



8 Light sources

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High pressure gas-discharge lamps

Metal-halide lamp of type DRI IEK® is a compact, powerful and efficient light source widely used in luminaires of various purposes. Main areas of application are utility, decorative and architectural external lighting, lighting installations of industrial and social buildings. The small size of luminous element in the metal-halide lamp makes it a highly suitable light source for the luminaires of floodlight type. The DRI IEK® lamps are fully compatible with IEK® metal-halide spotlights.

The sodium high pressure lamp of type DNaT IEK® (arc sodium with tubular bulb) is one of the most efficient source of visible radiation. It has the highest luminous efficacy among the gas-discharge lamps and minor decrease of light flux, with long service life. Due to its power-saving and reliability characteristics, DNaT lamp is widely used in lighting systems for city, roads and highways.

The gas-discharge lamps of types DRI and DNaT require the special devices for discharge initiation with appropriate ballast (BL – ballast or EBL – electronic ballast) and impulse starting device (ISD).



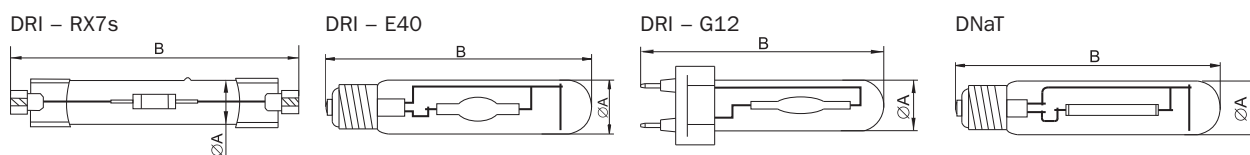
Advantages of fluorescent lamps

- High luminous efficacy.
- Long service life ensuring minimum maintenance cost.

Technical characteristics

Rated operating voltage, V	230
Rated frequency, Hz	50
Range of operating temperatures, °C	–40 ÷ +45

Products' range



	Lamp power, W	Color temperature, K	Base	Rated light flux, lm	Overall dimensions, AxB, mm	Position	Lifetime, years, at least	Product ID
DRI metal-halide lamps								
	70	4200	RX7s	5700	20×117,6	horizontal	6000	MHL-70-4200-RX7S
	150	4200	RX7s	12000	23×136	horizontal	6000	MHL-150-4200-RX7S
	250	4500	E40	21270	46×227	universal	10000	MHL-250-4500-E40
	400	4500	E40	34000	46×270	universal	10000	MHL-400-4500-E40
	70	4000	G12	6500	23×100	universal	16000	MHL-70-4000-G12
	150	4000	G12	14200	23×100	universal	16000	MHL-150-4000-G12
	Lamp power, W	Extinction voltage, V	Base	Rated light flux, lm	Overall dimensions, AxB, mm	Current, A	Lifetime, years, at least	Product ID
DNaT sodium lamps								
	70	130	E27	5800	39×156	0,98	10000	HPSL-70-E27-T
	150	135	E40	15000	48×211	1,8	10000	HPSL-150-E40-T
	250	135	E40	26000	48×260	3	10000	HPSL-250-E40-T
	400	135	E40	50000	48×270	4,6	10000	HPSL-400-E40-T

Linear fluorescent lamps

The fluorescent lamps are used in outdoor and indoor luminaires for industrial, social and household facilities.

The fluorescent lamps comply with requirements of Customs Union Technical Regulation TR TS 004/2011, IEC 60081, IEC 61195 and Russian Federation Government Decree No.602 of 20.07.2011.



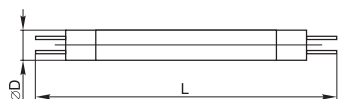
Advantages of fluorescent lamps

- Energy efficiency.
- Luminous efficiency in 5 times more as compared with incandescent lamps.
- Lifetime in 8 to 15 times more as compared with incandescent lamps.
- Considerably smaller heat release.
- Steady light flux during the whole lifetime.
- White and daylight colors.

Technical characteristics

Rated operating voltage, V	230~
Rated frequency, Hz	50
Climatic version and lamp location category according to GOST 15150	UHL3
Range of operating temperatures, °C	-10...+40

Range of fluorescent lamps



Name	Lamp power, W	Color temperature*, K	Length L, mm	Rated light flux, lm	Package qty., pcs group	pcs ship.	Product ID
Diameter (ØD) 12.5 mm (T4). Base G5							
LL-12/6 W	6	6500	221,2	360	25	100	LSL16-12-G5-06
		4000	221,2	360	25	100	LSL14-12-G5-06
LL-12/8 W	8	6500	342,2	650	25	100	LSL16-12-G5-08
		4000	342,2	650	25	100	LSL14-12-G5-08
LL-12/12 W	12	6500	370,2	720	25	100	LSL16-12-G5-12
		4000	370,2	720	25	100	LSL14-12-G5-12
LL-12/16 W	16	6500	470,2	960	25	100	LSL16-12-G5-16
		4000	470,2	1000	25	100	LSL14-12-G5-16
LL-12/20 W	20	6500	568,2	1260	25	100	LSL16-12-G5-20
		4000	568,2	1280	25	100	LSL14-12-G5-20
LL-12/24 W	24	6500	656,2	1480	25	100	LSL16-12-G5-24
		4000	656,2	1560	25	100	LSL14-12-G5-24
LL-12/28 W	28	6500	766,2	2200	25	100	LSL16-12-G5-28
		4000	766,2	2300	25	100	LSL14-12-G5-28
Diameter (ØD) 16 mm (T5). Base G5							
LL-16/6 W	6	6500	226,2	360	25	500	LSL16-16-G5-06
		4000	226,2	360	25	500	LSL14-16-G5-06
LL-16/8 W	8	6500	302,5	480	25	500	LSL16-16-G5-08
		4000	302,5	480	25	500	LSL14-16-G5-08
LL-16/13 W	13	6500	531,2	780	25	200	LSL16-16-G5-13
		4000	531,2	780	25	200	LSL14-16-G5-13
LL-16/14 W	14	6500	563,2	1045	25	200	LSL16-16-G5-14
		4000	563,2	1140	25	200	LSL14-16-G5-14
LL-16/21 W	21	6500	863,2	1660	25	100	LSL16-16-G5-21
		4000	863,2	1850	25	100	LSL14-16-G5-21
LL-16/28 W	28	6500	1163,2	2350	25	100	LSL16-16-G5-28
		4000	1163,2	2470	25	100	LSL14-16-G5-28
Diameter (ØD) 26 mm (T8). Base G13							
LL-26/18 W	18	6500	604	1080		25	LSL16-26-G13-18
		4000	604	1080		25	LSL14-26-G13-18
LL-26/36 W	36	6500	1213,6	2350		25	LSL16-26-G13-36
		4000	1213,6	2750		25	LSL14-26-G13-36

* 4000 K is cold white light; 6500 K is cold daylight

Energy-saving fluorescent lamps

The compact energy-saving lamps (types KEL, KL) are used as alternative light sources to incandescent lamps. The energy-saving lamps are designed for use in outdoor and indoor luminaires for industrial, social and household facilities.

The high power energy-saving lamps (type KEL) are designed for use in outdoor luminaires and also for indoor lighting in industrial and public buildings.

They substitute the incandescent lamps of power 200–1250 W.

The compact energy-saving lamps of ECO series (type KELR) are designed for mass replacement of 75–100-watt incandescent lamps of main sizes installed in lighting systems in residential and public premises.

KEL and KELR lamps comply with requirements of Customs Union Technical Regulations TR TS 004/2011, TR TS 020/2011, IEC 60968 and Russian Federation Government Decree No.602 of 20.07.2011.

KL lamps comply with requirements of Customs Union Technical Regulation TR TS 004/2011, IEC 61199 and Russian Federation Government Decree No.602 of 20.07.2011.



Advantages

- Lifetime in 8 times more as compared with incandescent lamps*.
- Energy consumption in 5 times lower as compared with incandescent lamps.
- Considerably smaller heat release.
- Compliance with electromagnetic compatibility standards.
- High color rendering ($R_a > 80$).
- Steady light flux during the whole lifetime.

* Lamps of ECO series have the lifetime in 6 times longer.

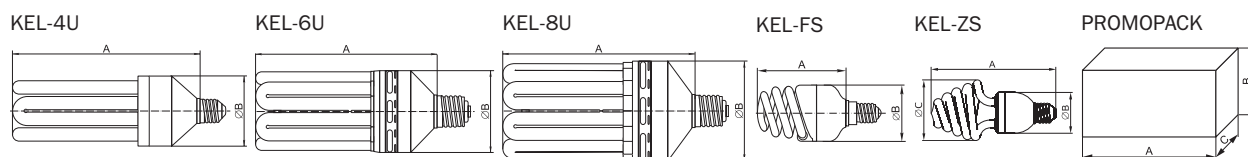
Technical characteristics

Rated operating voltage, V	230~
Rated frequency, Hz	50
Range of operating temperatures, °C	–25...+40

Caution!

The lamps contain mercury! Disposal and elimination of wasted lamps must be charged to a company that has a license for works of this type.

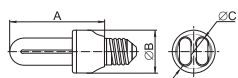
Products' range



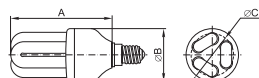
	Description	Lamp power, W	Color temperature*, K	Base	Rated light flux, lm	Overall dimensions A×B×C, mm	Package qty, pcs.		Product ID
							single	ship.	
	KEL-4U E27 55 W 6500 K	55	6500	E27	2750	210×73	1	25	LLE10-27-055-6500
	KEL-4U E27 65 W 6500 K	65	6500	E27	3250	220×73	1	25	LLE10-27-065-6500
	KEL-6U E40 85 W 6500 K	85	6500	E40	4250	228×105	1	12	LLE10-40-085-6500
	KEL-6U E40 105 W 6500 K	105	6500	E40	5250	255×105	1	12	LLE10-40-105-6500
	KEL-8U E40 150 W 6500 K	150	6500	E40	7500	250×124	1	6	LLE10-40-150-6500
	KEL-8U E40 200 W 6500 K	200	6500	E40	10000	300×124	1	6	LLE10-40-200-6500
	KEL-8U E40 250 W 6500 K	250	6500	E40	12500	315×124	1	6	LLE10-40-250-6500
	KEL-FS E27 55 W 4000 K	55	4000	E27	3575	213×83	1	12	LLE25-27-55-4000
	KEL-FS E27 55 W 6500 K	55	6500	E27	3575	213×83	1	12	LLE25-27-55-6500
	KEL-FS E27 65 W 4000 K	65	4000	E27	4225	220×83	1	12	LLE25-27-65-4000
	KEL-FS E27 65 W 6500 K	65	6500	E27	4225	220×83	1	12	LLE25-27-65-6500
	KEL-FS E27 100 W 2700 K	100	2700	E27	5100	268×105	1	12	LLE25-27-100-2700-T5
	KEL-FS E27 100 W 4000 K	100	4000	E27	5100	268×105	1	12	LLE25-27-100-4000-T5
	KEL-FS E27 100 W 6500 K	100	6500	E27	5100	268×105	1	12	LLE25-27-100-6500-T5
	KEL-FS E40 85 W 4000 K	85	4000	E40	5525	270×105	1	12	LLE25-40-85-4000
	KEL-FS E40 85 W 6500 K	85	6500	E40	5525	270×105	1	12	LLE25-40-85-6500
	KEL-FS E40 100 W 4000 K	100	4000	E40	5100	270×105	1	12	LLE25-40-100-4000-T5
	KEL-FS E40 125 W 4000 K	125	4000	E40	8125	315×125	1	12	LLE25-40-125-4000
	KEL-FS E40 125 W 6500 K	125	6500	E40	8125	315×125	1	12	LLE25-40-125-6500
	KEL-ZS E27 85 W 4000 K	85	4000	E27	5525	243×150	1	12	LLE21-27-85-4000
PROMOPACK									
	KEL-4U E27 55 W 6500 K	55	6500	E27	2805	467×405×282	3	10	LLE10-27-055-6500-S3
	KEL-6U E40 105 W 6500 K	105	6500	E40	5355	563×417×372	3	4	LLE10-40-105-6500-S3
	KEL-FS E27 100 W 6500 K	100	6500	E27	5100	563×415×342	3	4	LLE25-27-100-6500-T5-S3

* 2700 K is warm white light; 4000 K is cold white light; 6500 K is daylight.

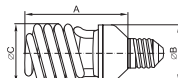
KELR-2U



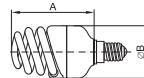
KELR-3U



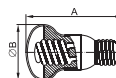
KELR-S



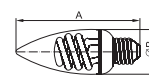
KELR-FS



KELR-PAR

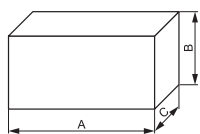


KELR-C



	Description	Lamp power, W	Color temperature*, K	Base	Rated light flux, lm	Overall dimensions, A×B×C, mm	Package qty, pcs.		Product ID
							single	ship.	
	KELR-2U E27 15 W 2700 K	15	2700	E27	450	133×42×32	1	50	LLEP10-27-015-2700-T4
	KELR-2U E27 15 W 4000 K	15	4000	E27	450	133×42×32	1	50	LLEP10-27-015-4000-T4
	KELR-3U E27 20 W 2700 K	20	2700	E27	585	113×40×32	1	50	LLEP10-27-020-2700-T3
	KELR-3U E27 20 W 4000 K	20	4000	E27	585	113×40×32	1	50	LLEP10-27-020-4000-T3
	KELR-3U E27 20 W 6500 K	20	6500	E27	585	113×40×32	1	50	LLEP10-27-020-6500-T3
	KELR-S E27 100 W 4000 K	100	4000	E27	3800	253×100×78	1	12	LLEP20-27-100-4000-T5
	KELR-S E27 100 W 6500 K	100	6500	E27	3800	253×100×78	1	12	LLEP20-27-100-6500-T5
	KELR-FS E27 15 W 2700 K	15	2700	E27	450	83×48	1	50	LLEP25-27-015-2700-T3
	KELR-FS E27 15 W 4000 K	15	4000	E27	450	83×48	1	50	LLEP25-27-015-4000-T3
	KELR-FS E27 15 W 6500 K	15	6500	E27	450	83×48	1	50	LLEP25-27-015-6500-T3
	KELR-FS E27 20 W 2700 K	20	2700	E27	585	93×48	1	50	LLEP25-27-020-2700-T3
	KELR-FS E27 20 W 4000 K	20	4000	E27	585	93×48	1	50	LLEP25-27-020-4000-T3
	KELR-FS E27 20 W 6500 K	20	6500	E27	585	93×48	1	50	LLEP25-27-020-6500-T3
	KELR-FS E27 30 W 2700 K	30	2700	E27	1150	133×60	1	40	LLEP25-27-030-2700-T4
	KELR-FS E27 30 W 4000 K	30	4000	E27	1150	133×60	1	40	LLEP25-27-030-4000-T4
	KELR-PAR50 E14 9 W 2700 K	9	2700	E14	180	69×50	1	60	LLEP50-14-09-2700
	KELR-PAR50 E14 9 W 4000 K	9	4000	E14	180	69×50	1	60	LLEP50-14-09-4000
	KELR-C E14 9 W 2700 K	9	2700	E14	180	79×35	1	60	LLEP60-14-09-2700
	KELR-C E14 9 W 4000 K	9	4000	E14	180	79×35	1	60	LLEP60-14-09-4000

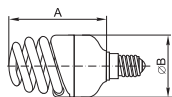
* 2700 K is warm white light; 4000 K is cold white light

PROMOPACK, ZHKH-PACK


	Description	Lamp power, W	Color temperature*, K	Base	Rated light flux, lm	Overall dimensions, A×B×C, mm	Package qty, pcs.		Product ID	
							single	ship.		
PROMOPACK										
	KELR-S E27 100 W 4000 K	100	4000	E27	3800	575×435×340	3	4	LLEP20-27-100-4000-T5-S3	
		KELR-FS E27 15 W 2700 K	15	2700	E27	450	520×310×145	3	20	LLEP25-27-015-2700-T3-S3
		KELR-FS E27 15 W 4000 K	15	4000	E27	450	520×310×145	3	20	LLEP25-27-015-4000-T3-S3
		KELR-FS E27 20 W 2700 K	20	2700	E27	585	520×310×155	3	20	LLEP25-27-020-2700-T3-S3
KELR-FS E27 20 W 4000 K		20	4000	E27	585	520×310×290	3	20	LLEP25-27-020-4000-T3-S3	
KELR-FS E27 30 W 4000 K	30	4000	E27	1150	620×185×350	3	20	LLEP25-27-030-4000-T4-S3		
	KELR-C E14 9 W 2700 K	9	2700	E14	180	760×115×140	6	10	LLEP60-14-09-2700-S6	
ZHKH-PACK										
	KELR-3U E27 20 W 4000 K	20	4000	E27	585	695×215×175	20	4	LLEP10-27-020-4000-T3-S20	
	KELR-3U E27 20 W 6500 K	20	6500	E27	585	695×215×175	20	4	LLEP10-27-020-6500-T3-S20	
	KELR-FS E27 15 W 2700 K	15	2700	E27	450	860×265×145	20	4	LLEP25-27-015-2700-T3-S20	
	KELR-FS E27 15 W 4000 K	15	4000	E27	450	860×265×145	20	4	LLEP25-27-015-4000-T3-S20	
	KELR-FS E27 20 W 4000 K	20	4000	E27	585	860×265×155	20	4	LLEP25-27-020-4000-T3-S20	
	KELR-FS E27 20 W 6500 K	20	6500	E27	585	860×265×155	20	4	LLEP25-27-020-6500-T3-S20	

* 2700 K is warm white light; 4000 K is cold white light; 6500 K is daylight.

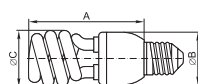
KEL-FS



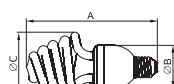
	Description	Lamp power, W	Color temperature*, K	Base	Rated light flux, lm	Overall dimensions, A×B×C, mm	Package qty, pcs.		Product ID
							single	ship.	
STANDARD series									
8.02.02.03	KLL lamps, full spiral, type KEL-FS								
	KEL-FS E14 9 W 2700 K	9	2700	E14	450	66×34	1	60	LLE25-14-009-2700-T2
	KEL-FS E14 9 W 4000 K	9	4000	E14	450	66×34	1	60	LLE25-14-009-4000-T2
	KEL-FS E14 9 W 6500 K	9	6500	E14	421	66×34	1	60	LLE25-14-009-6500-T2
	KEL-FS E14 11 W 2700 K	11	2700	E14	550	73×34	1	60	LLE25-14-011-2700-T2
	KEL-FS E14 11 W 4000 K	11	4000	E14	550	73×34	1	60	LLE25-14-011-4000-T2
	KEL-FS E14 11 W 6500 K	11	6500	E14	514	73×34	1	60	LLE25-14-011-6500-T2
	KEL-FS E14 15 W 2700 K	15	2700	E14	810	83×40	1	60	LLE25-14-015-2700-T2
	KEL-FS E14 15 W 4000 K	15	4000	E14	805	83×40	1	60	LLE25-14-015-4000-T2
	KEL-FS E27 9 W 2700 K	9	2700	E27	450	58×34	1	60	LLE25-27-009-2700-T2
	KEL-FS E27 9 W 4000 K	9	4000	E27	450	58×34	1	60	LLE25-27-009-4000-T2
	KEL-FS E27 11 W 2700 K	11	2700	E27	550	64×34	1	60	LLE25-27-011-2700-T2
	KEL-FS E27 11 W 4000 K	11	4000	E27	550	64×34	1	60	LLE25-27-011-4000-T2
	KEL-FS E27 15 W 2700 K	15	2700	E27	800	75×40	1	60	LLE25-27-015-2700-T2
	KEL-FS E27 15 W 4000 K	15	4000	E27	800	75×40	1	60	LLE25-27-015-4000-T2
	KEL-FS E27 15 W 6500 K	15	6500	E27	727	75×40	1	60	LLE25-27-015-6500-T2
	KEL-FS E27 20 W 2700 K	20	2700	E27	1080	78×40	1	60	LLE25-27-020-2700-T2
	KEL-FS E27 20 W 4000 K	20	4000	E27	1050	78×40	1	60	LLE25-27-020-4000-T2
	KEL-FS E27 20 W 6500 K	20	6500	E27	969	78×40	1	60	LLE25-27-020-6500-T2
	KEL-FS E27 23 W 2700 K	23	2700	E27	1240	93×45	1	60	LLE25-27-023-2700-T2
	KEL-FS E27 23 W 4000 K	23	4000	E27	1173	93×45	1	60	LLE25-27-023-4000-T2
KEL-FS E27 25 W 2700 K	25	2700	E27	1350	98×50	1	50	LLE25-27-025-2700-T2	
KEL-FS E27 25 W 4000 K	25	4000	E27	1350	98×50	1	50	LLE25-27-025-4000-T2	
KEL-FS E27 30 W 2700 K	30	2700	E27	1530	136×61	1	50	LLE25-27-030-2700-T4	
KEL-FS E27 30 W 4000 K	30	4000	E27	1530	136×61	1	50	LLE25-27-030-4000-T4	
KEL-FS E27 30 W 6500 K	30	6500	E27	1530	136×61	1	50	LLE25-27-030-6500-T4	
PROMOPACK									
	KEL-FS E14 11 W 4000 K	11	4000	E14	514	575×255×132	3	30	LLE25-14-011-4000-T2-S3
	KEL-FS E27 15 W 2700 K	15	2700	E27	727	535×245×136	3	20	LLE25-27-015-2700-T2-S3
	KEL-FS E27 15 W 4000 K	15	4000	E27	727	535×245×136	3	20	LLE25-27-015-4000-T2-S3
	KEL-FS E27 20 W 2700 K	20	2700	E27	969	535×245×139	3	20	LLE25-27-020-2700-T2-S3
	KEL-FS E27 20 W 4000 K	20	4000	E27	969	535×245×139	3	20	LLE25-27-020-4000-T2-S3
	KEL-FS E27 30 W 4000 K	30	4000	E27	1530	787×350×197	3	20	LLE25-27-030-4000-T4-S3
	KEL-FS E14 9 W 2700 K	9	2700	E14	421	463×395×125	6	20	LLE25-14-009-2700-T2-S6

* 2700 K is warm white light; 4000 K is cold white light.

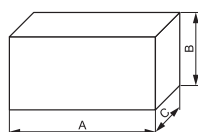
KEL-S



KEL-ZS



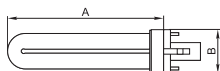
PROMOPACK



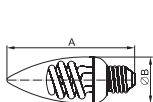
	Description	Lamp power, W	Color temperature*, K	Base	Rated light flux, lm	Overall dimensions, A×B×C, mm	Package qty, pcs.		Product ID
							single	ship.	
	8.02.02.04 KLL lamps, half spiral, type KEL-S								
	KEL-S E27 11 W 2700 K	11	2700	E27	591	69×40×45	1	60	LLE20-27-011-2700-T2
	KEL-S E27 11 W 4000 K	11	4000	E27	580	69×40×45	1	60	LLE20-27-011-4000-T2
	KEL-S E27 11 W 6500 K	11	6500	E27	514	69×40×45	1	60	LLE20-27-011-6500-T2
	KEL-S E27 15 W 2700 K	15	2700	E27	850	85×40×45	1	60	LLE20-27-015-2700-T2
	KEL-S E27 15 W 4000 K	15	4000	E27	835	85×40×45	1	60	LLE20-27-015-4000-T2
	KEL-S E27 15 W 6500 K	15	6500	E27	727	85×40×45	1	60	LLE20-27-015-6500-T2
	KEL-S E27 20 W 2700 K	20	2700	E27	1155	91×48×50	1	50	LLE20-27-020-2700-T2
	KEL-S E27 20 W 4000 K	20	4000	E27	1155	91×48×50	1	50	LLE20-27-020-4000-T2
	KEL-S E27 20 W 6500 K	20	6500	E27	1020	91×48×50	1	50	LLE20-27-020-6500-T2
	KEL-S E27 25 W 2700 K	25	2700	E27	1500	128×55×59	1	50	LLE20-27-025-2700-T4
	KEL-S E27 25 W 4000 K	25	4000	E27	1500	128×55×59	1	50	LLE20-27-025-4000-T4
KEL-S E27 45 W 4000 K	45	4000	E27	2270	187×73×80	1	20	LLE20-27-045-4000-T4	
PROMOPACK									
	KEL-S E27 15 W 2700 K	15	2700	E27	727	591×260×145	3	20	LLE20-27-015-2700-T2-S3
	KEL-S E27 15 W 4000 K	15	4000	E27	727	591×260×145	3	20	LLE20-27-015-4000-T2-S3
	KEL-S E27 20 W 2700 K	20	2700	E27	1020	651×285×151	3	20	LLE20-27-020-2700-T2-S3
	KEL-S E27 20 W 4000 K	20	4000	E27	1020	651×285×151	3	20	LLE20-27-020-4000-T2-S3
8.02.02.05 KLL lamps, umbrella spiral, type KEL-ZS									
	KEL-ZS E27 15 W 2700 K	15	2700	E27	727	78×41×55	1	60	LLE21-27-015-2700-T2
	KEL-ZS E27 15 W 4000 K	15	4000	E27	727	78×41×55	1	60	LLE21-27-015-4000-T2
	KEL-ZS E27 15 W 6500 K	15	6500	E27	727	78×41×55	1	60	LLE21-27-015-6500-T2
	KEL-ZS E27 20 W 2700 K	20	2700	E27	1020	98×48×75	1	50	LLE21-27-020-2700-T3
	KEL-ZS E27 20 W 4000 K	20	4000	E27	1020	98×48×75	1	50	LLE21-27-020-4000-T3
	KEL-ZS E27 20 W 6500 K	20	6500	E27	1020	98×48×75	1	50	LLE21-27-020-6500-T3
PROMOPACK									
	KEL-ZS E27 20 W 4000 K	20	4000	E27	1020	717×410×157	3	15	LLE21-27-020-4000-T3-S3

