERHAUL

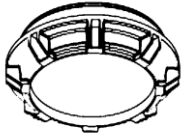
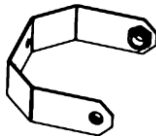



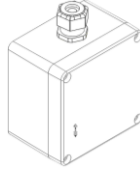

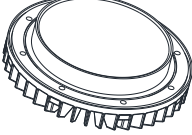

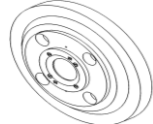
Inspections are carried out in accordance with IEC 60079-17, general and special conditions of manufacturer and users Regulations and includes supervision of parts on which the explosion protection depends, especially:

- that the housing, all part of housing, protective glass and gasket are without rupture and damage,
- that the housing is completely closed with set of protective glass,
- that the cable gland, plug, connecting terminals, screws of protective grid are tightened with nominal torque.

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

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.

## 8. REZERVNI DIJELOVI

Spare parts/ Accessories	Description	Code	Spare parts/ Accessories	Description	Code
	PLFS-N 100 LED The glass protective framework, set	PLFS-N 100 LED 10-110		PLFS-N 100 LED bracket for wall mounting, set	PLFS 50-4 20-130
	Adapter ADP 23/1	ADP 23/1		Gasket PLFS-N	PLFS-N 100 LED 10-120
	Ex db/eb tb 4F metal cable gland ISO25	PLFS-N 100 LED 20-110		Connection chamber, set	PLFS-N 100 LED 10-130
	Ex-eb cable gland ISO25, set	PLFS-N 100 LED 30-110		LED Driver assembly	PLFS-N 100 LED 10-140
	Ex-eb plug ISO25, set	SPC 25		LED Carrier assembly	PLFS-N 100 LED 10-150

## 8. SPARE PARTS

## 9. ODGOVORNOSTI I OVLAŠTENJA

Ova Uputa predstavlja najvažniju informaciju o proizvodu. Nadopunjuju ju odgovarajući nacionalni zakoni i propisi. Proizvodnja, uporaba, certifikacija i nadzor određene su na nacionalnoj razini:

- Pravilnikom o opremi i zaštitnim sustavima namijenjenim za uporabu u prostorima ugroženim eksplozivnom atmosferom (NN br. 33/16, odnosno EU Direktiva ATEX 2014/34/EU) i
- Pravilnikom o najmanjim zahtjevima sigurnosti i zaštite zdravlja radnika te tehničkom nadgledanju postrojenja, opreme, instalacija i uređaja u prostorima ugroženim eksplozivnom atmosferom (NN br. 39/06, 106/07.), odnosno EU Direktivi 1999/92/EC (ATEX 137).

Odgovorna osoba dužna je osigurati njihovo provođenje u pogonu.

## 10. SKLADIŠTENJE I TRANSPORT

Transport i skladištenje treba vršiti samo u originalnoj ambalaži, na način istaknut na kartonskoj kutiji.

## 11. JAMSTVO PROIZVOĐAČA

Proizvođač izdaje jamstvo na proizvod u trajanju od godine dana prema odredbama Zakona o obveznim odnosima. Ova izjava ima snagu Jamstvenog lista.

## 9. 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 2014/34/EU and
- 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.

## 10. STORAGE AND TRANSPORT

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

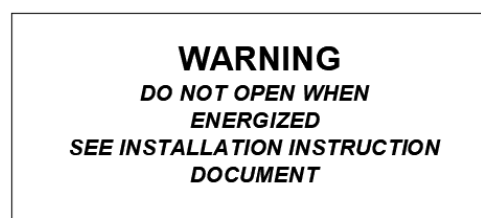
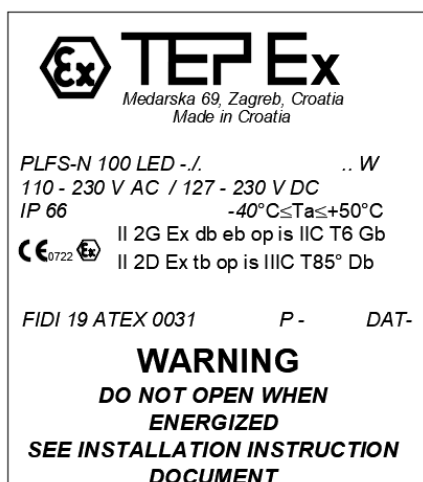
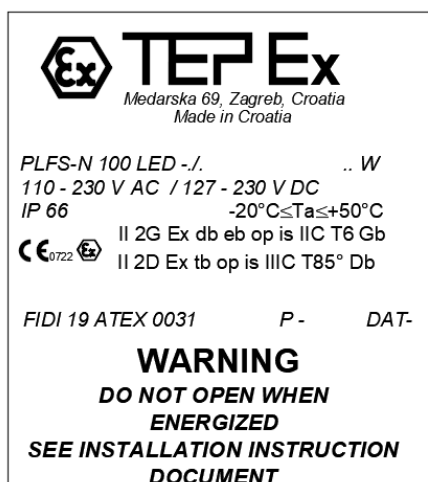
## 11. MANUFACTURER'S WARRANTY

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.

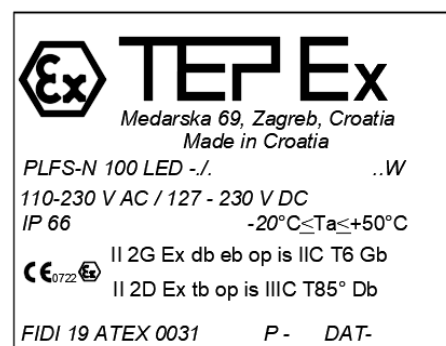
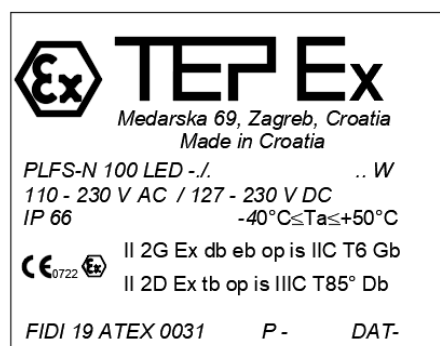
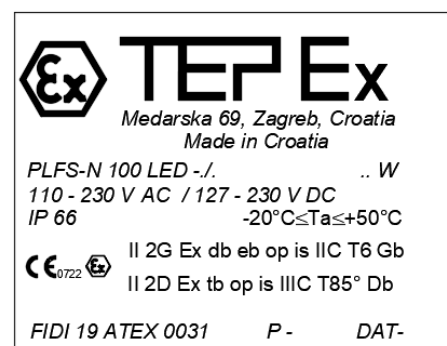
## 12. OZNAČAVANJE

Protueksplozijski zaštićena ovjesna svjetiljka PLFS-N 100 LED označena je s vanjskom označnom pločicom i unutarnjom naljepnicom:

Vanjska natpisna pločica sa nazivnim podacima i upozorenjem na priključnoj komori svjetiljke:



Unutarnja natpisna pločica sa nazivnim podacima:



## 12. MARKING

Explosion protected pendant light fitting PLFS-N 100 LED is marked with the external and the inner label with technical data:

External label with nominal data and warning on the lamp housing:

Internal label with nominal data: