

Catalog of light sources

2023/2024

ЛИСМА  ЛИСМА



Dear Partners!

Thank You for the interest shown to the products of our company. "Lisma" manufactures the lighting products for over 70 years already. There were many achievements within these years: in our days LISMA is the largest company manufacturer of light sources on the territory of Russia and CIS countries.

The second main business is the glassmaking. The plant produces a wide range of semifinished glass products for the oil and gas, chemical, pharmaceutical industries, and agriculture.

We are the leader in nomenclature as well as in volumes of the products manufactured. Today our product range includes more than 500 kinds of electric lamp, such as: Sodium lamps, Metal-halide lamps, Mercury lamps, Fluorescent lamps, Halogen lamps, GLS lamps, Incandescent lamps for Special Application; including more than 200 kinds of specialized lamps for streets and facades, offices, greenhouses, logistics and industrial complexes, medical and educational facilities. All products are made in accordance with modern requirements for environmental friendliness and energy saving.

Our key advantage is full cycle of manufacture performed at LISMA from the production of semifinished products and components to the assembling of finished products. Comparing with other manufacturers LISMA does not use the method to purchase components or to label them under Russian brands. LISMA develops its own production. It will allow us to control the products quality during all the stages of their manufacture and ensure the competitive product prices also. And it means that we shall offer the Goods using the best prices.

We are glad to see all of You among our customers and we express our gratitude for Your trust. Preferring the products of LISMA You make the right choice and obtain the reliable partner for the favorable business cooperation.

Yours respectfully, collective of "Lisma" company

Basic terminology and definitions

Light is the electric magnetic radiation in range from 310 to 780 nm which is felt visually.

Luminous flux is the intensity of radiation measured depending on the light feeling, which is perceived by human eye. Unit of measure is lumen (lm).

Luminous intensity is the ratio of luminous flux to the body, there is the luminous flux spread and evenly distributed within this angle. Unit of measure is candela (cd).

Luminance is the ratio of the light power emitted by surface in this direction to the projection of glowing surface on the plain perpendicular to this direction. Unit of measure is cd/m².

Light output is the ratio of luminous flux of the light source to its electric power. Unit of measure is lm/W.

Luminosity is the density of the luminous flux produced by source of radiation on the plain illuminated. Unit of measure is lux(lx).

Colour temperature is the temperature of the body black absolutely. The colour of radiation at this temperature is the same as the radiation colour of the body researched at its temperature – T. It is measured in Kelvin degrees(K).

Light colourness is two-dimensional amount which is determined by ratio of the excitation levels of three colour sensing apparatuses of the average human eye feeling the colour, and it operates in the daylight condition.

Colour rendering is characterized by general index of the colour rendering - Ra, which reflects the compliance of object colour when these objects illuminated by this light source to the natural colour of these objects illuminated by the Etalon light source(most often it is the sun).

Infrared radiation is the optical radiation, which wavelength is more than visible radiation. Infra-red radiation is divided into three groups:

- A (short waves) 780-1400 nm
- (medium waves) 1400-3000 nm
- (long waves) 3000-10⁶ nm

Infrared radiation is characterized by its thermal effect.

Ultraviolet (UV) radiation is optical irradiation with the wavelength less than of visual radiation. UV-radiation is divided into three ranges:

- (long waves) 315-400 nm
- (medium waves) 280-315 nm
- (short waves) 100-280 nm

UV-radiation has strong photochemical actions and impacts a varied biological effect.

Photosynthetic photon flux PPF – it's a flux of photons in photosynthetically active radiation range which supports the photosynthesis of plants.

Incandescent lamp - the radiation of this lamp is created due to the heating of tungsten coiled filament after the current flowed through the lamp.

Halogen lamp is the incandescent lamp with the tungsten luminous element and halogen addition which provide the closed chemical cycle.

High Pressure Mercury Discharge lamp – there is the radiation created in this lamp due to electric discharge occurred in the inert gas atmosphere, vapors of metals or their mixtures. The lamp is turned on to the circuits with the star-and-control devices used.

Blended mercury lamp is the high pressure discharge lamp. To limit the current through the lamp the tungsten filament is turned on consistently with the discharge tube inside of its outer bulb. The lamp is turned on to the circuits without the star-and-control devices.

Metal-halide lamp is the lamp where the radiation is created due to the electric discharge in the mixture of mercury vapor and metals of different chemical elements as the halide compounds.

High Pressure Discharge Sodium lamp is the lamp where the radiation is created in the mixture of mercury vapor and sodium at the high pressure of filling gas - argon, xenon.

Starting device is the electric device providing with the conditions necessary for the discharge starting. For example they are the following: starter, ISD – impulse starting device, MRU – the momentary restarting unit.

Start-and-Control device (SCD) is the unit working in electrical circuit with the discharge lamps and applying mainly for the current discharge stabilization.

Reflective coating is the coating (metallized, diffusive and others) applied to inner surface of the lamp bulb to create the necessary distribution of luminous flux through space.

Curve of luminous flux is a graph of the dependence of the light intensity of the luminous flux on the meridional and equatorial angles, obtained by sectioning its photometric body with its flatness or surface. Types: - concentrated; - deep; - cosine; - semi-wide; - wide, - uniform; C - sinus.

Effectiveness in area FAR, ($\mu\text{mol/s}/\text{W}$) – quotient of photosynthetic flux of photons, which is radiated by device between its consumption of power.

Attention!

- Due to constant expansion of line of products you can check the actual nomenclature on web-site of company.
- The specifications shown in this catalogue are the information only. And it is not considered as the basic data for the product properties assessment.
- The manufacturer is not responsible for properties of the products changed (reconstruction, new marking, another package, etc.) and in case of the indirect damage that it cause to other objects.
- The manufacturer reserves the right for the technical changings included, the absence of mistakes cannot be guaranteed.
- Weight and sizes of the package are the reference amount and should be clarified additionally.

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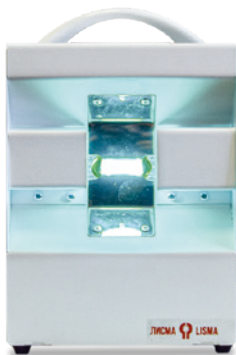


Germicidal irradiators

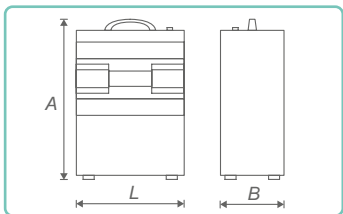


The line of germicidal irradiators "Aladdin" is intended for the elimination of pathogenic microflora in the air and on surfaces, for disinfection of common areas, bathrooms, changing rooms, catering rooms, public transport and personal cars, for disinfection of things. The source of germicidal radiation are special lamps that emit ultraviolet rays in the zone of their greatest bactericidal activity: from 205 to 315 nanometers. This spectrum has a destructive effect on the DNA of the cell of the microorganism, which leads to its death. Irradiators have a guaranteed effect against the flu virus, coronaviruses, including COVID-19; bacteria; golden staphylococcus; mold and fungus. The line includes devices for both home use and industrial scale which is designed for large areas.

GERMICIDAL IRRADIATORS OF OPEN TYPE – ALADDIN-19



- Irradiators are a source of ultraviolet radiation that is harmful to most types of bacteria, viruses and fungi.
- Irradiators are designed for bactericidal treatment (quartzization) of premises (schools, kindergartens, dwelled houses, industrial facilities, etc.) up to 25 m2 in area.
- The irradiators are designed to operate from AC mains with a frequency of 50 Hz and a voltage of 230 V \pm 10%.
- Source of UV radiation: high-pressure mercury lamp of DRT 125-3 type.
- Spare lamp included.
- Irradiator are made according to technical requirements HTPД.676211.004 TY.



Germicidal irradiator of open type Aladdin-19

Irradiator



Aladdin-19

230

50

125

8*

980

830

720

170

100

265

Note:

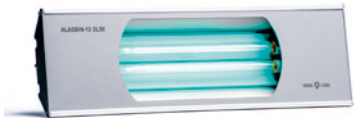
- Time to reach operating characteristics, no more – 15 minutes.
- Break in work for at least 15 minutes after every 30 minutes of continuous work.

* – reference value

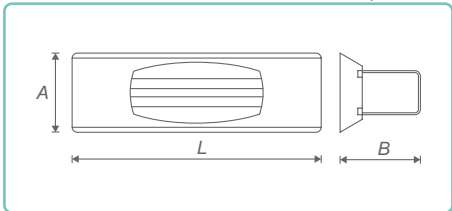
Characteristics of packed irradiators

Type of irradiator	Quantity of irradiators in package, pcs.	Gross weight, kg, no more than	Package dimensions (LxBxH), mm
Aladdin-19	1	3	185x155x275

GERMICIDAL IRRADIATORS OF OPEN TYPE – ALADDIN-19 SLIM



- Irradiators are a source of ultraviolet radiation that is harmful to most types of bacteria, viruses and fungi.
- Irradiators are designed for bactericidal treatment (quartzization) of premises (schools, kindergartens, dwelled houses, industrial facilities, etc.) up to 25 m2 in area.
- The irradiators are designed to operate from AC mains with a frequency of 50 Hz and a voltage of $230\text{ V} \pm 10\%$.
- Source of UV radiation: mercury lamp of 10 type
- Irradiators are light weight;
Start-and-Control device; Wall mount. Silent work.
- Irradiators are made according to technical requirements .676211.004 .



Germicidal irradiator of open type Aladdin-19 Aladdin-19 Slim

Irradiator type



Aladdin-19 Slim 230 50 24 5,4 29 14 550 450 40 143

* – *reference value*

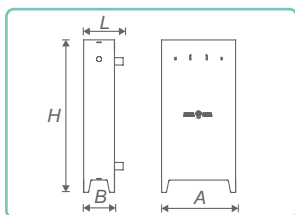
Characteristics of packed irradiators

Type of irradiator	Quantity of irradiators in package, pcs.	Gross weight, kg, no more than	Package dimensions (LxBxH), mm
Aladdin-19 Slim	1	1,5	465x160x100

GERMICIDAL IRRADIATORS OF CLOSED TYPE (RECIRCULATORS) ALADDIN JET



- Made for air disinfection in rooms IV-V type by P 3.5.1904-04: educational, residential, industrial and other premises in the presence of people, animals and plants.
- Designed to operate from AC mains with a frequency of 50 Hz and a voltage of 230 V \pm 10%.
- Installation methods: vertically on legs, vertically or horizontally on the wall.
- Made according to technical requirements HTPД.676211.009 ТУ.



Germicidal irradiator of closed type (recicator) ALADDIN JET

Type of recicator	V	Hz	W	Вт	шт.	W lamp	м³/час	↓ A, мм	↔ B, мм	↑ H, мм	↔ L, мм	кг
ALADDIN JET-70	230	50	64	9,4	2	30	70	300	130	620	160	8,5
ALADDIN JET-120	230	50	80	14,1	3	45	120	300	130	620	160	8,5
ALADDIN JET-180	230	50	110	18,8	4	60	180	300	130	620	160	8,5
ALADDIN JET-270	230	50	140	28,2	6	90	270	300	130	620	160	8,5

Note:

- The power, which consumed by recicator must not exceed the nominal more then 15 %. The value of power below the nominal is not limited.
 - Permissible deviations of linear dimensions ± 10 mm.
- * - reference value



ALADDIN JET

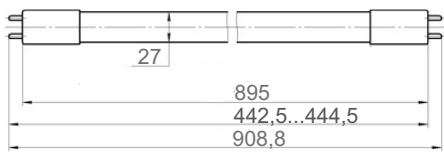
Characteristics of packed irradiators

Type of irradiator	Quantity of irradiators in package, pcs.	Gross weight, kg, no more than	Package dimensions (LxBxH), mm
ALADDIN JET-70	1	9,3	660x330x160
ALADDIN JET-120	1	9,3	660x330x160
ALADDIN JET-180	1	9,3	660x330x160
ALADDIN JET-270	1	9,3	660x330x160

LOW PRESSURE DISCHARGE GERMICIDAL LAMPS








- Germicidal lamps is discharge lamps of low pressure which radiate UV spectrum - C with maximum on wave length of 253,7 nm , which has germicidal effect. Lamps do not generate ozone in dangerous concentrations.
- Lamps are used for destruction of bacteria, viruses, and other simple organisms. They are used for air, water and surface disinfection in hospitals, the food industry and other areas of activity. The lamps are powered by a ballast from an alternating current main with a voltage of 230 ± 10% V, a frequency of 50 ± 0.1% Hz.



Picture 1

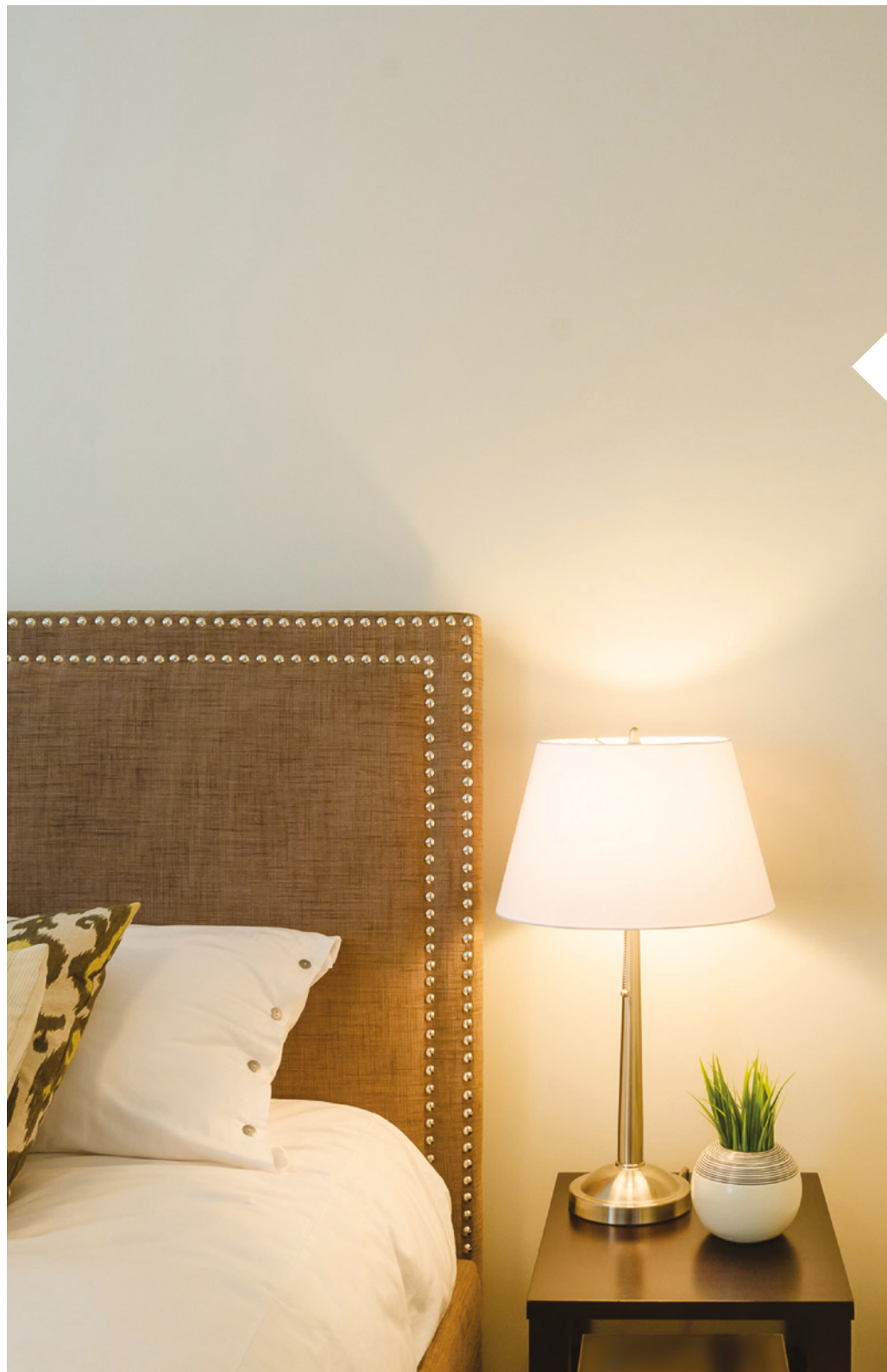
Low pressure discharge germicidal lamps 30

Type of lamp	V	Hz	W	 Bt	 L, MM.	 D, MM.		 N°
30	230	50	30	9,6*	906,6	27	G13	1

* – reference value

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
30	50	9,0	940x260x260



LED filament lamps



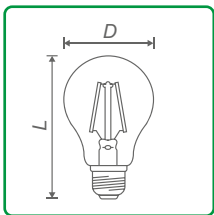
LED Filament lamps () are the LED lamps of new generation. The light source in such lamps is LED thread – filament. These lamps are designed for general and local illumination as well as for decorative and emergency illumination; Having the standard bases these lamps are designed especially for direct replacement of the standard GLS lamps and compact fluorescent lamps. LED Filament lamps () has the excellent performance of an LED lamp which is combined with the comfortable glow and familiar shape of a traditional incandescent lamp. The technical parameters of the SDF make it possible to provide the highest energy efficiency compared to any other sources that are commercially available today. The minimum pulsation coefficient makes the LED filament lamp optimal for use in children's and teenage institutions, providing the most comfortable lighting for the eyes.