* 2700 K is warm white light; 4000 K is cold white light; 6500 K is daylight.

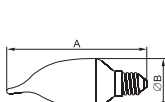
KL-PL(U)



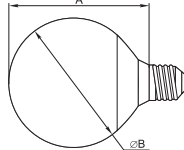
KEL-C



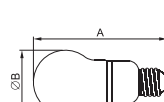
KEL-CB



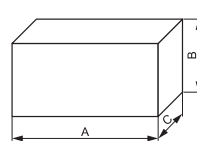
KEL-G



KEL-A



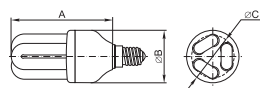
PROMOPACK



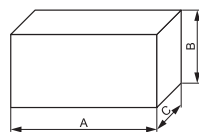
	Description	Lamp power, W	Color temperature*, K	Base	Rated light flux, lm	Overall dimensions, A×B×C, mm	Package qty, pcs.		Product ID
							single	ship.	
8.02.02.05 KLL lamps, not integrated, type KL-PL, PLC									
	KL-PL(U) G23 9 W 2700 K	9	2700	G23	580	137×32	1	100	LLE30-23-009-2700
	KL-PL(U) G23 9 W 4000 K	9	4000	G23	580	137×32	1	100	LLE30-23-009-4000
	KL-PL(U) G23 11 W 2700 K	11	2700	G23	880	206×32	1	100	LLE30-23-011-2700
	KL-PL(U) G23 11 W	11	4000	G23	880	206×32	1	100	LLE30-23-011-4000
8.02.02.06 KLL lamps, decorative									
	KEL-C E14 9 W 2700 K	9	2700	E14	344,25	87×38	1	60	LLE60-14-009-2700
	KEL-C E14 9 W 4000 K	9	4000	E14	344,25	87×38	1	60	LLE60-14-009-4000
	KEL-C E14 9 W 6500 K	9	6500	E14	344,25	87×38	1	60	LLE60-14-009-6500
	KEL-C E14 11 W 2700 K	11	2700	E14	540	98×42	1	50	LLE60-14-011-2700
	KEL-C E14 11 W 4000 K	11	4000	E14	540	98×42	1	50	LLE60-14-011-4000
	KEL-C E27 11 W 2700 K	11	2700	E27	540	96×42	1	50	LLE60-27-011-2700
	KEL-CB E14 9 W 2700 K	9	2700	E14	344,25	111×39	1	60	LLE61-14-009-2700
	KEL-CB E14 9 W 4000 K	9	4000	E14	344,25	111×39	1	60	LLE61-14-009-4000
	KEL-CB E14 9 W 6500 K	9	6500	E14	344,25	111×39	1	60	LLE61-14-009-6500
	KEL-G E14 9 W 2700 K	9	2700	E14	344,25	77×66	1	50	LLE70-14-009-2700
	KEL-G E27 9 W 2700 K	9	2700	E27	450	75×66	1	50	LLE70-27-009-2700
	KEL-G E27 9 W 4000 K	9	4000	E27	410	75×66	1	50	LLE70-27-009-4000
	KEL-G E27 20 W 2700 K	20	2700	E27	1080	102×95	1	30	LLE70-27-020-2700
	KEL-A E27 15 W 2700 K	15	2700	E27	573,75	101×60	1	50	LLE75-27-015-2700
	KEL-A E27 15 W 4000 K	15	4000	E27	573,75	101×60	1	50	LLE75-27-015-4000
PROMOPACK									
	KEL-C E14 9 W 4000 K	9	4000	E14	344,25	435×387×142	6	15	LLE60-14-009-4000-S6
	KEL-C E27 11 W 2700 K	11	2700	E27	420,75	475×423×156	6	15	LLE60-27-011-2700-S6
	KEL-CB E14 9 W 2700 K	9	2700	E14	344,25	435×387×166	6	15	LLE61-14-009-2700-S6
	KEL-CB E14 9 W 4000 K	9	4000	E14	344,25	435×387×166	6	15	LLE61-14-009-4000-S6

* 2700 K is warm white light; 4000 K is cold white light; 6500 K is daylight.

KEL-3U



PROMOPACK



	Description	Lamp power, W	Color temperature*, K	Base	Rated light flux, lm	Overall dimensions, A×B×C, mm	Package qty, pcs.		Product ID
							single	ship.	
8.02.02.07 KLL lamps, type 3U									
	KEL-3U E27 15 W 2700 K	15	2700	E27	765	111×41×33	1	60	LLE10-27-015-2700-T3
	KEL-3U E27 15 W 4000 K	15	4000	E27	765	111×41×33	1	60	LLE10-27-015-4000-T3
	KEL-3U E27 15 W 6500 K	15	6500	E27	765	111×41×33	1	60	LLE10-27-015-6500-T3
	KEL-3U E27 20 W 2700 K	20	2700	E27	1020	131×48×41	1	60	LLE10-27-020-2700-T4
	KEL-3U E27 20 W 4000 K	20	4000	E27	1020	131×48×41	1	60	LLE10-27-020-4000-T4
	KEL-3U E27 20 W 6500 K	20	6500	E27	1020	131×48×41	1	60	LLE10-27-020-6500-T4
	KEL-3U E27 25 W 2700 K	25	2700	E27	1275	145×48×41	1	60	LLE10-27-025-2700-T4
	KEL-3U E27 25 W 4000 K	25	4000	E27	1275	145×48×41	1	60	LLE10-27-025-4000-T4
	KEL-3U E27 25 W 6500 K	25	6500	E27	1275	145×48×41	1	60	LLE10-27-025-6500-T4
PROMOPACK									
	KEL-3U E27 20 W 4000 K	20	4000	E27	1020	619×270×190	3	20	LLE10-27-020-4000-T4-S3
	KEL-3U E27 20 W 6500 K	20	6500	E27	1020	619×270×190	3	20	LLE10-27-020-6500-T4-S3
	KEL-3U E27 25 W 4000 K	25	4000	E27	1275	619×270×205	3	20	LLE10-27-025-4000-T4-S3

* 2700 K is warm white light; 4000 K is cold white light; 6500 K is daylight.

LED lamps

The LED lamps bearing IEK® trademark are modern light sources, used in the luminaires as alternative to halogen lamps with GU5.3, GU10 bases and incandescent lamps with E14, E27 bases.

The LED lamps are designed for use in outdoor and indoor luminaires for industrial, commercial and household facilities.

They comply with requirements of Customs Union Technical Regulations TR TS 004/2011, TR TS 020/2011, IEC 62560 and Russian Federation Government Decree No.602 of 20.07.2011.



