**OPERATING MANUAL**

**The LED semiconductor light**

**«Liniya-1-O» SSP-A-220-034-O-N, T-MCC,**

 **«Liniya-1-P» SSP-A-220-034-P-N, T-MCC,**

**TS 3461-006-41677105-10 OM**

The present operating manual (further named OM) is used for operating LED semiconductor light of “Liniya” type (further named the light).

The OM contains construction data, operating rules and working conditions, maintenance recommendations and other data necessary for the right operating of the light.

Only after being instructed, going through safety working methods, checking of safety rules with further certifying a qualification for safety arrangements, one is admitted for electrical installation, inspection and maintenance of the light unit.

**1. Description and Operating**

**1.1 Light Assignment**

1.1.1 The light is surface-mounted and designed for interior lighting objects.

**1.2 Technical data**

1.2.1 Supply voltage range - 140 ÷ 265 VAC (50±10%) Hz or 200 ÷ 370 VDC;

1.2.2 Humidity up to 95% (at the temperature +40°C).

1.2.3 Working temperature from minus 30°C up to plus 60°C.

1.2.4 Color temperature, K: T - (warm luminous color) 3 000 ÷ 4 000, N (normal luminous color) 4 000 ÷ 6 000.

1.2.5 Ripple factor of the light flux is not more than 5%.

1.2.6 Power factor is not less than 0,9.

1.2.7 Climatic category MCC according to IEC 60721-2-1:2013:1982, IEC 60068-1:2013

1.2.8 Electric shock protection class 1 according to IEC 60598-1.

1.2.9 The lighting source – LED semiconductor module.

1.2.10 Ingress protection rating according to IEC 529 is not worse than IP40.

1.2.11 Service life when conforming to operating conditions is not less than 100 000 hours.

1.2.12 Storage from the date of its being manufactured is 3 years.

1.2.13 Fire safety is up to IEC 60598-1, NPB 249-97.

1.2.14 Insulation resistance of live parts is not less than 2 МОm.

1.2.15 Grounding resistance is not more than 0,5 Оm.

1.2.16 The electrical and illuminating light parameters should correspond to the meanings that are pointed in the table 1.

|  |  |  |  |
| --- | --- | --- | --- |
| The light brand | The light type | Light flux\*, not less than, lm | Consumption power, nominal\*\*, W |
| Liniya-1-O | SSP-A-220-034-O-N,T-MCC | 5300 | 48 |
| Liniya-1-P | SSP-A-220-034-P-N,T-MCC | 5700 | 48 |

\* Light flux is specified for the LED module at the chip temperature of 25 C. To specify the light flux it is necessary to consider IES-file for the light.

\*\* Consumption power value can differ by ±10%.

1.2.17 The light weight, not more than 3.3 kg.

1.2.18 Overall view, alternative constructions and overall sizes of the light are pointed on pic.1



Pic.1

 **1.3 The light complectness:**

1.3.1 The set consists of:

- a light – 1 pce.,

- an operating manual – 1 pce.,

- a passport – 1 pce.,

- a package – 1 pce.

**1.4 Construction and Operation**

1.4.1 The light (see pic.1) consists of the housing which is made of the metal, protective glass, LED semiconductor modules, driver and contact device.

1.4.2 The designation of constitutive parts of the light:

- the housing of the light is the bearing element on which LED semiconductor modules, driver and contact device are fixed for connection of the network wire;

- the protective glass is inserted into the grooves of the case with a help of movable clamping strap and fixed in the housing of the light and is designed to create the necessary curve of the luminous intensity.

**Notes:** the light construction is constantly developing, that’s why changes may have place that do not affect its reliability and technical parameters.

**1.5 Marking**

1.5.1 The light marking is made according to requirements of GOST 9980.4.

1.5.2 Marking of light contains:

- the trademark of the manufacturer;

- the name of the company;

- the address of the company-manufacturer;

- the technical conditions logical number;

- the brand and type of the light;

- specified supply voltage in volts;

- max. rated input in watt;

- IP code;

- manufacturing year and month.

2 The structure of conventional value

SSP-Х-ХХХ-ХХХ-X-X-ХХХ

the letter designates a light curve group (A-cosine);

the three-number figure designates the nominal supply voltage;

the three-number figure designates a batch number;

the letter designates the type of protective glass (O-opal, P- prismatic);

the letter designates a light emission colour (N – normal, W – warm);

the letters designate a climatic performance according to IEC 60721-2-1:2013:1982, IEC 60068-1:2013

**1.6 Packaging**

1.6.1 The package of the light is made according to GOST 12301.

1.6.2 The lights should be packed into a cargo container that provides their safety and protection against mechanical damages.

1.6.3 Manipulation signs should be marked on the cargo container: “Fragile”, “Keep dry”, “Top”, “Max quantity when stocking” according to ISO 780:2015.

**2 Intended Usage**

**2.1 Embodiment.**

2.1.1 The embodiment of the light is designed for internal illumination of public and industrial (office) places.

**2.2. Preparation for Use.**

2.2.1 Installation of a lamp on a wall or a ceiling is made before connection of a lamp to an electric network and external grounding.

2.2.2 To connect the light to the power line it is necessary:

- to open the clamping bar and remove the protective glass from the grooves of the case;

- to enter the supply-line wire through the hole in the housing of the light and connect to the contact device as shown in Picture 2;

- to enter the external grounding wire and connect to the terminal «»; Pic. 2

- to place the protective glass back into the grooves of the lamp housing and close the clamping bar.

**Notes:**

The light is equipped with technological wires connected to the network contact device. When the lamp is connected to the mains, the process wires must be disconnected.

**2.3 Safety Methods.**

2.3.1 For providing safety while operating the light it is forbidden:

- to carry out any operation of the light when energizing;

- to assemble and operate the light with a damaged isolation of the wires.

2.3.2 When assembling and operating the light it’s necessary to guide:

- rules on design of power electric installations;

- the present operating manual.

2.3.3 In order to avoid electric shock the light must be grounded.

**3 Storage and transportation**

3.1 The light should be kept packed according to GOST 23216 for the storage conditions 2 (c) IEC 60721-2-1:2013:1982, IEC 60068-1:2013.

3.2. Transportation of the light can be carried out by any transport at any distance.

3.3. When keeping and transporting the light should be protected against any atmospheric fallout.

**4. Recycling data**

4.1 All the materials of which the light is manufactured are not dangerous for the life and health of people and the environment. On completing the operation of the light it should be disposed of in accordance with the present regulations.

**5. Warranty**

5.1 The manufacturer guarantees the conformance of the light to the technical specifications and normal work within 5 years since operating it at condition of observing the rules of transportation, storage and installation.

5.2 Within the warranty period damaged lights should be changed charge free by the manufacture at the conditions of the conformance to the installation and operating rules by the customer.

**6 Reclamation Data**

6.1 The manufacturer should be laid reclamation claims in case of discovering damages that may lead to the breakdown of the light before the warranty expiration.

The manufacturer’s address:

19, Leskova str., Orel, 302040, RUSSIA, JSC “Proton”.

6.2 In reclamation the light brand, damages, conditions at which they are discovered, the whole operation period should be specified.

There should be attached a copy of the payment document for the light.

**7 Acceptance Certificate**

7.1 The light is manufactured and approved in accordance with the present technical specifications TS 3461–006–41677105–10 and approved to be suitable for the operation.

Placeholders QCD stamp

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date