Vintage lamps are a great solution to create an interesting cozy interior in retro style. Warmth, softness, a special atmosphere of harmony and peace - ideal for restaurants, cafés, hotels and private houses.

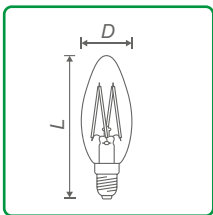
LED FILAMENT LAMPS



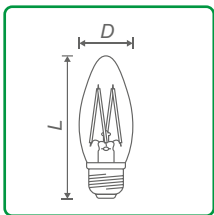
- LED Filament lamps () are the LED lamps of new generation. These lamps are designed for general and local illumination as well as for decorative and emergency illumination.
- Having the standard bases these lamps are designed especially for direct replacement of the standard GLS lamps and compact fluorescent lamps.
- Made according to technical requirements TY 3460-001-99981859-2015, TY3460-003-99981859-2016, TY3460-005-99981859-2016.



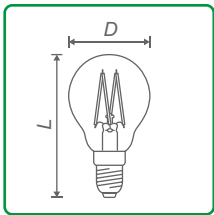
Picture 1



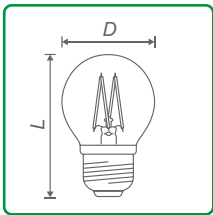
Picture 2



Picture 3




Picture 4



Picture 5

Lamps in bulb A60

Type of lamp	V	W	lm	K	Ra	 L, MM.	 D, MM.		 №
-8-6	230	8	700	2700	>80	109	60	E27	1
-9-8	230	9	900	2700	>80	109	60	E27	1



-5-9




- -5-6

Lamps in bulb B35

Type of lamp	V	W	lm	K	Ra	 L, mm.	 D, mm.		 IP
-5-9	230	5	450	2700	>80	105	35	E14	2
СДФ-5-11	230	5	450	2700	>80	100	35	E27	3

Lamps in bulb A45

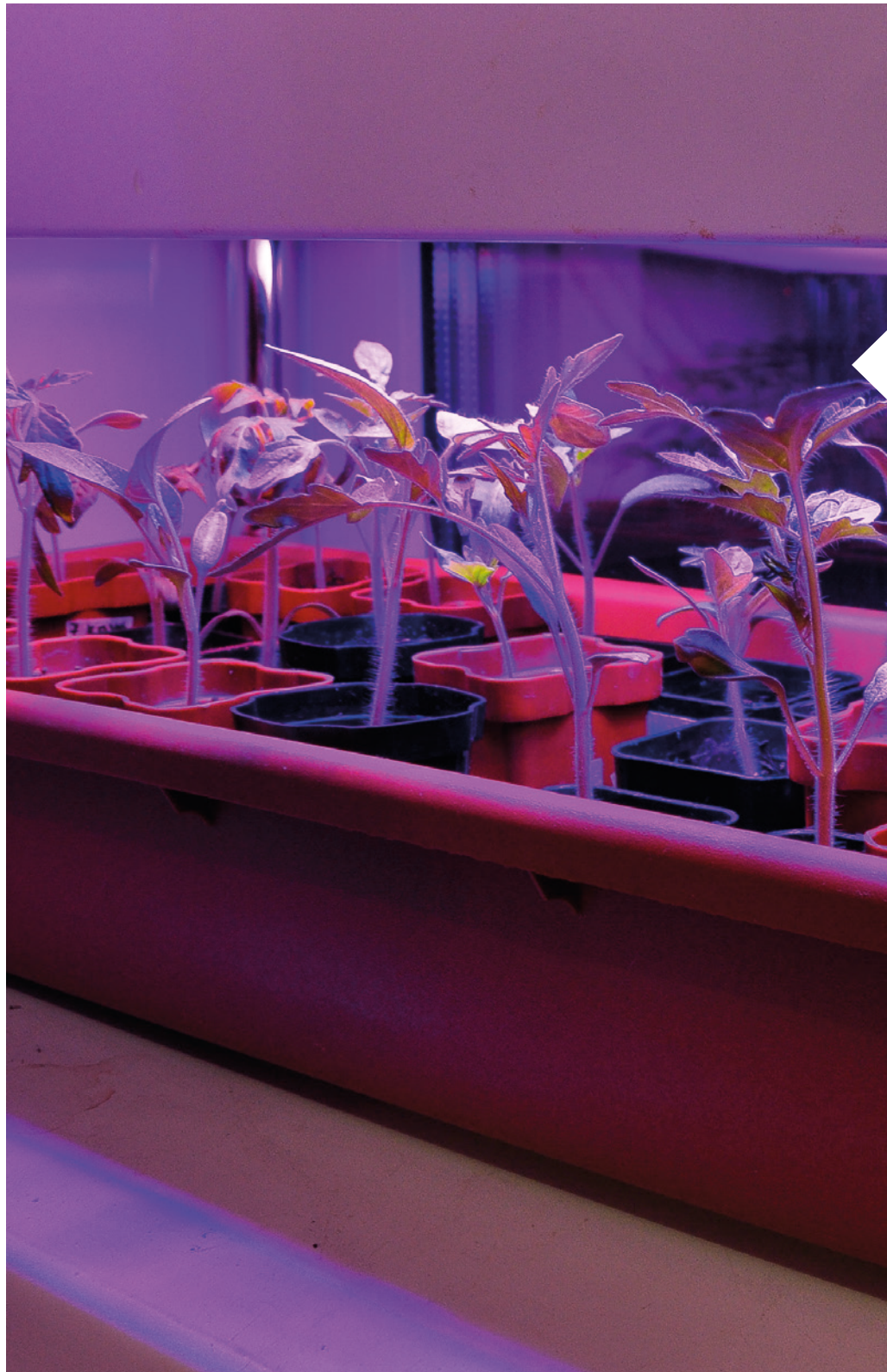
Type of lamp	V	W	lm	K	Ra	 L, mm.	 D, mm.		 IP
- -5-4	230	5	450	2700	>80	80	45	E14	4
- -5-6	230	5	450	2700	>80	80	45	E27	5

Comments for operation

- LED Filament lamps are designed for operation in AC-circuits at nominal voltage $230V \pm 10\%$.
- The lamp is designed for operation at the ambient temperature from minus 40° (in the luminaires closed) to 40° .
- The lamp burning position during its operation is arbitrary.
- Do not use lamps in circuits with dimming.
- Possible to use in schemes with the switch with illumination.
- Non-operating lamps having the life expired need no the disposal.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
Individual package – pack (cuff)			
-8-6	100	5,7	620x315x230
-9-8	100	5,7	620x315x230
-5-9	100	3,0	380x190x220
-5-11	100	3,0	380x190x220
- -5-4	100	3,7	470x240x180
- -5-6	100	3,7	470x240x180



LED grow lights



LED growlights are designed for growing greenhouse crops and seeds, decorative lighting for aquariums and home flowers. The use of a high-quality pulse driver eliminates the pulsation of the light flux. The lamps have a red-blue or full spectrum of radiation with a soft, pinkish-cream tint, which provides accelerated flowering, ripening of fruits and berries, and increased yield.

LED grow light lamps



- LED grow light lamps are designed for radiation of plants in greenhouses and in other cultivation facilities of protected ground, illumination of growwalls, illumination of ornamental plants.
- Lamps have special spectrum of radiation with a dominance of blue and red colors, helping to photochemical processes that improve plant growth and development.
- Designed for operation in AC-circuits at nominal voltage $230V \pm 10\%$ with frequency 50 Hz.
- Working temperature range is from 1°C to $+40^{\circ}\text{C}$.
- Power coefficient – no less then 0,92.
- The work position of lamps is arbitrary.
- Made according to technical requirements НТРД.676269.008 ТУ.

LED grow light lamps

Type of lamp



Lisma Module M1 U
30W Phyto P

30

60

2

Д

Purple

222

144

142

Lisma Module M2 U
30W Phyto P

30

60

2

Ш

Purple

222

144

142

Lisma Module M1 U
30W Phyto F

30

60

2

Д

Full

222

144

142

Lisma Module M2 U
30W Phyto F

30

60

2

Ш

Full

222

144

142

Characteristics of packed LED grow light lamps

Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package – colored package		
Lisma Module M1 U 30W Phyto P	1	240x160x130
Lisma Module M2 U 30W Phyto P	1	240x160x130
Lisma Module M1 U 30W Phyto F	1	240x160x130
Lisma Module M2 U 30W Phyto F	1	240x160x130

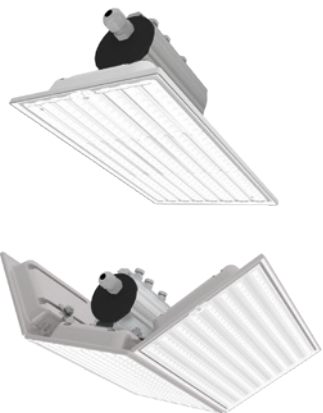


LED modular lamps



LED street lighting lamps are characterized by high reliability in operation, extended service life and significant energy efficiency. They consume ten times less energy than an incandescent lamp and half as much as a fluorescent lamp. In the case of operation only in the evening and at night, the service life of the LED lamp reaches 25 years.

LED MODULAR LAMPS



- Lamps are designed to illuminate roads, streets, squares, parking lots, courtyards, squares in front of malls.
- Power coefficient of lamps is not less than 0,9.
- Efficiency not less than 90%.
- The color rendering index of the luminaires is $Ra \geq 80\%$.
- Luminaires from 27 W to 243 W have cosine and wide luminous flux curves.
- Designed for operation in AC-circuits at nominal voltage $230V \pm 10\%$ with frequency 50 Hz according to GOST 29322.
- Lamps have IP65 protection and designed for work at temperature from -60°C to 40°C .
- Made with console or universal type of fastenings.
- Made according to technical requirements HTPД. 676172.007 ТУ

LED MODULAR LAMPS LISMA BASE – BASE MODULES



LISMA BASE M1/M2 27W

LED modular lamps Lisma Base										
Type of lamps	V	W	lm	K	Ra	KCC	L, mm	B, mm	H, mm	
Lisma Base M1 27W	230	27	4000	4000	≥80	Д	220	140	31	
Lisma Base M2 27W	230	27	4000	4000	≥80	Ш	220	140	31	

Characteristics of packed LED modular lamps

Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Base M1 27W	1	286x161x86
Lisma Base M2 27W	1	286x161x86

LED MODULAR LAMPS LISMA LITE



LISMA LITE M1/M2 K 27W
Picture 1



LISMA LITE M1/M2 U 27W
Picture 2

LED modular lamps Lisma Lite

Type of lamp



Lisma Lite M1 K 27W	230	27	4000	4000	≥80	Д	220	140	114	1
Lisma Lite M1 U 27W	230	27	4000	4000	≥80	Д	220	140	133	2
Lisma Lite M2 K 27W	230	27	4000	4000	≥80	Ш	220	140	114	1
Lisma Lite M2 U 27W	230	27	4000	4000	≥80	Ш	220	140	133	2

Characteristics of packed LED modular lamps

Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Lite M1 K 27W	1	286x161x86
Lisma Lite M1 U 27W	1	286x161x86
Lisma Lite M2 K 27W	1	286x161x86
Lisma Lite M2 U 27W	1	286x161x86

LED MODULAR LAMPS LISMA LITE



LISMA LITE M1 MK-2 54W

Picture 1



LISMA LITE M1 T-1 54W

Picture 2



LISMA LITE M1 MK-3 81W

Picture 3

LED modular lamps Lisma Lite

Type of lamp



Lisma Lite M1 MK-2 54W	230	54	7950	4000	≥ 80	Д	220	221	165	1
Lisma Lite M1 T-1 54W	230	54	7950	4000	≥ 80	Д	427	140	125	2
Lisma Lite M1 MK-3 81W	230	81	12000	4000	≥ 80	Д	220	344	116	3

Characteristics of packed LED modular lamps

Type of lamp

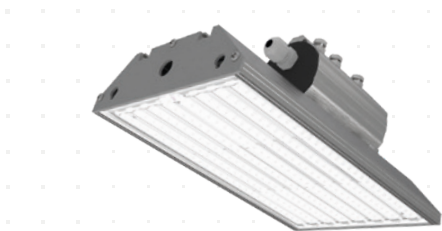
Quantity of lamps in
package, pcs.

Package
dimensions
(LxBxH), mm

Individual package made of cardboard

Lisma Lite M1 MK-2 54W	1	246x186x186
Lisma Lite M1 T-1 54W	1	466x161x126
Lisma Lite M1 MK-3 81W	1	246x376x146

LED MODULAR LAMPS LISMA MODULE



LISMA MODULE M1/M2 K 27W
Picture 1



LISMA MODULE M1/M2 U 27W
Picture 2

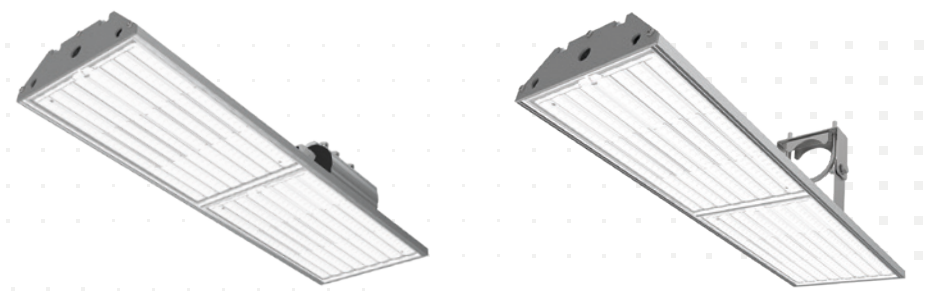
LED modular lamps Lisma Module

Type of lamp	V	W	lm	K	Ra	KCC	L, MM	B, MM	H, MM	IP
Lisma Module M1 K 27W	230	27	4000	4000	≥ 70	Д	222	144	124	1
Lisma Module M1 U 27W	230	27	4000	4000	≥ 70	Д	222	144	142	2
Lisma Module M2 K 27W	230	27	4000	4000	≥ 70	Ш	222	144	124	1
Lisma Module M2 U 27W	230	27	4000	4000	≥ 70	Ш	222	144	142	2

Characteristics of packed LED modular lamps

Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Module M1 K 27W	1	246x161x126
Lisma Module M1 U 27W	1	246x161x126
Lisma Module M2 K 27W	1	246x161x126
Lisma Module M2 U 27W	1	246x161x126

LED MODULAR LAMPS LISMA MODULE



LISMA MODULE M1 K 54W

Picture 1

LISMA MODULE M1 U 54W

Picture 2

LED modular lamps Lisma Module

Type of lamp	V	W	lm	K	Ra	KCC	L, MM	B, MM	H, MM	IP
Lisma Module M1 K 54W	230	54	7950	4000	≥ 70	Д	442	144	124	1
Lisma Module M1 U 54W	230	54	7950	4000	≥ 70	Д	442	144	142	2
Lisma Module M2 K 54W	230	54	7950	4000	≥ 70	Ш	442	144	124	1
Lisma Module M2 U 54W	230	54	7950	4000	≥ 70	Ш	442	144	142	2

Characteristics of packed LED modular lamps

Type of lamp	Quantity of lamps in package. pcs	Package Dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Module M1 K 54W	1	466x161x126
Lisma Module M1 U 54W	1	466x161x126
Lisma Module M2 K 54W	1	466x161x126
Lisma Module M2 U 54W	1	466x161x126

LED MODULAR LAMPS LISMA MODULE



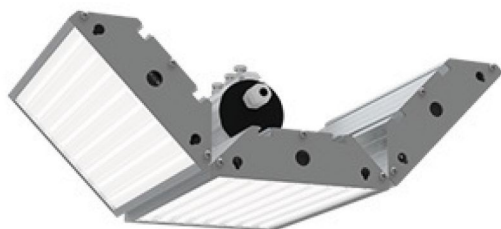
LISMA MODULE M1/M2 K 81W

Picture 1



LISMA MODULE M1/M2 U 81W

Picture 2



LISMA MODULE M1 MK-3 81W

Picture 3

LED modular lamps Lisma Module

Type of lamp



Lisma Module M1 K 81W	230	81	12000	4000	≥ 80	Д	662	144	124	1
Lisma Module M2 K 81W	230	81	12000	4000	≥ 80	Ш	662	144	124	1
Lisma Module M1 U 81W	230	81	12000	4000	≥ 80	Д	662	144	142	2
Lisma Module M2 U 81W	230	81	12000	4000	≥ 80	Ш	662	144	142	2
Lisma Module M1 MK-3 81W	230	81	12000	4000	≥ 80	Д	222	360	125	3

Characteristics of packed LED modular lamps

Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Module M1 K 81W	1	696x161x126
Lisma Module M2 K 81W	1	696x161x126
Lisma Module M1 U 81W	1	696x161x126
Lisma Module M2 U 81W	1	696x161x126
Lisma Module M1 MK-3 81W	1	696x161x126

LED MODULAR LAMPS LISMA MODULE



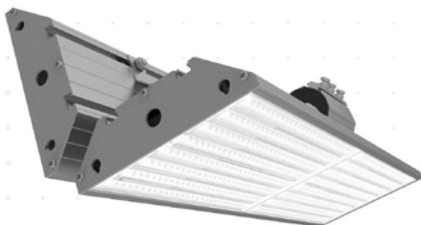
LISMA MODULE M1/M2 K-2 108W

Picture 1



LISMA MODULE M1/M2 U-2 108W

Picture 2



LISMA MODULE M1 MK-2 108W

Picture 3



LISMA MODULE M1 T-2 108W

Picture 4

LED modular lamps Lisma Module

Type of lamp



Lisma Module M1 K-2 108W	230	108	16000	4000	≥ 80	Д	442	288	135	1
Lisma Module M2 K-2 108W	230	108	16000	4000	≥ 80	Ш	442	288	135	1
Lisma Module M1 U-2 108W	230	108	16000	4000	≥ 80	Д	442	288	153	2
Lisma Module M2 U-2 108W	230	108	16000	4000	≥ 80	Ш	442	288	153	2
Lisma Module M1 MK-2 108W	230	108	16000	4000	≥ 80	Д	442	238	173	3
Lisma Module M1 T-2 108W	230	108	16000	4000	≥ 80	Д	455	301	144	4

Characteristics of packed LED modular lamps

Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Module M1 K-2 108W	1	466x306x136
Lisma Module M2 K-2 108W	1	466x306x136
Lisma Module M1 U-2 108W	1	466x306x136
Lisma Module M2 U-2 108W	1	466x306x136
Lisma Module M1 MK-2 108W	1	466x186x186
Lisma Module M1 T-2 108W	1	486x306x126

LED MODULAR LAMPS LISMA MODULE



LISMA MODULE M1/M2 K-2 162W

Picture 1



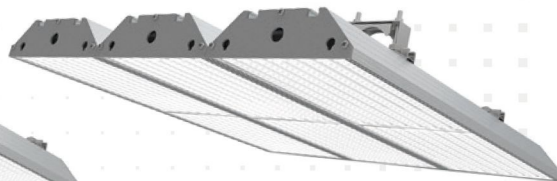
LISMA MODULE M1/M2 U-2 162W

Picture 2



LISMA MODULE M1/M2 K-3 162W

Picture 3



LISMA MODULE M1/M2 U-3 162W

Picture 4

LED modular lamps Lisma Module

Type of lamp

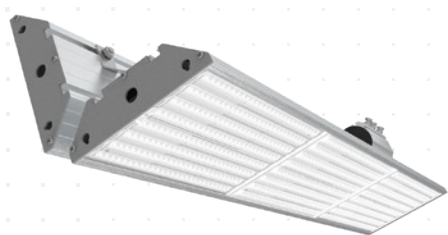
V	W	lm	K	Ra	KCC	L, MM	B, MM	H, MM	IP
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Lisma Module M1 K-2 162W	230	162	23850	4000	≥ 80	Д	662	288	135	1
Lisma Module M2 K-2 162W	230	162	23850	4000	≥ 80	Ш	662	288	135	1
Lisma Module M1 U-2 162W	230	162	23850	4000	≥ 80	Д	662	288	153	2
Lisma Module M2 U-2 162W	230	162	23850	4000	≥ 80	Ш	662	288	153	2
Lisma Module M1 K-3 162W	230	162	23850	4000	≥ 80	Д	442	432	135	3
Lisma Module M2 K-3 162W	230	162	23850	4000	≥ 80	Ш	442	432	135	3
Lisma Module M1 U-3 162W	230	162	23850	4000	≥ 80	Д	442	432	153	4
Lisma Module M2 U-3 162W	230	162	23850	4000	≥ 80	Ш	442	432	153	4

Characteristics of packed LED modular lamps

Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Module M1 K-2 162W	1	696x306x136
Lisma Module M2 K-2 162W	1	696x306x136
Lisma Module M1 U-2 162W	1	696x306x136
Lisma Module M2 U-2 162W	1	696x306x136
Lisma Module M1 K-3 162W	1	466x446x136
Lisma Module M2 K-3 162W	1	466x446x136
Lisma Module M1 U-3 162W	1	466x446x136
Lisma Module M2 U-3 162W	1	466x446x136

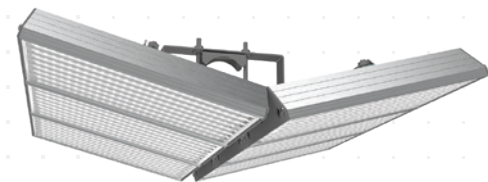
LED MODULAR LAMPS LISMA MODULE



LISMA MODULE M1 MK-2 162W
Picture 1








LISMA MODULE M1 MK-3 162W
Picture 2



LISMA MODULE M1 T-3 162W
Picture 3

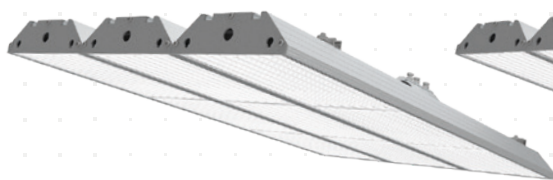
LED modular lamps Lisma Module

Type of lamp	V	W	lm	K	Ra					
Lisma Module M1 MK-2 162W	230	162	23850	4000	≥ 80	Д	662	238	173	1
Lisma Module M1 MK-3 162W	230	162	23850	4000	≥ 80	Д	442	360	125	2
Lisma Module M1 T-3 162W	230	162	23850	4000	≥ 80	Д	455	432	133	3

Characteristics of packed LED modular lamps

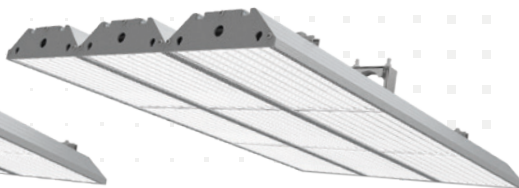
Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Module M1 MK-2 162W	1	696x306x136
Lisma Module M1 MK-3 162W	1	466x376x146
Lisma Module M1 T-3 162W	1	466x446x136

LED MODULAR LAMPS LISMA MODULE



LISMA MODULE M1/M2 K-3 243W

Picture 1



LISMA MODULE M1/M2 U-3 243W

Picture 2



LISMA MODULE M1 MK-3 243W

Picture 3

LED modular lamps Lisma Module

Type of lamp



Lisma Module M1 K-3 243W	230	243	36000	4000	≥ 80	Д	662	432	135	1
Lisma Module M2 K-3 243W	230	243	36000	4000	≥ 80	Ш	662	432	135	1
Lisma Module M1 U-3 243W	230	243	36000	4000	≥ 80	Д	662	432	153	2
Lisma Module M2 U-3 243W	230	243	36000	4000	≥ 80	Ш	662	432	153	2
Lisma Module M1 MK-3 243W	230	243	36000	4000	≥ 80	Д	662	360	125	3

Characteristics of packed LED modular lamps

Type of lamp	Quantity of lamps in package, pcs.	Package dimensions (LxBxH), mm
Individual package made of cardboard		
Lisma Module M1 K-3 243W	1	696x446x136
Lisma Module M2 K-3 243W	1	696x446x136
Lisma Module M1 U-3 243W	1	696x446x136
Lisma Module M2 U-3 243W	1	696x446x136
Lisma Module M1 MK-3 243W	1	696x376x146



GENERAL LIGHTING SERVICE LAMPS

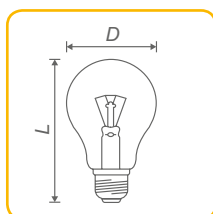


Traditional Incandescent lamps having their wide variety are still the most popular light sources. They have wide range of use and especially needed in household and general illumination. Incandescent lamps provide natural, as close as possible to sunlight. Modern technologies of «Lisma» production allow to guarantee that incandescent lamps have high efficiency and reliability.

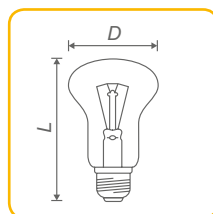
GENERAL LIGHTING SERVICE LAMPS



- Lamps are designed for the household and general illumination.
- The lamps are correspond to the requirements ГОСТ 31998.1-2012 (IEC 60432-1:1999) и ГОСТ Р 52706-2007 (МЭК 60064:1993).
- Average life of the lamps is 1000 hours.
- Energy efficiency class: E – for lamps in transparent bulb, F – for lamps in matte bulb.







Picture 1



Picture 2



Lamps in transparent bulb

Type of lamp	V	W	lm				
Б 125-135-40	125-135	40	450	98	50	E27	1
Б 125-135-60	125-135	60	750	98	50	E27	1
Б 125-135-95	125-135	95	1400	98	50	E27	1
Б 230-25-2	230	25	269	98	50	E27	2
Б 230-40-2	230	40	430	98	50	E27	2
Б 230-40-4	230	40	430	95	50	E27	1
Б 230-60-2	230	60	710	98	50	E27	2
Б 230-60-4	230	60	710	95	50	E27	1
Б 230-75	230	75	935	98	50	E27	2
Б 230-75-4	230	75	935	95	50	E27	1
Б 230-95-2	230	95	1240	98	50	E27	2
Б 230-95-4	230	95	1240	95	50	E27	1



БМ 230-40-4

Lamps in matte bulb

Type of lamp	V	W	lm	↔ L, MM.	∅ D, MM.		 N°
БМ 230-40-4	230	40	374	95	50	E27	1
БМ 230-60-4	230	60	639	95	50	E27	1
БМ 230-75-4	230	75	842	95	50	E27	1
БМ 230-95-4	230	95	1116	95	50	E27	1

Comments for operation

The lamp burning position at operation is arbitrary.

GLS lamps can operate at the ambient temperature from 40° to minus 60° .

To control the brightness of the lamps, it is recommended to use dimmers.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
Б 125-135-40	100	5,5	538x278x221
Б 125-135-60	100	5,5	538x278x221
Б 125-135-95	100	5,5	538x278x221
Б 230-25-2	50	2,8	538x278x120
	100	5,5	538x278x221
Б 230-40-2	50	2,8	538x278x120
	100	5,5	538x278x221
Б 230-60-2	50	2,8	538x278x120
	100	5,5	538x278x221
Б 230-75	50	2,8	538x278x120
	100	5,5	538x278x221
Б 230-95-2	50	2,8	538x278x120
	100	5,5	538x278x221
Б 230-40-4	50	2,8	538x278x120
	100	5,5	538x278x221
Б 230-60-4	50	2,8	538x278x120
	100	5,5	538x278x221
Б 230-75-4	50	2,8	538x278x120
	100	5,5	538x278x221
Б 230-95-4	50	2,8	538x278x120
	100	5,5	538x278x221
БМ 230-40-4	50	2,8	538x278x120
	100	5,5	538x278x221
БМ 230-60-4	50	2,8	538x278x120
	100	5,5	538x278x221
БМ 230-75-4	50	2,8	538x278x120
	100	5,5	538x278x221
БМ 230-95-4	50	2,8	538x278x120
	100	5,5	538x278x221



DECORATIVE INCANDESCENT LAMPS

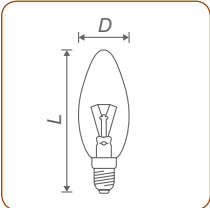


Incandescent decorative lamps are designed for the general, local and decorative illumination of the residential and public premises and applied in chandeliers, standard lamps and wall fittings, wherever their shape could accentuate attractiveness of lighting fitting.