Advantages

- Lifetime in dozen times longer than lifetimes of incandescent and halogen lamps.
- Energy consumption is lower in several times as compared with other types of lamps, electric energy saving is up to 86%.
- Considerably smaller heat release than for incandescent and halogen lamps.
- Compliance with electromagnetic compatibility standards.
- Mercury-free, special disposal procedure is not necessary.
- Virtually instant ignition, quick achievement of maximum brightness.
- Steady light flux during the whole lifetime.

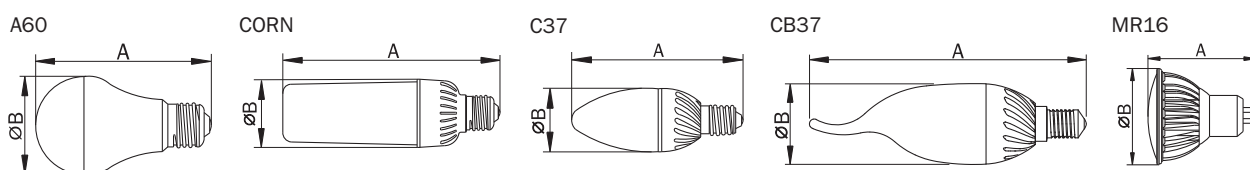
Technical characteristics of standard series:

Rated operating voltage, V	230~
Range of operating voltage, V	170~260~
Range of operating temperatures, °C	-40...+45
Color rendering index	Ra>80
Lifetime, h, at least	at least 45,000
Warranty period, years	3

Technical characteristics of ECO series:

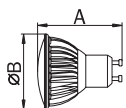
Rated operating voltage, V	230~
Range of operating voltage, V	220~240~
Range of operating temperatures, °C	-40...+45
Color rendering index	Ra>80
Lifetime, h, at least	at least 30,000
Warranty period, years	3

Products' range

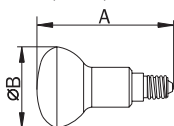


	Bulb shape	Base	Power	Color temperature, K	Light flux, lm	Dimensions (A×B)	Mains voltage	Individual package	Product ID
	A60	E27	4,9	3000	400	108×60	230	blister	LLP-A60-5-230-30-E27
	A60	E27	9,5	3000	780	116×60	230	box	LL-A55-9-230-30-E27
	A60	E27	9,5	4000	806	116×60	230	blister	LLP-A60-9-230-40-E27
	A60	E27	9,5	4000	800	116×60	230	box	LL-A55-9-230-40-E27
	A60	E27	11	3000	950	116×60	230	box	LL-A60-11-230-30-E27
	A60	E27	11	4000	1000	116×60	230	blister	LLP-A60-11-230-40-E27
	A60	E27	11	4000	1000	116×60	230	box	LL-A60-11-230-40-E27
	A60	E27	13	3000	1100	113×60	230	box	LL-A60-13-230-30-E27
	A60	E27	13	4000	1150	113×60	230	box	LL-A60-13-230-40-E27
	CORN	E27	7,5	4000	680	132×52	230	box	LL-CORN-8-230-40-E27
	CORN	E27	10	4000	900	160×52	230	box	LL-CORN-10-230-40-E27
	CORN	E27	12	4000	1100	160×52	230	box	LL-CORN-12-230-40-E27
	C37	E14	3,5	3000	250	103×37	230	box	LL-C35-4-230-30-E14-FR
	C37	E14	3,5	4000	270	103×37	230	box	LL-C35-4-230-40-E14-FR
	C37	E14	5	3000	400	103×37	230	box	LL-C37-5-230-30-E14-FR
	C37	E14	5	4000	425	103×37	230	box	LL-C37-5-230-40-E14-FR
	C37	E27	5	3000	400	103×37	230	box	LL-C37-5-230-30-E27-FR
	C37	E27	5	4000	425	103×37	230	box	LL-C37-5-230-40-E27-FR
	C37	E14	3,5	2700	260	103×37	230	box	LL-C35-4-230-27-E14-CL
	C37	E14	4,5	2700	320	103×37	230	box	LL-C35-5-230-27-E14-CL
	CB37	E14	5	3000	400	130×38	230	box	LL-CB37-5-230-30-E14-FR
	MR16	GU5.3	5	3000	330	51×50	12	box	LL-MR16-5-12-30-GU5
	MR16	GU5.3	5	4000	350	51×50	12	box	LL-MR16-5-12-40-GU5
	MR16	GU5.3	6	3000	400	54×50	12	box	LL-MR16-6-12-30-GU5
	MR16	GU5.3	6	4000	420	54×50	12	box	LL-MR16-6-12-40-GU5

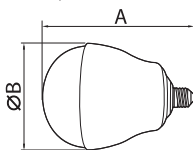
PAR16



R39, R50, R63



A120, A160



	Bulb shape	Base	Power	Color temperature, K	Light flux, lm	Dimensions (A×B)	Mains voltage	Individual package	Product ID
	MR16	GU5.3	3	3000	180	48×50	230	box	LLPB-MR16-3-230-30-GU5
	MR16	GU5.3	3	4000	180	48×50	230	box	LLPB-MR16-3-230-40-GU5
	MR16	GU5.3	3	3000	180	61×50	230	blister	LLP-MR16-3-230-30-GU5
	MR16	GU5.3	3	4000	200	61×50	230	blister	LLP-MR16-3-230-40-GU5
	MR16	GU5.3	5	3000	330	61×50	230	blister	LLP-MR16-5-230-30-GU5
	MR16	GU5.3	5	3000	330	51×50	230	box	LL-MR16-5-230-30-GU5
	MR16	GU5.3	5	4000	350	61×50	230	blister	LLP-MR16-5-230-40-GU5
	MR16	GU5.3	5	4000	370	51×50	230	box	LL-MR16-5-230-40-GU5
	MR16	GU5.3	6	3000	500	57×50	230	box	LL-MR16-6-230-30-GU5
	MR16	GU5.3	6	4000	500	57×50	230	box	LL-MR16-6-230-40-GU5
	PAR16	GU10	3	3000	180	61×50	230	blister	LLP-PAR16-3-230-30-GU10
	PAR16	GU10	3	4000	200	61×50	230	blister	LLP-PAR16-3-230-40-GU10
	PAR16	GU10	5	3000	330	61×50	230	blister	LLP-PAR16-5-230-30-GU10
	PAR16	GU10	5	3000	330	61×50	230	box	LLP-PAR16-5-230-30-GU10
	PAR16	GU10	5	4000	350	61×50	230	blister	LLP-PAR16-5-230-40-GU10
	PAR16	GU10	5	4000	350	58×50	230	box	LL-PAR16-5-230-40-GU10
	PAR16	GU10	7	3000	560	61×50	230	box	LL-PAR16-7-230-30-GU10
	PAR16	GU10	7	4000	560	61×50	230	box	LL-PAR16-7-230-40-GU10
	R39	E14	2,5	4000	160	69×40	230	blister	LLP-R39-3-230-40-E14
	R50	E14	5	4000	400	84×50	230	blister	LLP-R50-5-230-40-E14
	R50	E14	5,5	3000	400	84×50	230	box	LL-R50-5-230-27-E14
	R50	E14	5,5	4000	420	84×50	230	box	LL-R50-5-230-40-E14
	R63	E27	5	4000	400	102×62	230	blister	LLP-R63-5-230-40-E27
	R63	E27	8	3000	600	100×63	230	box	LL-R63-8-230-27-E27
	R63	E27	8	4000	650	100×63	230	box	LL-R63-8-230-40-E27
	A120	E27	24	4000	2200	200×120	230	box	LL-A120-24-230-40-E27
	A120	E27	24	6500	2200	200×120	230	box	LL-A120-24-230-65-E27
	A160	E27	36	4000	3400	250×160	230	box	LL-A160-36-230-40-E27
	A160	E27	36	6500	3400	250×160	230	box	LL-A160-36-230-65-E27

LED ribbon and accessories

IEK® LED illumination systems allow creating the decorative lighting of furniture, niches, bar counters, windows and showcases, as well as backlight for interior elements: multilevel and suspended ceilings, cornices, skirtings. The LED illumination systems include a light source – LED ribbon and accessories (LED drivers, controllers and connectors).