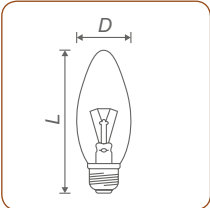
DECORATIVE INCANDESCENT LAMPS



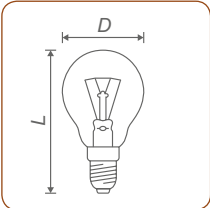
- Incandescent decorative lamps are designed for the general, local and decorative illumination of the residential and public premises and applied in chandeliers, standard lamps and wall fittings, wherever their shape could accentuate attractiveness of lighting fitting.
- Average life of the lamp is 1000 hours.
- Energy efficiency class: E – for lamps in transparent bulb, F – for lamps in matte bulb.



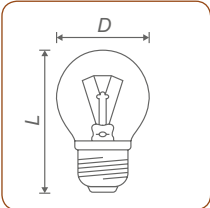
Picture 1



Picture 2







Picture 3



Picture 4

Lamps in transparent bulb

Type of lamp	V	W	lm	 L, MM.	 D, MM.		 N°
ДC 230-25	230	25	200	103	35	E14	1
ДC 230-25	230	25	200	100	35	E27	2
ДC 230-40	230	40	400	103	35	E14	1
ДC 230-40	230	40	400	100	35	E27	2
ДC 230-60	230	60	660	103	35	E14	1
ДC 230-60	230	60	660	100	35	E27	2



ДС 230-40 E27
ДШ 230-40 E14
ДШ 230-40 E27

Lamps in matte bulb

Type of lamp	V	W	lm	↔ L, MM.	∅ D, MM.	☰	💡 №
ДШ 230-25	230	25	200	77	45	E14, E27	3,4
ДШ 230-40	230	40	400	77	45	E14, E27	3,4
ДШ 230-60	230	60	660	77	45	E14, E27	3,4










ДСМ 230-40 E27
ДШМ 230-40 E14
ДШМ 230-40 E27

Lamps in matte bulb

Type of lamp	V	W	lm	↔ L, MM.	∅ D, MM.	☰	💡 №
ДСМ 230-25	230	25	180	103	35	E14	1
ДСМ 230-25	230	25	180	100	35	E27	2

Lamps in matte bulb

Type of lamp							
ДСМ 230-40	230	40	360	103	35	E14	1
ДСМ 230-40	230	40	360	100	35	E27	2
ДСМ 230-60	230	60	594	103	35	E14	1
ДСМ 230-60	230	60	594	100	35	E27	2
ДШМ 230-25	230	25	180	77	45	E14, E27	3,4
ДШМ 230-40	230	40	360	77	45	E14, E27	3,4
ДШМ 230-60	230	60	594	77	45	E14, E27	3,4

Comments for operation:

- Position of lamp at operation for: ДС 230-60, ДШ 230-60, ДСМ 230-60, ДШМ 230-60 – base is vertical “base down” to horizontal; for the rest types position is arbitrary.
- To control the brightness of the lamps, it is recommended to use dimmers.
- The value of the air temperature during lamp operation is from 1 ° to 35 ° .

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ДС 230-25	50	1,8	376x196x126
	100	3,5	388x198x236
ДС 230-40	50	1,8	376x196x126
	100	3,5	388x198x236
ДС 230-60	50	1,8	376x196x126
	100	3,5	388x198x236

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ДШ 230-25	50	1,5	478x248x101
	100	3,0	478x248x181
ДШ 230-40	50	1,5	478x248x101
	100	3,0	478x248x181
ДШ 230-60	50	1,5	478x248x101
	100	3,0	478x248x181
ДСМ 230-25	50	1,8	376x196x126
	100	3,5	388x198x236
ДСМ 230-40	50	1,8	376x196x126
	100	3,5	388x198x236
ДСМ 230-60	50	1,8	376x196x126
	100	3,5	388x198x236
ДШМ 230-25	50	1,5	478x248x101
	100	3,0	478x248x181
ДШМ 230-40	50	1,5	478x248x101
	100	3,0	478x248x181
ДШМ 230-60	50	1,5	478x248x101
	100	3,0	478x248x181



LOCAL LIGHTING INCANDESCENT LAMPS

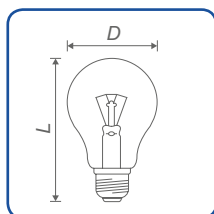


Local Lighting Incandescent lamps of MO type is designed for illumination working places at machinery park and other technological equipment.

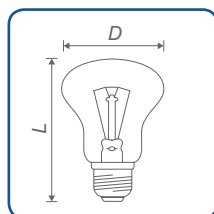
LOCAL LIGHTING INCANDESCENT LAMPS



- Local Lighting Incandescent lamps of MO type is designed for illumination working places at machinery park and other technological equipment.
- Average life of the lamp is 1000 h.







Picture 1



Picture 2

Local lighting incandescent lamps

Type of lamp	V	W	lm	 L, MM.	 D, MM.		 №
MO 12-40	12	40	620	98	55	E 27	1
MO 12-60	12	60	1000	98	55	E 27	1
MO 24-40	24	40	580	98	50	E 27	2
MO 24-60	24	60	980	98	50	E 27	2
MO 36-25	36	25	300	98	50	E 27	2
MO 36-40	36	40	580	98	50	E 27	2
MO 36-60	36	60	950	98	50	E 27	2
MO 36-95	36	95	1490	98	50	E 27	2

Comments for operation:

- The burning position of MO lamps during operation is vertical "base up" with the deviation angle 90° in any plain.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
MO 12-40	120	5,8	578x365x221
MO 12-60	120	5,8	578x365x221
MO 24-40	100	5,5	538x278x221
MO 24-60	100	5,5	538x278x221
MO 36-25	100	5,5	538x278x221
MO 36-40	100	5,5	538x278x221
MO 36-60	100	5,5	538x278x221
MO 36-95	100	5,5	538x278x221



RAILWAY INCANDESCENT LAMPS

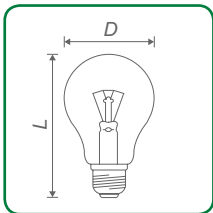


The railway incandescent lamps are used in local and general lighting of the rolling stock at the railway, tramcars and also use as light sources in the traffic lights. Their main advantage is increased resistance to mechanical stress.

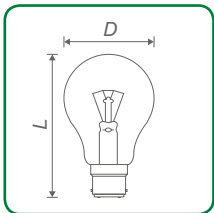
RAILWAY INCANDESCENT LAMPS



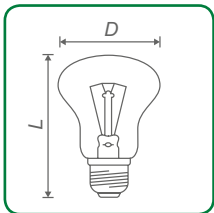
- Lamps of types Ж 54-25, Ж 54-40, Ж 54-60, Ж 80-60, Ж 110-15, Ж 110-25 are used for local and genral lighting of the rolling stock at the railway.
- Lamps of types ЖГ 120-60 are used for lighting of tramcars.
- Lamps of types ЖС 12-15+15, ЖС 12-25+25, ЖС 12-15, ЖС 12-25 are used в as light sources in the traffic lights.



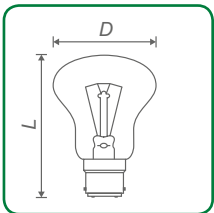
Picture 1



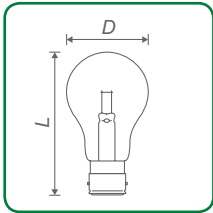
Picture 2



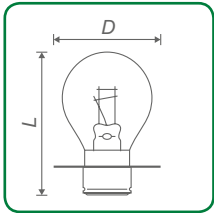
Picture 3



Picture 4







Picture 5











Picture 6

Railway incandescent lamps

Type of lamp	V	W	lm	t ₍₄₎	 L, mm.	 D, mm.		 №
Ж 54-25	54	25	270	1000	75	50	B22d, E27	3,4
Ж 54-40	54	40	480	1000	100	55	B22d, E27	1,2
Ж 54-60	54	60	810	1000	100	55	B22d, E27	1,2
Ж 80-60	80	60	740	1000	100	55	B22d, E27	1,2
Ж 110-15	110	15	80	1000	75	50	B22d, E27	3,4

Railway incandescent lamps

Type of lamp								
Ж 110-25	110	25	185	1000	75	50	B22d, E27	3,4
ЖГ 120-60	120	60	500	1500	75	50	B22d, E27	3,4
ЖС 12-15	12	15	130	1500*	102	55	P24s/17	5
ЖС 12-15+15	12	15/15	130/130	2000** /300**	65	35	P42d/11	6
ЖС 12-25	12	25	230	1500*	102	55	P24s/17	5
ЖС 12-25+25	12	25/25	230/230	2000** /300**	65	35	P42d/11	6

* – minimum life, hours

** – minimum life of the main luminous element and stand-by luminous element

Note: the length of lamp types Ж, ЖГ 120-60 is indicated for lamps with base E27, the length of lamp with base B22d is lesser on 1,5 mm.

Comments for operation:

- Position of lamps Ж и ЖГ (except ЖГ 120-60) at operation is arbitrary, for lamps ЖГ 120-60 is vertical “base up”, with tolerance of angle no more than 15°; lamps ЖС 12-15, ЖС 12-25 - is vertical “base down”, lamps ЖС 12-15+15, ЖС 12-25+25 – in a horizontal position with the fixing notch of the base down.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
Ж 54-25	154	6,5	578x358x191
Ж 54-40	100	5,8	588x293x221
Ж 54-60	100	5,8	588x293x221
Ж 80-60	100	5,8	588x293x221
Ж 110-15	154	6,5	578x358x191

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
Ж 110-25	154	6,5	578x358x191
ЖГ 120-60	154	6,5	578x358x191
ЖС 12-15	120	6,0	578x365x221
ЖС 12-15+15	120	3,5	388x238x161
ЖС 12-25	120	6,0	578x365x221
ЖС 12-25+25	120	3,5	388x238x161
ЖГ 60-65	120	8,0	560x380x250



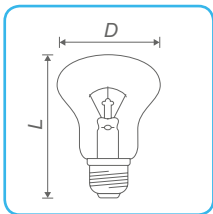
MARINE INCANDESCENT LAMPS

Marine incandescent lamps are designed for application in the ship lights of local and general illumination and in the signal light devices. They are characterized by their high mechanical strength.

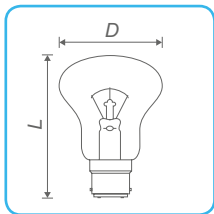
MARINE INCANDESCENT LAMPS



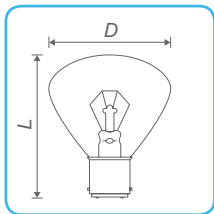
- Marine incandescent lamps are designed for application in the ship lights of local and general illumination and in the signal light devices.
- These lamps are made in clear bulbs and characterized by their high mechanical strength.



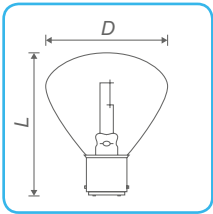
Picture 1



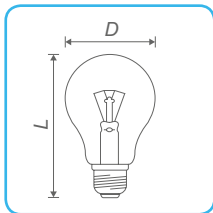
Picture 2



Picture 3







Picture 4











Picture 5

Marine incandescent lamps

Type of lamp	V	W	lm	t ₍₄₎	 L, MM.	 D, MM.		 №
C 13-25	13	25	9*	200	57	36	B15d/18	4
C 24-25-1	24	25	310	1000	75	51	E27, B22d	1,2
C 24-40-1	24	40	530	1000	75	51	E27, B22d	1,2

Marine incandescent lamps

Type of lamp								
C 24-60-1	24	60	850	700	75	51	E27, B22d	1,2
C 26-25	26	25	400	200	57	36	B15d/18	3
C 110-25-1	110	25	180	1000	75	51	E27, B22d	1,2
C 110-40-1	110	40	305	1000	75	51	E27, B22d	1,2
C 110-60-1	110	60	515	700	75	51	E27, B22d	1,2
C 127-25-1	127	25	200	1000	75	51	E27, 22d	1,2
C 127-40-1	127	40	320	1000	75	51	E27, 22d	1,2
C 127-60-1	127	60	580	1000	75	51	E27, B22d	1,2
C 220-25-1	220	25	155	1000	75	51	E27, B22d	1,2
C 220-40-1	220	40	290	1000	75	51	E27, B22d	1,2
C 220-60-1	220	60	450	700	75	51	E27, B22d	1,2
C 24-25-1H	24	25	14*	1000	75	51	E27	1
C 24-40-1H	24	40	14*	1000	75	51	E27	1
C 24-60-1H	24	60	14*	700	75	51	E27	1

Marine incandescent lamps

Type of lamp        

C 110-25-1H	110	25	180	1000	75	51	E27	1
C 110-40-1H	110	40	305	1000	75	51	E27	1
C 110-60-1H	110	60	515	700	75	51	E27	1
C 127-25-1H	127	25	12*	1000	75	51	E27	1
C 127-40-1H	127	40	26*	1000	75	51	E27	1
C 127-60-1H	127	60	32*	1000	75	51	E27	1
C 127-80-2H	127	80	700	1000	90	56	E27	5
C 220-25-1H	220	25	12*	1000	75	51	E27	1
C 220-40-1H	220	40	22*	1000	75	51	E27	1
C 220-60-1H	220	60	38*	700	75	51	E27	1
C 220-80-2H	220	80	700	1000	90	56	E27	5

*Horizontal luminous intensity, cd

“ ” meaning – the transversal incisions made on the thread of E27 base.

Comments for operation:

- Position of lamps at operation C 13-25 – vertical, "base up";

C 24-60-2, C 24-60-2H – vertical, "base down";

for the rest type of lamps is arbitrary.

Charcterisctics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
C 13-25	120	3,1	368x228x191
C 24-25-1	154	8,4	578x358x191
C 24-40-1	154	8,4	578x358x191
C 24-60-1	154	8,4	578x358x191
C 26-25	120	2,5	368x228x191
C 110-25-1	154	5,2	578x358x191
C 110-40-1	154	5,2	578x358x191
C 110-60-1	154	5,2	578x358x191
C 127-25-1	154	5,2	578x358x191
C 127-40-1	154	5,2	578x358x191
C 127-60-1	154	5,2	578x358x191
C 220-25-1	154	5,2	578x358x191
C 220-40-1	154	5,2	578x358x191
C 220-60-1	154	5,2	578x358x191
C 24-25-1H	154	8,4	578x358x191
C 24-40-1H	154	8,4	578x358x191
C 24-60-1H	154	8,4	578x358x191
C 110-25-1H	154	5,2	578x358x191
C 110-40-1H	154	5,2	578x358x191
C 110-60-1H	154	5,2	578x358x191

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
C 127-25-1H	154	5,2	578x358x191
C 127-40-1H	154	5,2	578x358x191
C 127-60-1H	154	5,2	578x358x191
C 127-80-2H	120	6,2	578x365x221
C 220-25-1H	154	5,2	578x358x191
C 220-40-1H	154	5,2	578x358x191
C 220-60-1H	154	5,2	578x358x191
C 220-80-2H	120	6,2	578x365x221



AIRCRAFT INCANDESCENT LAMPS



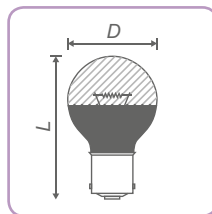
Aircraft incandescent lamps are designed for the interior illumination of the plane cabins as well as for signaling system. These lamps intended to operate at lower pressure of atmosphere and higher relative humidity of air (till 98%). Luminous element of the Aircraft Incandescent lamps has a high mechanical strength, and it is resistant to the strong vibration chokes.