The LED illumination system enables the following:

- illumination of various colors: warm white, cold white, blue, green, red, yellow or multi-color;
- selection of LED ribbon brightness;
- adjustment of LED ribbon brightness using the special device, controller;
- remote control of brightness and color gamma, automatic color changeover of multi-color ribbons, matching various tones and holding of preferred scene at any moment.



Advantages

- Self-adhesive backing manufactured by 3M.
- High-efficient (more than 60 lm/W) EPISTAR SMD LEDs.
- Not sensitive to mains voltage fluctuations from rated value.
- Safety of operation due to use of low supply voltage (12 V).
- Lifetime is 50,000 hours.

Technical characteristics of ribbon:

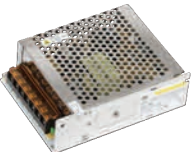
Ribbon width, mm	8 (for ribbon with LEDs in casing 3528) 10 (for ribbon with LEDs in casing 5050)
Ribbon length, mm	5000
Supply voltage, V	12 (DC)
Operating temperature, °C	–10 ÷ +45

Products' range

	Color	No. of LEDs, pcs/m	Power, W/m	Light flux, per LED, lm	Degree of protection	Min. cut length, mm	Method of connection	Product ID
LED ribbon of ECO series (3528)								
	Warm white	60	4,8	3-4	IP20	50	JACK5.5 connector	LSR1-1-060-20-1-05
	Warm white	60	4,8	3-4	IP65	50	JACK5.5 connector	LSR1-1-060-65-1-05
	Warm white	120	9,6	3-4	IP20	25	JACK5.5 connector	LSR1-1-120-20-1-05
	Warm white	120	9,6	3-4	IP65	25	JACK5.5 connector	LSR1-1-120-65-1-05
	Cold daylight	60	4,8	3-4	IP20	50	JACK5.5 connector	LSR1-2-060-20-1-05
	Cold daylight	60	4,8	3-4	IP65	50	JACK5.5 connector	LSR1-2-060-65-1-05
	Cold daylight	120	9,6	3-4	IP20	25	JACK5.5 connector	LSR1-2-120-20-1-05
	Cold daylight	120	9,6	3-4	IP65	25	JACK5.5 connector	LSR1-2-120-65-1-05
	Yellow	60	4,8	—	IP20	50	JACK5.5 connector	LSR1-4-060-20-1-05
	Yellow	60	4,8	—	IP65	50	JACK5.5 connector	LSR1-4-060-65-1-05
	Green	60	4,8	—	IP20	50	JACK5.5 connector	LSR1-5-060-20-1-05
	Green	60	4,8	—	IP65	50	JACK5.5 connector	LSR1-5-060-65-1-05
	Red	60	4,8	—	IP20	50	JACK5.5 connector	LSR1-6-060-20-1-05
	Red	60	4,8	—	IP65	50	JACK5.5 connector	LSR1-6-060-65-1-05
	Blue	60	4,8	—	IP20	50	JACK5.5 connector	LSR1-7-060-20-1-05
	Blue	60	4,8	—	IP65	50	JACK5.5 connector	LSR1-7-060-65-1-05
	RGB	54	4,8	—	IP20	165	RGB connector	LSR1-3-054-20-1-05
	RGB	54	4,8	—	IP65	165	RGB connector	LSR1-3-054-65-1-05
LED ribbon of PRO series (5050)								
	Warm white	30	7,2	16-18	IP20	100	JACK5.5 connector	LSR2-1-030-20-1-05
	Warm white	30	7,2	16-18	IP65	100	JACK5.5 connector	LSR2-1-030-65-1-05
	Warm white	60	14,4	16-18	IP20	50	JACK5.5 connector	LSR2-1-060-20-1-05
	Warm white	60	14,4	16-18	IP65	50	JACK5.5 connector	LSR2-1-060-65-1-05
	Cold daylight	30	7,2	16-18	IP20	100	JACK5.5 connector	LSR2-2-030-20-1-05
	Cold daylight	30	7,2	16-18	IP65	100	JACK5.5 connector	LSR2-2-030-65-1-05
	Cold daylight	60	14,4	16-18	IP20	50	JACK5.5 connector	LSR2-2-060-20-1-05
	Cold daylight	60	14,4	16-18	IP65	50	JACK5.5 connector	LSR2-2-060-65-1-05
	Multi-white (from warm to cold)	120	9,6	5-6	IP20	50	connection wires	LSR1-8-120-20-1-05
	Multi-white (from warm to cold)	120	9,6	5-6	IP65	50	connection wires	LSR1-8-120-65-1-05
	Yellow	30	7,2	—	IP20	100	JACK5.5 connector	LSR2-4-030-20-1-05
	Yellow	30	7,2	—	IP65	100	JACK5.5 connector	LSR2-4-030-65-1-05
	Green	30	7,2	—	IP20	100	JACK5.5 connector	LSR2-5-030-20-1-05
	Green	30	7,2	—	IP65	100	JACK5.5 connector	LSR2-5-030-65-1-05
	Red	30	7,2	—	IP20	100	JACK5.5 connector	LSR2-6-030-20-1-05
	Red	30	7,2	—	IP65	100	JACK5.5 connector	LSR2-6-030-65-1-05
	Blue	30	7,2	—	IP20	100	JACK5.5 connector	LSR2-7-030-20-1-05
	Blue	30	7,2	—	IP65	100	JACK5.5 connector	LSR2-7-030-65-1-05
	RGB	30	7,2	—	IP20	100	RGB connector	LSR2-3-030-20-1-05
	RGB	30	7,2	—	IP65	100	RGB connector	LSR2-3-030-65-1-05
	RGB	60	14,4	—	IP20	50	RGB connector	LSR2-3-060-20-1-05
	RGB	60	14,4	—	IP65	50	RGB connector	LSR2-3-060-65-1-05

Drivers

The drivers convert input mains voltage 220 V 50/60 Hz to 12 VDC required for supply of the LED ribbon.

	Power, W/m	No. of channels	Input voltage, V	Output current, A	Degree of protection	Weight, kg	Product ID
Directly connected adapters							
	24	1	170 ÷ 240	2	IP20	0,13	LSP2-024-12-20-11
	36	1	170 ÷ 240	3	IP20	0,18	LSP2-036-12-20-11
	60	1	170 ÷ 240	5	IP20	0,19	LSP2-060-12-20-11
Drivers IP20							
	25	1	110 ÷ 240	2,08	IP20	0,16	LSP1-025-12-20-33-PRO
	30	1	110 ÷ 240	2,5	IP20	0,24	LSP1-030-12-20-33-PRO
	40	1	110 ÷ 240	3,33	IP20	0,24	LSP1-040-12-20-33-PRO
	50	1	110 ÷ 240	4,16	IP20	0,24	LSP1-050-12-20-33-PRO
	60	1	110 ÷ 240	5	IP20	0,24	LSP1-060-12-20-33-PRO
	100	2	110 ÷ 240	8,33	IP20	0,36	LSP2-100-12-20-33-PRO
	100	2	110 ÷ 240	8,33	IP20	0,34	LSP1-100-12-20-33-PRO
	150	2	110 ÷ 240	12,5	IP20	0,42	LSP1-150-12-20-33-PRO
	200	2	170 ÷ 240	16,6	IP20	0,54	LSP1-200-12-20-33-PRO
	250	2	170 ÷ 240	20,8	IP20	0,60	LSP1-250-12-20-33-PRO
	360	3	170 ÷ 240	30	IP20	0,70	LSP1-360-12-20-33-PRO
Moisture-proof drivers IP67							
	30	1	110 ÷ 240	2,5	IP67	0,30	LSP1-030-12-67-33-PRO
	50	1	110 ÷ 240	4,16	IP67	0,30	LSP2-050-12-67-22-PRO
	50	1	110 ÷ 240	4,16	IP67	0,30	LSP1-050-12-67-33-PRO
	100	2	110 ÷ 240	8,33	IP67	1,10	LSP1-100-12-67-33-PRO
	150	2	170 ÷ 240	12,5	IP67	1,30	LSP1-150-12-67-33-PRO
	200	3	170 ÷ 240	16,6	IP67	2,80	LSP1-200-12-67-33-PRO

Trunk amplifier

RGB trunk amplifier is designed to amplify RGB signal and augment the total power of LED ribbons connected to one controller.

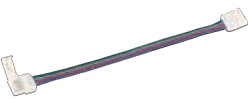
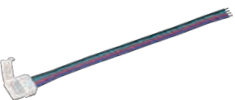
	Description	Power, W	Ribbon type	Degree of protection	Weight, kg	Product ID
	Trunk amplifier PRO RGB	144	RGB	IP20	0,13	LSA-RGB-144-20-12-PRO
	3 channels, 12 V, 4 A, 144 W IEK					

Controllers

The controllers enable the adjustment of LED ribbons light intensity and creation of static and dynamic light scenes. The controllers are operated from remote control using IR or radio channels.

	Output power, W	Number of control channels, pcs.	Max. output current per channel, A	Number of scenes		Remote control	Weight (with remote control), kg	Product ID
				static	dynamic			
Controllers for single-color LED ribbon								
	120	1	10	—	—	white	0,075	LSC2-MONO-120-RF-20-12-W
	120	1	10	—	—	black	0,075	LSC2-MONO-120-RF-20-12-B
	216	3	6	—	—	black	0,4	LSC1-MONO-216-RF-20-12-B
Controllers for multi-white LED ribbon								
	144	2	6	2	—	black	0,4	LSC1-W-WW-144-RF-20-12-B
Controllers for RGB LED ribbon								
	72	3	2	16	4	white	0,076	LSC2-RGB-072-IR-20-12-W
	144	3	4	7	14	white	0,075	LSC2-RGB-144-RF-20-12-W
	144	3	4	7	14	black	0,075	LSC2-RGB-144-RF-20-12-B
	216	3	6	7	11	black	0,41	LSC1-RGB-216-RF-20-12-B
	360	3	10	8	16	grey	0,18	LSC1-RGB-360-RF-20-12-G

Connectors The connectors are designed to join the LED ribbons together. IEK® connectors ensure any desired connection of the ribbons without soldering.

	Description	LED ribbon width, mm	Series of IEK® LED ribbon	Ribbon type	Degree of protection	Purpose	Product ID
	Set of connectors for 8-mm LED ribbons MONO and RGB, 9 pcs. in IEK-eco blister	8	ECO (3528)		IP20	Universal set of connectors for any connections of LED ribbons	LSCON-8-set9
	Connector, 10 pcs. MONO 10 mm (jack - jack) IEK	10	PRO (5050)	single-color	IP20	For rigid connection of LED ribbons	LSCON10-MONO-202-10-PRO
	Connector, 5 pcs. MONO 10 mm (jack - 15 cm - jack) IEK	10	PRO (5050)	single-color	IP20	For flexible connection of LED ribbons	LSCON10-MONO-212-5-PRO
	Connector, 5 pcs. IP65 MONO 10 mm (jack - 15 cm - jack) IEK	10	PRO (5050)	single-color	IP65	For flexible connection of LED ribbons	LSCON10-MONO65-212-5-PRO
	Connector, 5 pcs. MONO 10 mm (jack 5.5 - 15 cm - jack) IEK	10	PRO (5050)	single-color	IP20	For connection between LED ribbon and driver using a jack	LSCON10-MONO-112-5-PRO
	Connector, 5 pcs. MONO 10 mm (15 cm - jack) IEK	10	PRO (5050)	single-color	IP20	For connection between LED ribbon and driver using connection wires	LSCON10-MONO-213-5-PRO
	Connector, 10 pcs. RGB 10 mm (jack - jack) IEK	10	PRO (5050)	RGB	IP20	For rigid connection of LED ribbons	LSCON10-RGB-202-10-PRO
	Connector, 5 pcs. RGB 10 mm (jack - 15 cm - jack) IEK	10	PRO (5050)	RGB	IP20	For flexible connection of LED ribbons	LSCON10-RGB-212-10-PRO
	Connector, 5 pcs. IP65 RGB 10 mm (jack - 15 cm - jack) IEK	10	PRO (5050)	RGB	IP65	For flexible connection of LED ribbons	LSCON10-RGB65-212-10-PRO
	Connector, 5 pcs. RGB 10 mm (15 cm - jack) IEK	10	PRO (5050)	RGB	IP20	For connection between LED ribbon and driver using connection wires	LSCON10-RGB-213-5-PRO



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Spotlights

LED spotlights of SDO series

The LED spotlights of power 10 to 200 W are designed for decorative and facade illumination of buildings, advertising elements, monuments, columns, trees, open areas and objects, sport facilities, industrial zones and for lighting of large areas. They are suitable for both outdoor and indoor use.

The LED spotlights are energy efficient substitutes for the halogen spotlights since they have high luminous efficacy at low power consumption values. They fully correspond to standard halogen spotlights in their shapes and dimensions.

The spotlights design and materials ensure high mechanical strength and complete protection from dust and moisture according to degree of protection IP65 (except for models SD001-10D, SD001-20D, SD001-30D).

SD001-10D, SD001-20D, SD001-30D spotlights having degree of protection IP44 are designed for indoor lighting and can be used for outdoor lighting only in places under cover (under entrance visors, in terraces, verandas, etc.).

Meet the requirements of EN 55015, 60598-2-5, 61000-3-2, 61000-3-3, 61547



Advantages

- The spotlight body is made from corrosion-resistant aluminum alloy.
- Reflector from anodized aluminum.
- Diffuser from toughened heat-resistant glass.
- Corrosion protection coating on all spotlight metal parts.
- Contact assembly from electrical grade copper, heat-resistant tubes.
- Gaskets and glands from silicone.

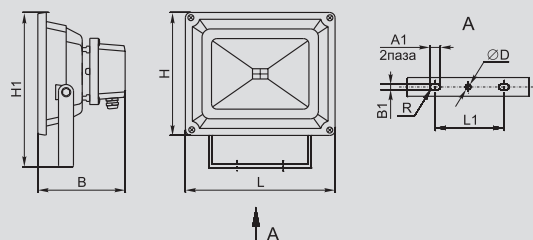
Technical characteristics

Rated voltage, V	230~
Minimum distance to illuminated object, m	1
Class of protection	I
Conductor cross-section, mm ²	0.75–1.5
Type of light source	aperture angle 120°
COB LED	aperture angle 60°
discrete LEDs	aperture angle 100°
SMD LEDs	
Range of operating temperatures, °C	–45...+50

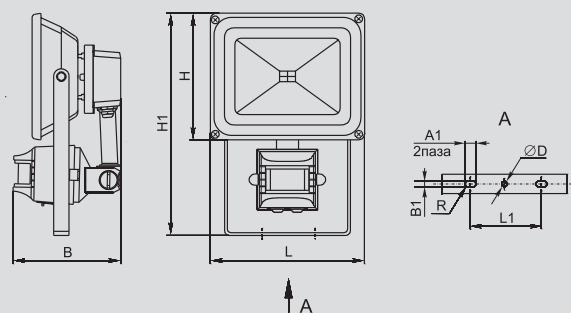
Products' range

	Name	Lamp power, W	Overall dimensions A×B×C, mm	No. of LEDs, pcs.	Beam aperture angle, deg	Package qty, pcs.	Product ID
	SD001-10	10	95×115×82	1 (COB)	120	20	LPD0101-10-K03
	SD001-20	20	156×180×107	1 (COB)	120	10	LPD0101-20-K03
	SD001-30	30	205×226×130	1 (COB)	120	6	LPD0101-30-K03
	SD001-50	50	230×287×143	1 (COB)	120	4	LPD0101-50-K03
	SD001-20P	20	310×235×205	1 (COB)	120	2	LPD0103-20-K03
	SD001-10D	10	172×115×98	1 (COB)	120	20	LPD0102-10-K03
	SD001-20D	20	209×180×108	1 (COB)	120	10	LPD0102-20-K03
	SD001-30D	30	246×226×131	1 (COB)	120	5	LPD0102-30-K03
	SD002-10	10	95×114×85	7 (discrete LEDs)	60	20	LPD0201-10-K03
	SD002-20	20	154×180×110	20 (discrete LEDs)	60	10	LPD0201-20-K03
	SD003-30	30	315×245×80	1 (COB)	120	5	LPD0301-30-K03
	SD003-50	50	405×324×106	1 (COB)	120	4	LPD0301-50-K03
	SD004-100	100	237×287×143	196	100	4	LPD0401-100-K03
	SD004-150	150	416×287×110	318	100	1	LPD0401-150-K03
	SD004-200	200	430×340×118	420	100	1	LPD0401-200-K03