AIRCRAFT INCANDESCENT LAMPS



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Picture 1

Aircraft incandescent lamps

Type of lamp	V	W	lm	cd	t _(1/2)	↔ L, MM.	∅ D, MM.		
CM3 28-24	28	24	225	-	100	51,0	31,0	B15d/18	1

* – Minimum life, hour;

** - overall luminance $\times 10^6$, cd/m²;

*** - axial luminous intensity, cd;

**** - maximum luminous intensity, cd;

***** - maximum light intensity on optical axe with the deviation allowed $\pm 5^\circ$, cd.

Comments for operation:

- Position of lamps at operation is arbitrary.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
CM3 28-24	100	2,00	376x196x101



SEARCHLIGHT INCANDESCENT LAMPS

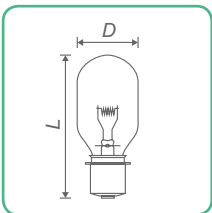


Searchlight Incandescent lamps are designed for usage in the searchlights of various application (the marine, aircraft, railway, theater and others). Due to their overall luminance and focusing bases the efficiency of lighting devices is very high.

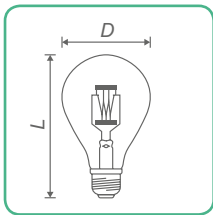
SEARCHLIGHT INCANDESCENT LAMPS



- Searchlight Incandescent lamps are designed for usage in the searchlights of various application (the marine, aircraft, railway, theater and others).
- Due to their overall luminance and focusing bases the efficiency of lighting devices is very high.



Picture 1



Picture 2

Searchlight Incandescent lamps

Type of lamp	V	W	lm	t ₍₄₎	L, MM	D, MM.		Nº
ПЖ 50-500-1	50	500	11100	560	185	68	P40s/41	1
ПЖ 75-600	75	600	13400	250	185	68	P40s/41	1
ПЖ 110-500	110	500	10500	170	140	65	E27	2
ПЖ 220-500	220	500	10500	170	140	65	E27	2

Comments for operation:

Position of lamps at operation:

- ПЖ 50-500-1, ПЖ 75-600, ПЖ 110-500, ПЖ 220-500 - vertical, "base down", with tolerance of angle for vertical no more than $\pm 15^\circ$;

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ПЖ 50-500-1	40	4,8	578x358x191
ПЖ 75-600	40	6,4	578x358x191
ПЖ 110-500	100	8,0	678x338x286
ПЖ 220-500	100	8,0	678x338x286



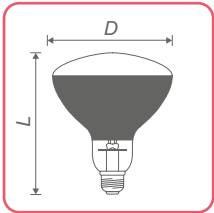
INFRARED METALLIZED INCANDESCENT LAMPS



Infrared metallized incandescent lamps are the effective sources of the directed infrared radiant heat. They are used in the radiators applied for the heating of cattle, foods pasteurization, drying of lacquers and paints as well as for the distillation and roasting processes.

INFRARED METALLIZED INCANDESCENT LAMPS

- Infrared metallized incandescent lamps are the effective sources of the directed infrared radiant heat.
- The lamp of 215-225-175-1 type is used in the radiators applied for the heating of cattle, foods pasteurization, drying of lacquers and paints as well as for the distillation and roasting processes.



Picture 1

Infrared metallized incandescent lamps

Type of lamp



ИК3 215-225-175-1 215-225 175 2350 3500 160 112 E27 1

Comments for operation:

- Position of lamp at operation: ИК3 215-225-175-1 is arbitrary.
- According to ГОСТ IEC 60061-2 standard the temperature on the base surface at operation of the lamp with socket should not be more than 210° , the temperature of the bulb should not be more than 420° .

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ИК3 215-225-175-1	18	4,0	693x348x198



INCANDESCENT LAMPS FOR SPECIAL APPLICATION

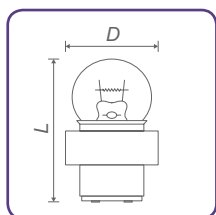


Incandescent lamps for special application are used for the illumination, backlighting, signaling and indication purposes in different installations and devices; for reapeare of devices, microscopes in use; for illumination of underwater works and fishing; in mine locomotive electric headlights. Lamps are resistant to mechanical stress and reliable in operation under non-standard climatic conditions.

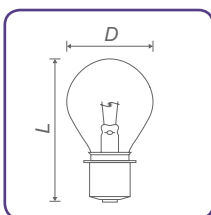
INCANDESCENT LAMPS FOR SPECIAL APPLICATION



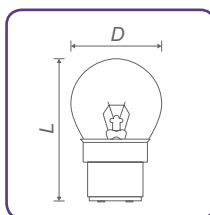
- Incandescent lamps for special application are used for the illumination, backlighting, signaling and indication purposes in different installations and devices.
- Incandescent lamps of 55-15, 8-20 types are used only as Spare Accessories in different lighting fittings and signaling devices.
- Optical incandescent lamps of 6-3 type are applied in the light indication systems of the electric measuring complexes.
- Optical Incandescent lamp of 12-100 type is applied in the optical systems of machinery and different apparatuses as Spare Accessory for microscopes operated during the products repairing.
- The lamp of 40-1,2-1 type is used in the mine locomotive headlights of 1.1 type.
- Incandescent lamp of 60-4,8, type operates in lighting fittings of various applications at higher mechanical and climatic stress.



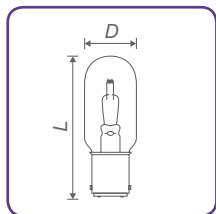
Picture 1



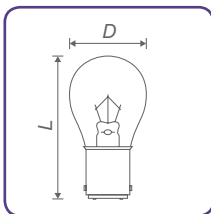
Picture 2



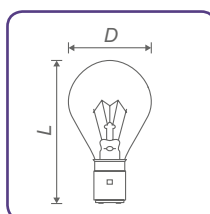
Picture 3



Picture 4



Picture 5



Picture 6

Incandescent lamps for special application

Type of lamp	V	W	lm	t ₍₄₎	L, MM.	D, MM.		Nº
ОП 6-3	6	3	1,5*	1500	34	18	P21d	1
ОП 12-100	12	100	2500	40	88	45	1Φ-C34-1	2
PH 60-4,8	60	4,8	35	430	55	26	B15d/18	5
PH 55-15	55	15	80	1000	60	35	B22d	3
P40-1,2-1	40	1,15**	540	800	80	43	P20d/21	6
PH 8-20	8	20	265	120	58	21	B15d/18	4

* – axial light intensity, cd.

** – amperage at nominal voltage A, no more than.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ОП 6-3	100	1,90	376x196x101
ОП 12-100	110	7,00	523x263x221
PH 55-15	120	4,00	368x228x191
PH 8-20	100	1,45	376x196x101
PH 60-4,8	100	1,45	376x196x101
P 40-1,2-1	120	6,60	535x228x196



HALOGEN INCANDESCENT LAMPS

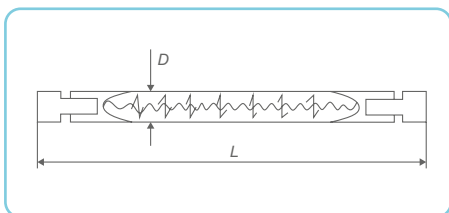


Halogen lamps emit a pleasant white light having the high colour temperature and excellent colour rendering. Due to such light the colour of the objects around us are seemed bright and intensive, and most of them become more shiny and attractive. Halogen lamps do not lose brightness in time, they light steadily, brightly, evenly and saturated.

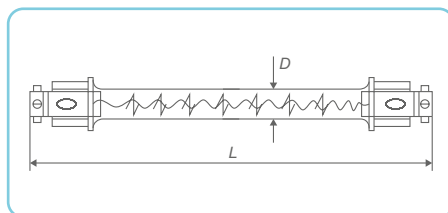
HALOGEN INCANDESCENT LAMPS



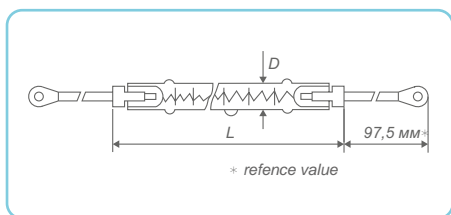
- The lamps of КГ 220-1000-5, КГ 220-1500, КГ 220-2000-4, КГ 220-230-5000 types are designed in the simple optical systems at the railway.
- The lamps of КГ 220-500-1, КГ 220-1000-3, КГ 220-1000-4, КГ 220-2000-3, КГ 220-2000-5 types are designed in the cinematography, television and photo shooting.
- The lamps of КГ 220-230-200, КГ 220-230-300, КГ 220-230-500, КГ 220-500-5, КГ 220-500-6 types are designed for the decoration of the architectural constructions and building facades.
- The lamps of КГП 220-1650-2, КГП 220-1650-3, КГП 220-1750 types are designed to create the temperature in thermal installations.
- The lamp of КГП 220-1500 type is designed to attract fishes during the fishing process on the fishing vessels.



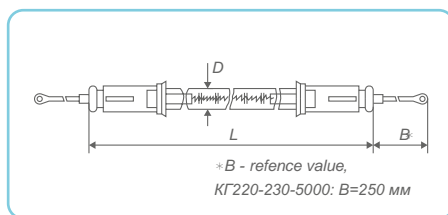
Picture 1



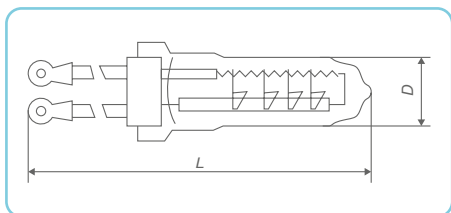
Picture 2



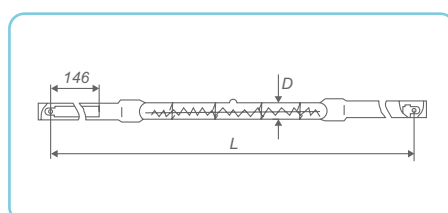
Picture 3



Picture 4



Picture 5



Picture 6

Halogen incandescent lamps

Type of lamp									
КГ 220-230-200	220-230	200	3200	-	2000	119	12	R7s	1
КГ 220-230-300	220-230	300	5000	-	2000	119	12	R7s	1
КГ 220-230-500	220-230	500	9500	-	2000	119	12	R7s	1
КГ 220-500-1	220	500	14000	3200	150	132	11	R7s	1
КГ 220-500-5	220	500	9500	-	1500	119	12	R7s	1
КГ 220-500-6	220	500	9500	-	1500	132	12	R7s	1
КГ 220-1000-3	220	1000	26000	3200	400	180	11	1П8/20	2
КГ 220-1000-4	220	1000	26000	3200	420	180	11	R7s	1
КГ 220-1000-5	220	1000	22000	-	2000	189	12	R7s	1
КГ 220-1500	220	1500	33000	-	2000	254	12	R7s	1
КГ 220-2000-3	220	2000	54900	3200	450	236	11	R7s	1
КГ 220-2000-4	220	2000	44000	-	2000	335	12	R7s	1
КГ 220-2000-5	220	2000	54900	3200	450	262	11	K10s/25	3
КГ 220-230-5000	220-230	5000	110000	-	3000	520	20,5	K27s/96-1	4
КГП 220-1650-2	220	1650	-	2500	3000	625	16	K22d	5
КГП 220-1650-3	220	1650	-	2500	3000	624	16	K22d	5
КГТП 220-1750	220	1750	-	2600	3000	672	16	K22d	5
КГП 220-1500	220	1500	33000	-	700	560	15	K7,9/6,3x0,8	6

Comments for operation:

- The lamp position at operation is horizontal with the deviation of $\pm 4^\circ$ allowed, except: КГТП 220-1750 type is arbitrary; КГП 220-1650-2, КГП 220-1650-3 are "base down".
- The increased voltage reduces the lifetime of the lamps.
- To maintain the halogen cycle, the temperature on the surface of the bulb must be at least 250 °C and must not exceed 800 °C. The temperature on the surface of the stamped blade opposite the middle of the vacuum link of the current input must not exceed 300 °C.

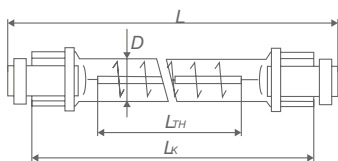
Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
КГ 220-230-200	24	1,10	328x148x141
КГ 220-230-300	24	1,10	328x148x141
КГ 220-230-500	24	1,10	328x148x141
КГ 220-500-1	24	1,10	328x148x141
КГ 220-500-5	24	1,10	328x148x141
КГ 220-500-6	24	1,10	328x148x141
КГ 220-1000-3	20	1,20	233x183x181
КГ 220-1000-4	20	1,20	233x183x181
КГ 220-1000-5	20	1,34	233x183x181
КГ 220-1500	35	2,50	298x238x216
КГ 220-2000-3	35	2,50	298x238x216
КГ 220-2000-4	15	1,80	408x193x146
КГ 220-2000-5	35	2,50	298x238x216
КГ220-230-5000	18	18,00	568x298x151
КГП 220-1650-2	20	5,00	478x183x211
КГП 220-1650-3	20	5,00	478x183x211
КГТП 220-1750	30	6,00	543x238x211
КГП 220-1500	15	3,00	408x193x146

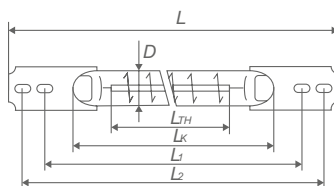
HALOGEN INCANDESCENT LAMPS (THERMAL RADIATORS)



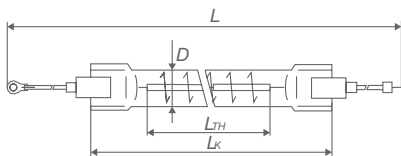
- Halogen lamps (thermal radiators) of КГТ 220-600, КГТ 220-600-1, КГТ 220-1000, КГТ 220-1000-1, КГТ 220-1000-4, КГТ 220-1000-7, КГТ 220-1000-15, КГТ 220-1000-16, КГТ 220-1300, КГТ 220-1300-1, КГТ 220-1800, КГТ 220-2200, КГТ 220-2200-1, КГТ 380-3300, КГТ 380-3300-1, КГТО 220-2500-1, КГТО 220-2500-2 types are the highly efficient sources of infrared radiation, they are applied for the drying, heating, polymerization processes, photocopying as well as for the treatment of plastics in the blowing machines used for production of PET bottles, and other purposes.



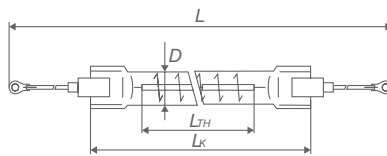
Picture 1



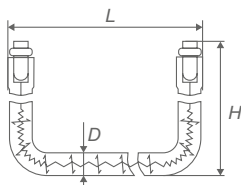
Picture 2



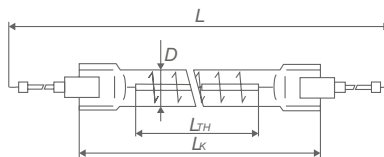
Picture 3



Picture 4









Picture 5



Picture 6

Halogen lamps (thermal radiators)

Type of lamp						
КГТ 220-600	220	600	2000	5000	HPa15x20	1
КГТ 220-600-1**	220	600	2000	5000	П14/63	2
КГТ 220-1000*	220	1000	2600	2400	HPa15x20	1
КГТ 220-1000-1	220	1000	2500	10000	HPa15x20	1
КГТ 220-1000-4	220	100	2500	6000	П14/63	2
КГТ 220-1000-7	220	1000	2500	5000	K10s/25	4
КГТ 220-1300	220	1300	2800	3600	K7s/12	3
КГТ 220-1300-1	220	1300	2800	3600	K7s	6
КГТ 220-1800	220	1800	2800	2400	K7s/12	3
КГТ 220-2200	220	2200	2600	5500	HPa15x20	1
КГТ 220-2200-1	22	2200	2600	5500	П14/63	2
КГТ 380-1350	380	1350	2600	5000	K10s/25	4
КГТ 380-3300	380	3300	2600	5500	HPa15x20	1
КГТ 380-3300-1	380	330	2600	5500	П14/63	2
КГТО 220-2500-1	220	2500	2650	2200	HPa15x20	5
КГТО 220-2500-2	220	2500	2650	2200	HPa15x20	5

* – the lamp with the non-luminous element in the center, its length is 243 mm, the length of the luminous parts are 124 mm and 86 mm at the lamp edges.

** – this is made under individual order.

Type of lamp	Dimensions, mm						
	L	D	H	L _{TH}	L _K	L1	L2
КГТ 220-600	500	12,00	-	430	490	-	-
КГТ 220-600-1	590	12,00	-	430	490	525	560
КГТ 220-1000*	500	12,00	-	*	490	-	-
КГТ 220-1000-1	375	12,00	-	300	360	-	-
КГТ 220-1000-4	435	12,00	-	300	330	368	400
КГТ 220-1000-7	470	11,00	-	160	223	-	-
КГТ 220-1300	580	10,75	-	243	300	-	-
КГТ 220-1300-1	700	10,75	-	243	300	-	-
КГТ 220-1800	680	10,75	-	355	400	-	-
КГТ 220-2200	500	12,00	-	427	490	-	-
КГТ 220-2200-1	590	12,00	-	427	490	525	556
КГТ 380-1350	655	12,00	-	405	475	-	-
КГТ 380-3300	750	12,00	-	675	740	-	-
КГТ 380-3300-1	840	12,00	-	675	740	773	805
КГТО 220-2500-1	440	12,00	110	-	-	-	-
КГТО 220-2500-2	470	12,00	125	-	-	-	-

* - the lamp with the non-luminous element in the center, its length is 243 mm, the length of the luminous parts are 124 mm and 86 mm at the lamp edges.

Comments for operation:

- The lamp position at operation is horizontal with deviation $\pm 4^\circ$ allowed.
- The increased voltage reduces the lifetime of the lamps.
- To maintain the halogen cycle, the temperature on the surface of the bulb must be at least 250 °C and must not exceed 800 °C. The temperature on the surface of the stamped blade opposite the middle of the vacuum link of the current input must not exceed 300 °C.

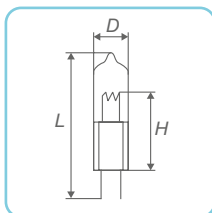
Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
КГТ 220-600	10	2,0	561x221x104
КГТ 220-600-1	20	3,0	561x221x104
КГТ 220-1000	10	2,0	561x221x104
КГТ 220-1000-1	15	2,5	408x193x146
КГТ 220-1000-4	18	3,0	408x193x146
КГТ 220-1000-7	35	3,0	298x238x216
КГТ 220-1300	15	2,5	408x193x146
КГТ 220-1300-1	15	2,5	408x193x146
КГТ 220-1800	18	3,0	483x193x111
КГТ 220-2200	10	3,0	561x221x104
КГТ 220-2200-1	20	3,0	601x371x104
КГТ 380-1350	10	2,5	480x223x108
КГТ 380-3300	10	3,0	768x223x108
КГТ 380-3300-1	20	6,0	878x223x200
КГТО 220-2500-1	10	3,0	577x231x104
КГТО 220-2500-2	10	3,0	577x231x104

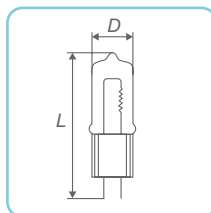
SMALL-SIZED HALOGEN INCANDESCENT LAMPS



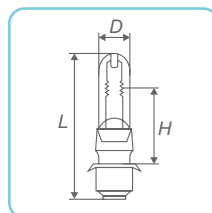
- The lamp of 9-70 type is designed for operation in optical systems of the projection devices and microscopes.
- The lamps of 12-100, 30-300-2 types are designed for operation in the movie projectors.
- The lamp of 12-40, type is used in the medical optic devices and lighting fittings.
- The lamps 220-1100-1, types is used in the theatre lighting fittings.
- The lamps of 75-600, 110-600 types, are designed for usage in the equipment applied for the railway transport.



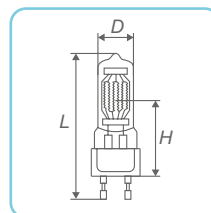
Picture 1



Picture 2








Picture 3



Picture 4

Small-sized halogen incandescent lamps

Type of lamp	V	W	lm	K	t ₍₄₎					
КГМ 9-70	9	70	21*	-	200	44	11	21,0	G5	1
КГМ 12-20	12	20	350	-	2000	35	10,0	-	G4	2
КГМ 12-40	12	40	720	-	130	45	9,5	-	G4	2
КГМ 12-100	12	100	3000	-	85	44	11,0	30,0	G6,35	2
КГМ 30-300-2	30	300	35*	-	55	55	15,0	36,0	G6,35	1
КГМ 75-600	75	600	13400	-	500	135	23,0	60,0	P40s/41	3
КГМ 110-600	110	600	13200	-	500	135	23,0	60,0	P40s/41	3
КГМ 220-1100-1	220	1100	27000	-	250	135	26,0	66,0	G22	4

* – overall luminance x 10⁶; cd/m²

** – minimum productivity, hours

Comment for operation:

• The lamp position at operation for:

- КГМ 9-70, КГМ 12-40, КГМ 12-100 – lamps is vertical, “lead-in–wires down”, the deviation of $\pm 90^\circ$ allowed, and if the lamp burning position is horizontal the lead-in-wires should be in horizontal plain as well;
- КГМ 75-600, КГМ 110-600 is vertical, “base down”;
- КГМ 30-300-2 is vertical;
- КГМ 12-20 is arbitrary.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
КГМ 9-70	20	0,30	233x183x181
КГМ 12-20	20	0,37	233x183x181
КГМ 12-40	20	0,28	233x183x181
КГМ 12-100	20	0,30	233x183x181
КГМ 30-300-2	20	0,42	233x183x181
КГМ 75-600	20	4,00	248x218x226
КГМ 110-600	20	4,00	248x218x226
КГМ 220-1100-1	20	10,00	248x218x226



HIGH PRESSURE SODIUM LAMPS

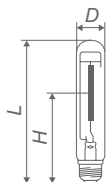


High Pressure Sodium lamps of type are the most energy effective of all the High Pressure Gas Discharge lamps in our days. These lamps are widely applied for illumination of the streets, highways, public gardens, parks and squares as well as for illumination of the industrial territories and other outdoor spaces in the places and there are not too serious requirement for the quality of colour rendering. A new series of high-pressure sodium lamps with improved performance characteristics of the City type and increased luminous efficiency of the type have a higher luminous flux and an extended service life compared to standard sodium lamps. Thanks to new advances in manufacturing technology, higher luminous efficacy and luminous efficacy have been obtained over the lifetime of sodium lamps.

HIGH PRESSURE SODIUM LAMPS WITH HIGHER LIGHT OUTPUT











- New series of the High Pressure Sodium lamps with Higher Light Output of “ ” type which have the operation characteristics improved. Compared with the standard Sodium lamps their luminous flux is higher, and they have longer lifetime up to 48000 hours or 5 or more year of work. Possibility of dimming with use of electronic Start-and-Control device.
- Due to the new achievements developed in production technology the lifetime of sodium lamps is increased and there are the light output indexes become higher and more stable within their full lifetime.
- The high technical performance of the lamps allows to achieve significant savings by reducing the consumption of electrical energy and operating costs for their maintenance.
- Colour temperature: 2000-2200 K.
- Colour rendering index: no more than 25 Ra.
- Lamps are made according to ГОСТ Р 53073 (МЭК 60662:2002) standards.



High Pressure Sodium lamps with Higher Light Output

Type of lamp	W	A	lm	t _(v)	L, MM.	D, MM.	H, MM.	
ДНаТ Супер 50Вт/220В	50	0,76	4400	36000	156	39	102	E27
ДНаТ Супер 70Вт/220В	70	0,98	6700	40000	156	39	102	E27
ДНаТ Супер 100Вт/220В	100	1,2	10700	40000	211	48	132	E40

High Pressure Sodium lamps with Higher Light Output

Type of lamp								
ДHaT Cynep 150Bт/220B	150	1,8	17500	48000	211	48	135	E40
ДHaT Cynep 250Bт/220B	250	3,0	33200	48000	260	48	158	E40
ДHaT Cynep 400Bт/220B	400	4,6	56500	48000	292	48	175	E40
ДHaT Cynep 600Bт/220B	600	6,1	90000	48000	292	48	175	E40
ДHaT Cynep 1000Bт/220B	1000	10,6	130000	24000	383	66	240	E40

Comments for operation:

- The lamps operate at the ambient temperature from 40 to minus 40° . The lamp is started at the circuits voltage of 220 V is occurred within 10 seconds.
- If the voltage at operation will be higher than 220V the lamp life becomes shorter and lamps become invalid untimely.
- The impulse starting unit (ISD) with the impulse amplitude of 3,5-4,0 kV for the lamps from 50 W and 70 W and of 4,5-5,0 kV for the lamps from 100 to 1000 W with appropriate Start-and-Control device.
- It is prohibited to use the lamps the opened luminaires, which could not be able to protect the bulb surface from rainfalls.
- It is prohibited to apply the lamp with damaged(broken) outer bulb in operation.

Attention!

Lamps with the life expired must be recycled as the mercury containing units.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg	Package dimensions (LxBxH), mm	Individual package
ДHaT Cynep 50Bт/220B	30	3,5	278x233x219	Colored package

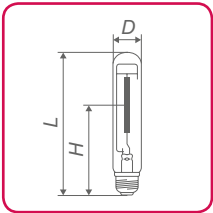
Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg	Package dimensions (LxBxH), mm	Individual package
ДНаТ Супер 70Вт/220В	30	3,5	278x233x219	Colored package
ДНаТ Супер 100Вт/220В	30	5,7	328x276x264	Colored package
ДНаТ Супер 150Вт/220В	30	5,7	328x276x264	Colored package
ДНаТ Супер 250Вт/220В	30	6,6	328x276x314	Colored package
ДНаТ Супер 400Вт/220В	30	7,4	328x276x346	Colored package
ДНаТ Супер 600Вт/220В	30	7,7	328x276x346	Colored package
ДНаТ Супер 1000Вт/220В	24	8,7	444x304x460	Colored package

HIGH PRESSURE SODIUM LAMPS WITH HIGHER LIGHT OUTPUT



- High Pressure Sodium lamps with the Operation Parameters Improved of “City” type which have the operation characteristics improved compared with the Sodium lamps “Standard” their luminous flux is higher, and they have longer lifetime up to 28 000 hours. Possibility of dimming with use of electronic Start-and-Control device.
- Due to the new achievements developed in production technology the lifetime of sodium lamps is increased and there are the light output indexes become higher and more stable within their full lifetime.
- Colour temperature: 2000-2200 K.
- Colour rendering index: no more than 25 Ra.
- Lamps are made according to ГОСТ P 53073 (MЭК 60662:2002) standards.



High Pressure Sodium lamps with the Operation Parameters Improved								
Type of lamp	W	A	lm	t ₍₄₎	L, MM.	Ø D, MM.	H, MM.	
ДHaT City 50Bт/220B	50	0,76	4200	28000	156	39	102	E27
ДHaT City 70Bт/220B	70	0,98	6350	28000	156	39	102	E27

High Pressure Sodium lamps with the Operation Parameters Improved

Type of lamp	W	A	lm	t _(v)	L, MM.	Ø, MM.	H, MM.	
ДHaT City 100Bт/220B	100	1,2	10000	28000	211	48	132	E40
ДHaT City 150Bт/220B	150	1,8	16000	28000	211	48	135	E40
ДHaT City 250Bт/220B	250	3,0	30000	28000	260	48	158	E40
ДHaT City 400Bт/220B	400	4,6	52000	28000	292	48	175	E40
ДHaT City 600Bт/220B	600	6,1	85000	28000	292	48	175	E40

Comments for operation:

- The lamps operate at the ambient temperature from 40 to minus 40° . The lamp is started at the circuits voltage of 220 V is occurred within 10 seconds.
- If the voltage at operation will be higher than 220V the lamp life becomes shorter and lamps become invalid untimely.
- It is prohibited to use the lamps the opened luminaires, which could not be able to protect the bulb surface from rainfalls.
- It is prohibited to apply the lamp with damaged(broken) outer bulb in operation.

Attention!

Lamps with the life expired must be recycled as the mercury containing units.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg	Package dimensions (LxBxH), mm	Individual package
ДHaT City 100Bт/220B	30	5,7	328x276x264	Colored package
ДHaT City 150Bт/220B	30	5,7	328x276x264	Colored package

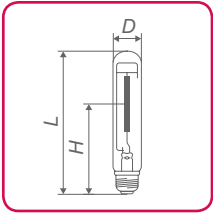
Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg	Package dimensions (LxBxH), mm	Individual package
ДHaT City 250Bт/220B	30	6,6	328x276x314	Colored package
ДHaT City 400Bт/220B	30	7,4	328x276x346	Colored package
ДHaT City 600Bт/220B	30	7,7	328x276x346	Colored package





HIGH PRESSURE SODIUM LAMPS



- Standard High Pressure Sodium lamps are still the most popular light sources among the other types of High Pressure Sodium lamps. Possibility of dimming with use of electronic Start-and-Control device.
- Colour temperature: 2000-2200 K.
- Colour rendering index: no more than 25 Ra.
- Lamps are made according to ГОСТ P 53073 (МЭК 60662:2002) standard.



High Pressure Sodium lamps

Type of lamp	W	A	lm	t ₍₄₎	 L, mm.	 D, mm.	 H, mm.	
ДHaT 70-1M	70	0,98	6 300	20 000	156	39	102	E27
ДHaT 100-1M	100	1,2	10 000	20 000	211	48	132	E40
ДHaT 150-1M	150	1,8	15 750	20 000	211	48	135	E40
ДHaT 250-5M	250	3,0	30 000	24 000	260	48	158	E40
ДHaT 400-5M	400	4,6	52 000	24 000	292	48	175	E40
ДHaT 600-M	600	6,1	81 000	24 000	292	48	175	E40

Comments for operation:

- The lamps operate at the ambient temperature from 40 to minus 40° . The lamp is started at the circuits voltage of 220 V is occurred within 1 minute.

- The reignition of lamp should be no earlier than in 10 minutes.
- If the voltage at operation will be higher than 220V the lamp life becomes shorter and lamps become invalid untimely.
- The lamp position at operation is arbitrary.
- It is prohibited to use the lamps the opened luminaires, which could not be able to protect the bulb surface from rainfalls.
- It is prohibited to apply the lamp with damaged(broken) outer bulb in operation.

Attention!

Lamps with the life expired must be recycled as the mercury containing units.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ДHaT 70-1M	60	5,0	230x230x370
ДHaT 100-1M	30	5,0	230x280x280
ДHaT 150-1M	30	5,0	230x280x280
ДHaT 250-5M	30	5,5	230x280x310
ДHaT 400-5M	30	6,0	230x280x340
ДHaT 600 M	30	7,0	230x280x360



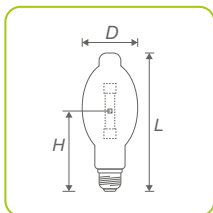
METAL HALIDE LAMPS

In spite of the relatively short period of time passed from their creation these lamps became stand out among other light sources. Its advantages are high light output , high-quality color reproduction, high power density of radiation and high lifetime make them irreplaceable in some areas of applications requiring the correct colour rendering.

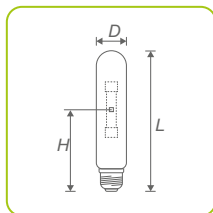
HIGH PRESSURE DISCHARGE METAL HALIDE LAMPS



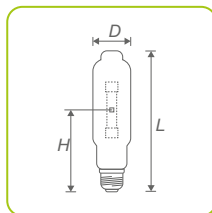
- Metal Halide lamps of 250-7, 400-7, 700-5, 1000-5 types made in elliptical bulb and of 250-6, 400-6, 700-6, 1000-6, 2000-6, types made in cylindrical bulb are combine their high rendering and excellent colour properties when they are applied for general lighting. These lamps are designed for illumination of outdoor spaces, industrial premises providing the good quality of colour rendering.
- Colour temperature=4200 K, Colour rendering index is no less then 80 Ra.
- The lamps of 250-6, 250-7, 400-6, 400-7, 700-5, 700-6 types are turned on AC circuits, at frequency of 50 Hz and voltage of 220 with the proper start-and-control devices (SCD) according to ГОСТ IEC 60922 and ГОСТ Р МЭК 60923 standards and with impulse starting device (ISD) according to ГОСТ IEC 60926 и ГОСТ Р МЭК 927 standards on 220 V accordingly.
- The lamps of 1000-6, 2000-6, types and turned on AC circuits, at frequency of 50 Hz, voltage of 380 V with the start-and-control devices (SCD) according to ГОСТ IEC 60922 and ГОСТ Р МЭК 60923 standards and with the impulse(ISD) according to ГОСТ IEC 60926 и ГОСТ Р МЭК 927 standards on 380 V.
- The lamps correspond to ГОСТ 31948 (IEC 62035:1999) standard per the safety requirements.



Picture 1



Picture 2



Picture 3

High pressure discharge metal halide lamps

Type of lamp	V	A	W	lm	t ₍₄₎	L, MM.	D, MM.	H, MM.		N°
ДРИ 250-6	220	2,15	250	24750	6000	257	48	158*	E40	2
ДРИ 250-7	220	2,15	250	24750	10000	227	91	142*	E40	1
ДРИ 400-6	220	3,3	400	39600	6000	275	48	175*	E40	2
ДРИ 400-7	220	3,3	400	39600	10000	290	122	185*	E40	1
ДРИ 700-5	220	6,0	700	69300	9000	370	152	240*	E40	1
ДРИ 1000-6	380	4,7	1000	103000	6000	345	80	220*	E40	3
ДРИ 2000-6	380	9,2	2000	200000	2000	430	100	255*	E40	3

* height of the light center

Comments for operation:

- The lamp design allows it to operate at the ambient temperature from 40° to minus 45° .
- Starting of lamp at the circuits voltage of 220 (380) V depending on the start-and-control device SCD applicably must occur within 1 minute.
- Restarting of the lamps after their disconnection must be performed not earlier than:
 - 15 minutes for the lamps of 250, 400, 700 and 1000 W;
 - 20 minutes for the lamps of 2000 W.
- Positions at operation are:
 - arbitrary for the lamps of 250-7, 400-7 700-5 types;
 - horizontal with the deviation of $\pm 60^\circ$ allowed for the lamps of 250-6, 400-6, 700-6, 1000-6, 2000-6.
- During operation there should be the following base temperatures in lighting fittings: for the lamp of 2000-6 type – not more than 260° at the circuits voltage of 380 V, for all the other lamps – not more than 230° at the circuit voltage of 242 (418) V.
- The glass bulb temperature on the level of light center must not be more than 480° for the lamps with elliptical shape of bulb, and 550° for the lamps with tubular shape of bulb at the circuits voltage of 242 V or 418 V
- Then lamps should operate with the ceramic threaded bases of 40

-01 type according to 16-675.060 requirement or with the sockets of other types designed for operation in of the impulse starting schemes.

- If the voltage will be higher than the nominal the lamp life becomes shorter and lamps become invalid untimely.
- It is prohibited to use the lamps in the opened luminaires, which could not be able to protect the bulb surface from rainfalls.
- It is prohibited to apply the lamp with damaged(broken) outer bulb in operation.

Attention!

Lamps with the life expired must be recycled as the mercury containing units.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ДРИ 250-6	30	12,0	328x276x314
ДРИ 250-7	21	11,5	786x346x289
ДРИ 400-6	30	13,0	328x276x346
ДРИ 400-7	18	13,0	794x401x354
ДРИ 700-5	8	8,0	736x376x434
ДРИ 1000-6	18	15,0	706x361x406
ДРИ 2000-6	18	18,0	754x385x499



HIGH PRESSURE MERCURY LAMPS

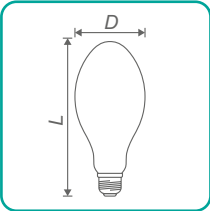





High Pressure Mercury Arc lamps are used widely for illumination of the streets, outdoor areas and industrial premises. Lamps are characterized with the high light output and long lifetime. Their area of application needs no the high colour rendering required.

HIGH PRESSURE MERCURY LAMPS



- High Pressure Mercury Arc lamps of 125, 250, 400, 700, 700, 1000 types are used widely for illumination of the streets, outdoor areas and industrial premises. Lamps of this type are characterized with the high light output and long lifetime.
- Their application needs no the high colour rendering required. Colour temperature of the lamp radiation is not less than 4000K and their Colour rendering index is not less than 35 Ra.
- Lamps of 125, 250, 400, 700, 700, 1000 types operate in AC circuits 220V, 50 Hz and apply the start-and-control devices(SCD) compliant.
- The Lamps correspond to ГОСТ Р 53074-2008 (МЭК 60188:2001) and ГОСТ 31948-2012 (IEC 62035:199) standards per the safety requirements.



High Pressure Mercury Arc Lamps						
Type of lamp	W	lm	t ₍₄₎	 L, mm.	 D, mm.	
ДРЛ 125	125	6600	20000	178	74	E27
ДРЛ 250М	250	14300	20000	210	76	E40
ДРЛ 400М	400	24200	10000	250	91	E40
ДРЛ 700М	700	42350	15000	330	141	E40
ДРЛ 700	700	42350	20000	355	152	E40
ДРЛ 1000	1000	60500	18000	375	152	E40

Comments for operation.:

- Lamps are designed for operation at the ambient temperature from 40° to minus 40° .
- Starting of lamp at nominal mains voltage must occur within:
 - 1 minute, at the ambient temperature from 40° to minus 25° ;
 - 5 minutes, at the ambient temperature from minus 25° to minus 40° for the lamps of 125 type.
- For the lamps of 250 , 400 , 700 , 700 and 1000 type at the ambi-ent temperature from minus 25° to minus 40° it is necessary to use the special start-and-control devices.
- Lamps of 250 , 400 700 types must operate in the closed luminaires only, which could protect the bulb surface from rainfall.
- If the lamp voltage at operation is more than 220 V the lamp life is reduced quickly, and such lamps become invalid untimely.
- It is prohibited to apply the lamp with damaged(broken) outer bulb in operation.

Attention!

Lamps with the life expired must be recycled as the mercury containing units.

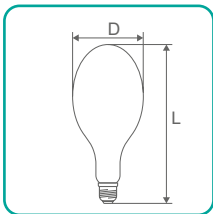
Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ДРЛ 125	21	3,0	554x246x195
ДРЛ 250M	21	3,5	554x246x208
ДРЛ 400M	32	7,5	743x379x245
ДРЛ 700M	10	5,2	650x255x310
ДРЛ 700	10	4.5	776x320x426
ДРЛ 1000	10	5,5	780x320x390




HIGH PRESSURE DESCHARGE BLENDED MERCURY LAMPS



- High Pressure Mercury Arc lamps of 160, 250, 500 and 750-1 types are the light sources of blended light. This lamp is made with the tungsten coil applying as the ballast resistance and operates without start-and-control devices. These lamps are designed for vari-ous purposes including the irradiation of plants in greenhouses.
- These lamps are correspond to ГОСТ Р 53074-2008 (МЭК 60188:2001) и ГОСТ 31948-2012 (IEC 62035:1999) standards per the safety requirement.



High Pressure Mercury Arc Lamps

Type of lamp	W	lm	t ₍₄₎	 L, MM.	 D, MM.	
ДРВ 160	160	2500	3000	178	76	E27
ДРВ 250	250	4600	3000	228	91	E40
ДРВ 500	500	12250	3000	292	122	E40
ДРВ 750-1	750	22000	3000	357	152	E40

Comments for operation:

- These lamps operate at the ambient temperature from 40 to minus 40° .
- Starting of 160, 250, 500, 750-1 lamps at nominal mains voltage of 220V must occur within 1 minute from the moment of the voltage appliance to lamp at the ambient temperature from 40° to minus 25° and within 5 minutes(and not more) at the temperature from minus 25° to minus 40° .

- Position of lamps at operation is arbitrary, for 750-1 lamp is vertical “base up”.
- If the lamp voltage at operation is more than 200 V the lamp life is reduced quickly, and such lamps become invalid untimely.
- It is prohibited to use the lamps in the opened luminaires, must operate in the closed luminaires only, which could protect the bulb surface from rainfall.
- It is prohibited to apply the lamp with damaged(broken) outer bulb in operation.

Attention!

Lamps with the life expired must be recycled as the mercury containing units.

Characteristics of packed lamps

Type of lamp	Quantity of lamps in package, pcs.	Gross weight, kg no more than	Package dimensions (LxBxH), mm
ДРВ 160	21	3,5	543x238x211
ДРВ 250	32	6,4	743x379x245
ДРВ 500	18	5,7	743x375x310
ДРВ 750-1	10	5,4	780x320x390



THERMAL RADIATORS FOR VARIOUS APPLICATION

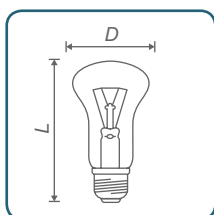


Thermal radiators are designed for creation of heating flow in the irradiative installments applied for agriculture, industry and scientific investigations. The thermal radiators are applied in veterinary clinics, zoological gardens in the drying technological processes. Thermal radiators are used for universal application. They are easy for installment and maintaining. Thermal radiators are the units of high efficiency, and their environmental safety is maximum.

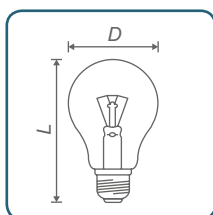
THERMAL RADIATORS FOR VARIOUS APPLICATION



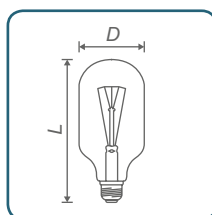
- Thermal radiators are designed for creation of heating flow in the irradiative installments applied for agriculture, industry and scientific investigations.
- The thermal radiators are applied in veterinary clinics, zoological gardens in the drying technological processes.
- Thermal radiators are used for universal application.
- Thermal radiators are the units of high efficiency, and their environmental safety is maximum.
- Their life is 1000 hours.



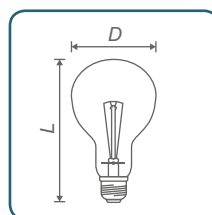
Picture 1



Picture 2





Picture 3










Picture 4

Thermal radiators for various application

Type of thermal radiator	V	W	W ккал/ч	↔ L, MM.	∅ D, MM.		 N°
T 230-25-2	230	25	21,5	98	51	E27	1
T 230-40-2	230	40	34,0	98	51	E27	1
T 230-40-4	230	40	34,0	95	51	E27	2
T 230-60-2	230	60	51,5	98	51	E27	1
T 230-60-4	230	60	51,5	95	51	E27	2
T 230-75	230	75	64,4	98	51	E27	1
T 230-75-4	230	75	64,4	95	51	E27	2

Thermal radiators for various application

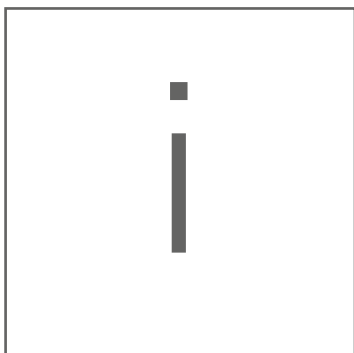
Type of thermal radiator							
T 230-100-2	230	100	85,9	98	51	E27	1
T 230-100-4	230	100	85,9	95	51	E27	2
T 230-150	230	150	129,0	125	66	E27	2
T 240-150	240	150	129,0	125	66	E27	2
T 230-200	230	200	172,0	125	66	E27	2
T 220-230-300-2	220-230	300	258,0	140	69	E27	2

Comments for operation:

- Thermal radiators are designed for operation at the ambient temperature from 40° to minus 60° .
- Position of thermal radiators at the burning is arbitrary.

Charactreistics of packed radiators

Type of radiator	Quantity of radiators in package, pcs.	Gross weight, kg, no more than	Package dimensions (LxBxH), mm
T 230-25-2	100	5,5	538x278x221
T 230-40-2	100	5,5	538x278x221
T 230-40-4	100	5,5	538x278x221
T 230-60-2	100	5,5	538x278x221
T 230-60-4	100	5,5	538x278x221
T 230-75	100	5,5	538x278x221
T 230-75-4	100	5,5	538x278x221
T 230-100-2	100	5,5	538x278x221
T 230-100-4	100	5,5	538x278x221
T 230-150	100	5,5	678x338x286
T 240-150	100	5,5	678x338x286
T 230-200	100	5,5	678x338x286
T 220-230-300-2	90	5,5	648x358x301



ANNEX

- List of technical conditions
- List of analogues by manufacturer

List of technical conditions

Designation	Name	Type of lamp(product)
HTPД.676172.007 ТУ	LED Lamps for outdoor lighting	Lisma Base M1 27W Lisma Lite M1 K 27W Lisma Lite M1 U 27W Lisma Lite M1 MK-2 54W Lisma Lite M1 T-1 54W Lisma Lite M1 MK-3 81W Lisma Module M1 K 27W Lisma Module M1 U 27W Lisma Module M1 K 54W Lisma Module M1 U 54W Lisma Module M1 T-1 54W Lisma Module M1 MK-2 54W Lisma Module M1 K 81W Lisma Module M1 U 81W Lisma Module M1 MK-3 81W Lisma Module M1 K-2 108W Lisma Module M1 U-2 108W Lisma Module M1 MK-2 108W Lisma Module M1 T-2 108W Lisma Module M1 K-2 162W Lisma Module M1 U-2 162W Lisma Module M1 K-3 162W Lisma Module M1 U-3 162W Lisma Module M1 MK-2 162W Lisma Module M1 MK-3 162W Lisma Module M1 T-3 162W Lisma Module M1 K-3 243W Lisma Module M1 U-3 243W Lisma Module M1 MK-3 243W Lisma Base M2 27W Lisma Lite M2 K 27W Lisma Lite M2 U 27W Lisma Module M2 K 27W Lisma Module M2 U 27W Lisma Module M2 K 54W Lisma Module M2 U 54W Lisma Module M2 K 81W Lisma Module M2 U 81W Lisma Module M2 K-2 108W Lisma Module M2 U-2 108W Lisma Module M2 K-2 162W Lisma Module M2 U-2 162W Lisma Module M2 K-3 162W Lisma Module M2 U-3 162W Lisma Module M2 K-3 243W Lisma Module M2 U-3 243W

List of technical conditions

Designation	Name	Type of lamp(product)
ТУ 3460-001-99981859-2015	LED Filament lamps	СДФ-8-7 СДФ-9-8 СДФ-5-9 СДФ-5-11
ТУ 3460-003-99981859-2016	Decorative LED Filament lamps	СДФ-ДШ-5-4 СДФ-ДШ-5-6
ТУ 16-2002 ИФМР.675310. 013 ТУ	General Lighting Service lamps	Б 125-135-40, Б 125-135-60, Б 125-135-95 Б 230-25-2, Б 230-40-2 Б 230-60-2, Б 230-75
ТУ16-2004 ИФМР.675310.014 ТУ	General Lighting Service lamps	Б 230-25-1, Б 230-40-1 Б 230-60-1, Б 230-75-1 Б 230-25-4, Б 230-40-4 Б 230-60-4, Б 230-75-4
ТУ 3466-003-99981859-2010	General Lighting Service lamps	Б 230-95-1, Б 230-95-2, Б 230-95-4
ТУ16-93 ИФМР.675000.011 ТУ	Incandescent Lamps for Various Application	PH 220-230-300-2 PH 220-230-750 PH 220-230-1000 PH 230-240-300 PH 230-240-500
ТУ16-2005 ИФМР.675310.015 ТУ	Decorative Incandescent lamps	ДС 230-25 (Е14, Е27) ДС 230-40 (Е14, Е27) ДС 230-60 (Е14, Е27) ДШ 230-25 (Е14, Е27) ДШ 230-40 (Е14, Е27) ДШ 230-60 (Е14, Е27)

List of technical conditions

Designation	Name	Type of lamp(product)
ГОСТ 1608-88	Marine Incandescent lamps	C 13-25 C 24-25-1, -1H C 24-40-1, -1H C 24-60-1,-1H C 110-25-1, -1H C110-40-1,-1H C110-60-1, -1H C 127-25-1, -1H C 127-40-1, -1H C127-60-1, -1H C 220-25-1, -1H C 220-40-1, -1H C 220-60-1, -1H
ТУ16-545.295-80	Small-sized Marine Incandescent lamp of 26-25 type	C 26-25
ТУ3466-008-99981859-2012	Marine Incandescent lamps	C 127-80-2H C 220-80-2H
ТУ16-535.640-78	Aircraft Incandescent lamps	CM3 28-24
ТУ16-87 ИФМР.675000.003 ТУ	Searchlight Incandescent lamps	ПЖ 50-500-1, ПЖ 75-600
ТУ16-87 ИФМР.675000.005 ТУ	Searchlight Incandescent lamps	ПЖ 110-500 ПЖ 220-500
ТУ16-94 ИФМР.675410.002 ТУ	Searchlight Incandescent lamps	ПЖ 110-3700 ПЖ 110-5000
ТУ16-87 ИФМР.675438.001 ТУ	Searchlight Incandescent lamps	ПЖ 220-400, ПЖ 220-600 ПЖ 220-1100
ТУ16-675.009-83	Halogen Incandescent lamps	КГ 220-1000-5 КГ 220-1500 КГ 220-2000-4
ТУ16-90 ИФМР.675000.009 ТУ	Halogen Incandescent lamps for TV and Cinematography	КГ 220-500-1 КГ 220-1000-3 КГ 220-1000-4 КГ 220-2000-3 КГ 220-2000-5

List of technical conditions

Designation	Name	Type of lamp(product)
ТУ16-94 ИФМР.675330.001 ТУ	Halogen Incandescent lamps	КГ 220-500-5 КГ 220-500-6 КГ 220-230-100 КГ 220-230-150 КГ 220-230-150-1 КГ 220-230-200 КГ 220-230-300 КГ 220-230-500
ТУ 16-2002 ИФМР.675410.003 ТУ	Infrared metallized incandescent lamps	ИК3215-225-175-1
ТУ16-92 ИФМР.675310.003 ТУ	Infrared Incandescent lamps	МО 12-40, МО 12-60 МО 24-40, МО 24-60, МО 36-25, МО 36-40, МО 36-60, МО 36-95
ТУ16-545.256-79	Halogen Incandescent lamps	КГ 220-230-5000
ТУ16-94 ИФМР.675000.012 ТУ	Medium-sized Railway Incandescent lamps	Ж 54-25 Ж 54-40 Ж 54-60 Ж 80-60 Ж 110-15 Ж 110-25
ТУ16-95 ИФМР.675312.011 ТУ	Medium-sized Railway Incandescent lamps	ЖГ 60-65
ТУ16-535.370-75	Tram Incandescent lamp of 120-60 type	ЖГ 120-60
ТУ16-675.217-87 (ИФМР.675000.002 ТУ)	Small-sizes and Medium-sized Incandescent lamps for Traffic Lights and Railway	12-15, 12-25, 12-15+15, 12-25+25
ТУ16-545.225-78	Halogen incandescent lamps with the arbitrary burning position	КГП 220-1650-2 КГП 220-1650-3 КГТП 220-1750
ТУ16-90 ИФМР.67436.008 ТУ	Halogen Incandescent lamps	КГП 220-1500

List of technical conditions

Designation	Name	Type of lamp(product)
ТУ16-535.229-75	Halogen Incandescent lamps of 9-70 type	КГМ 9-70
ТУ16-535.261-76	Halogen Incandescent lamp of 12-40 type	КГМ 12-40
ТУ16-92 ИФМР.675000.010 ТУ	Infrared Halogen Incandescent lamps	КГТ 220-600 КГТ 220-1000 КГТ 220-1000-1 КГТ 220-1000-4 КГТ 220-1000-7 КГТ 220-1300 КГТ 220-1300-1 КГТ 220-1800 КГТ 220-2200 КГТ 380-3300 КГТ 380-3300-1 КГТО 220-2500-1 КГТО 220-2500-2
ТУ16-2004 ИФМР.675436.027 ТУ	Infrared Halogen Incandescent lamp of 220-2200-1 type	КГТ 220-2200-1
ТУ16-90 ИФМР.675230.001 ТУ	Small-sized Halogen Incandescent lamps	КГМ 12-20
ТУ16-545.407-82	Small-sized Halogen Incandescent lamp of 220-1100-1 type	КГМ 220-1100-1
ТУ16-88 ИКВА.675162.009ТУ	Miniature Incandescent lamp of 6,3-15 type	КГМН 6,3-15
ТУ16-93 ИФМР.675141.011 ТУ	Miniature Halogen Incandescent lamps	КГМН 6,3-15-1
ТУ16-535.421-75	Medium-sized Mine Incandescent lamps	Р 40-1,2-1
ТУ16-97 ИФМР.675214.011 ТУ	Incandescent lamp for various application of 8-20 type	PH 8-20
ТУ16-535.511-76	Halogen Incandescent lamps of 12-100 type	КГМ 12-100

List of technical conditions

Designation	Name	Type of lamp(product)
ТУ16-535.430-75	Small-sized Halogen Incandescent lamp of 30-300-2 type	КГМ 30-300-2
ТУ16-545.354-81	Small-sized Halogen Incandescent lamps	КГМ 75-600 КГМ 110-600
ТУ16-93 ИФМР.675212.005 ТУ	Incandescent lamp for various application of 60-4,8 type	PH 60-4,8
ТУ16-95 ИФМР.675212.006 ТУ	Small-sized Incandescent lamp for various application of 55-15 type	PH 55-15
ТУ16-545.025-80	Medium-sized Optical Incandescent lamp of 12-100 type	ОП 12-100
ТУ16-94 ИФМР.675214.013 ТУ	Small-sized Optical Incandescent lamp of 6-3 type	ОП 6-3
ТУ 3467-011-99981859-2015	High Pressure Sodium lamps with Higher Light Output	ДНаТ City 50 Вт/220В ДНаТ Супер 50 Вт/220В ДНаТ City 70 Вт/220В ДНаТ Супер 70 Вт/220В ДНаТ City 100 Вт/220В ДНаТ Супер 100 Вт/220В ДНаТ City 150 Вт/220В ДНаТ Супер 150 Вт/220В ДНаТ City 250 Вт/220В ДНаТ Супер 250 Вт/220В ДНаТ City 400 Вт/220В ДНаТ Супер 400 Вт/220В ДНаТ City 600 Вт/220В ДНаТ Супер 600 Вт/220В ДНаТ Супер 1000 Вт/220В ДНаТ City 2x1000Вт/220В
ТУ 3468-001-99981859-2011	Thermal Radiators of Various Application	Т 230-75, Т 230-75-4, Т 230-100-2, Т 230-100-4, Т 230-150, Т 240-150, Т 230-200, Т 230-240-300, Т 220-230-300-2, Т 230-240-500, Т 220-230-750, Т 220-230-1000, Т 230-25-2, Т 230-25-4, Т 230-40-2, Т 230-40-4, Т 230-60-2, Т 230-60-4

List of technical conditions

Designation	Name	Type of lamp(product)
ТУ 3467-001-99981859-2008	High Pressure Mercury Lamps for Gen-eral Application	ДРЛ 125, ДРЛ 250М, ДРЛ 400М, ДРЛ 700, ДРЛ 700М, ДРЛ 1000
ТУ16-2002 ИФМР.675650.005 ТУ	High Pressure Blended Mercury lamps	ДРВ 160, ДРВ 250 ДРВ 500, ДРВ 750-1
ТУ 3467-003-99981859-2009	High Pressure Discharge Metal Halide lamps	ДРИ 250-5, ДРИ 250-6, ДРИ 250-7, ДРИ 400-5, ДРИ 400-6, ДРИ 400-7, ДРИ 700-5, ДРИ 700-6, ДРИ 1000-6, ДРИ 2000-6
ТУ 3467-005-99981859-2010	High Pressure Sodium lamps	ДНаТ 50-1М, ДНаТ 70-1М, ДНаТ 100-1М, ДНаТ 150-1М, ДНаТ 250-5М, ДНаТ 400-5М, ДНаТ 600-М
ТУ 3467-008-99981859-2011	High Pressure Sodium lamps with two arc tubes	ДНаТ 2x100-1М, ДНаТ 2x150-1М, ДНаТ 2x250-5М, ДНаТ 2x400-5М

List of analogues by manufacturer

Code «ILCOS»ЛИСМА»PHILIPS OSRAM G E SYLVANIA

High Pressure Sodium lamps (ДНаТ)

ST	ДНаТ 70-1М	SON-T 70 W	NAV-T 70	LU 70/90/MO/T/27	SHP-T 70W
	ДНаТ 100-1М	SON-T 100 W	NAV-T 100	LU 100/100/O/T/40	SHP-T 100W
	ДНаТ 150-1М	SON-T 150 W	NAV-T 150	LU 150/100/40	SHP-T 150W
	ДНаТ 250-5М	SON-T 250 W	NAV-T 250	LU 250/T/40	SHP-T 250W
	ДНаТ 400-5М	SON-T 400 W	NAV-T 400	LU 400/T/40	SHP-T 400W
	ДНаТ 600-1	SON-T 600 W	NAV-T 600	LU 600/HO/T/40	SHP-TS 600W
	ДНаТ 600 М	-	-	-	-

High Pressure Mercury lamps (ДРЛ)

QE/R	ДРЛ 125	HPL-N 125 W	HQL 125	H 125/27	HSL-BW 125W
	ДРЛ 250 М	HPL-N 250 W	HQL 250	H 250/40	HSL-BW 250W
	ДРЛ 400 М	HPL-N 400 W	HQL 400	H 400/40	HSL-BW 400W
	ДРЛ 700	HPL-N 700 W	HQL 700	-	HSL-BW 700W
	ДРЛ 1000	HPL-N 1000 W	HQL 1000	-	HSL-BW 1000W






























High Pressure Blended Mercury lamps (ДРВ)

QB/R	ДРВ 160	ML 160WE27	HWL 160	ML 230-240V160WE27	HSB-BW 160W
	ДРВ 250	ML 250WE40	HWL 250	ML 230-240V250WE40	HSB-BW 250W
	ДРВ 500	ML 500WE40	HWL 500	ML 230-240V500WE40	HSB-BW 500W
	ДРВ 750-1	ML 750WE40	-	-	-

High Pressure Metal Halide lamps (ДРИ)

ME	ДРИ 250-7	HPI Plus 250	HQI-E 250/D	ARC250/ E/H	HCI-HX 250
	ДРИ 400-7	HPI Plus 400	HQI-E 400/D	ARC 400/E/H	HCI-HX 400
	ДРИ 700-5	-	-	-	-
MT	ДРИ 250-6	HPI-T 250	HQI-T 250/D	ARC250/T/H	HCI-T 250
	ДРИ 400-6	HPI-T400	HQI-T/400/D	ARC 400/T/H	HCI-T 400
	ДРИ 1000-6	-	-	-	-
	ДРИ 2000-6	HPI-T 2000	HQI-T 2000/NSPL2000/T/H		HCI-T 2000

Designations, used in catalogue

	Voltage, V		Luminous intensity, cd
	Amperage, A		Spectrum
	Power, W		KCC – Curve of luminuos flux
	Luminous flux, lm		Frequency, Hz
	Colour temeperature, K		Germicidal flux*, W
	Colour rendering index, Ra, no less than		Irradiance in the area UV-A, 315-400 nm
	Lenght, mm		Irradiance in the area UV-B, 280-315 nm
	Width, mm		Irradiance in the area UV-C, 200-280 nm
	Diameter, mm		Quantity of lamps, pcs.
	Height, mm		Total lamp power, W
	Type of base		Efficiency, m ³ /hour
	Medium lifetime, hours		Weight, kg, no more than
	Picture, №		Photosynthetic photon flux, micromol/s
	Thermal power, kilocalories per hour		
	Radiant flux, W		
	Effectivness in area FAR, (μmol/s)/W		



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