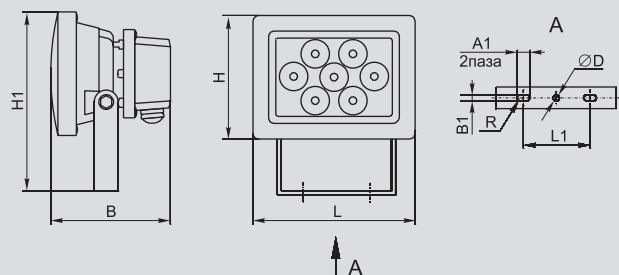
Overall dimensions



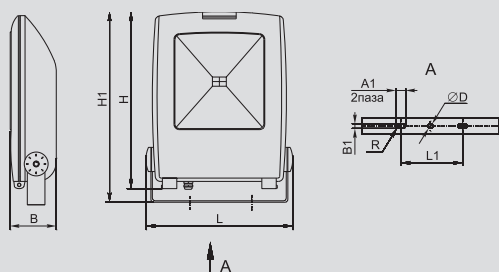
Type	H	H1	L	B	D	A1	B1	R	L1
SD001-10	85	95	115	82	6,2	6,2	4	3,1	72
SD001-20	140	156	180	107	8,2	19,7	8,2	4,1	88
SD001-30	187	205	226	130	13,2	24	10,4	5,2	100
SD001-50	237	230	287	143	13,2	24	10,4	5,2	100



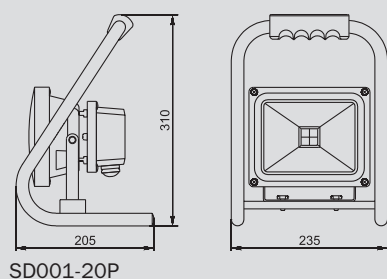
Type	H	H1	L	B	D	A1	B1	R	L1
SD001-10D	85	172	115	98	6,2	6,2	4	3,1	72
SD001-20D	140	209	180	108	8,2	19,7	8,2	4,1	88
SD001-30D	187	246	226	131	13,2	24	10,4	5,2	100



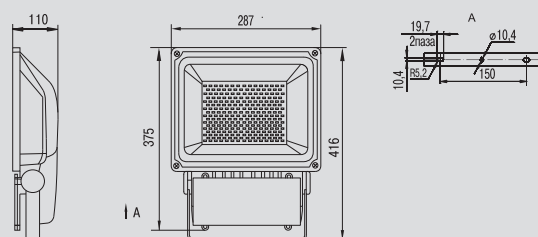
Type	H	H1	L	B	D	A1	B1	R	L1
SD002-10	87	95	114	85	7,8	6,5	5	2,1	60
SD002-20	140	154	180	110	12,2	25,7	10,8	5,4	90



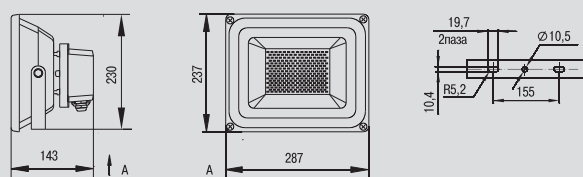
Type	H	H1	L	B	D	A1	B1	R	L1
SD003-30	295	315	245	80	13,4	34	10,2	5,2	82
SD003-50	365	405	324	106	13,4	34	10,2	5,2	100



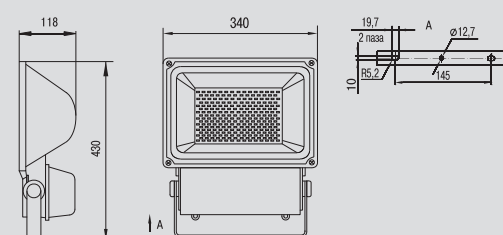
SD001-20P



SD004-150



SD004-100



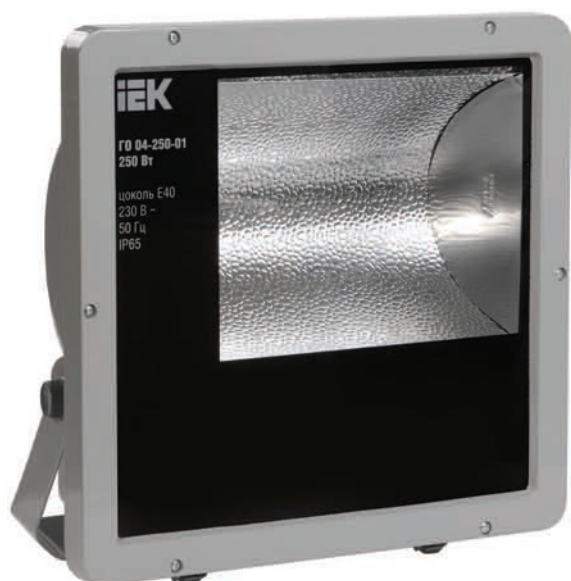
SD004-100

Metal-halide spotlights, IP65

The metal-halide spotlights of power 70, 150, 250, 400 W are designed for outdoor lighting of areas (squares, parkings, construction sites, etc.), illumination of objects (shop windows, expositions, advertising stands and panels, building facades, etc.) as well as indoor lighting in large premises (halls, sport facilities, etc.) under conditions of air convection.

The spotlights design and materials ensure high mechanical strength and complete protection from dust and moisture according to degree of protection IP65.

Meet the requirements of EN 55015, 60598-2-5, 61000-3-2, 61000-3-3, 61547



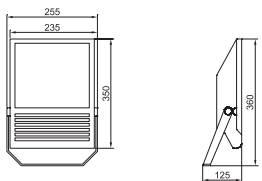
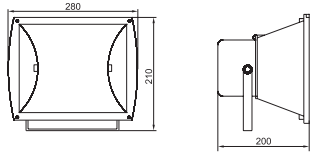
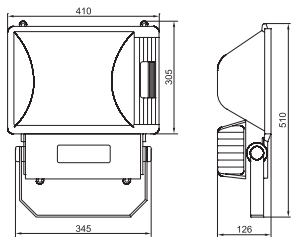
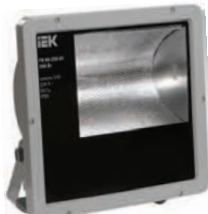
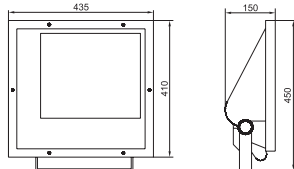
Advantages

- The spotlight body is made from corrosion-resistant aluminum alloy.
- Ceramic lamp holder.
- Light reflector is made from embossed aluminum foil.
- Design of the lamp socket provides for easy lamp installation and removal.
- Toughened heat-resistant glass.
- Steel bracket for spotlight mounting.
- The organosilicon rubber sealing ensures high level of protection from dust and moisture.
- Contact assembly from electrical grade copper.
- All metal parts of the spotlight have corrosion protection coating.

Technical characteristics

Rated voltage, V	230~
Minimum distance to illuminated object, m	1
Electric shock protection class	I
Conductor cross-section, mm ²	0.75–1.5
Type of light source	metal-halide or sodium lamp
Range of operating temperatures, °C	–45...+40

Products' range

	Dimensional drawing	Name	Lamp power, W	Base	Light distribution	Package qty, pcs.	Product ID
		G001-70-02	up to 70	R×7s	asymmetrical	5	LPH001-70-02-K03
		G001-150-02	up to 150	R×7s	asymmetrical	5	LPH001-150-02-K03
		G002-150-01	up to 150	R×7s	symmetrical	4	LPH002-150-01-K03
		G002-70-01	up to 70	R×7s	symmetrical	4	LPH002-70-01-K03
		G002-150-02	up to 150	R×7s	asymmetrical	4	LPH002-150-02-K03
		G002-70-02	up to 70	R×7s	asymmetrical	4	LPH002-70-02-K03
		G003-400-01	up to 400	E40	symmetrical	1	LPH003-400-01-K03
		G003-250-01	up to 250	E40	symmetrical	1	LPH003-250-01-K03
		G003-400-02	up to 400	E40	asymmetrical	1	LPH003-400-02-K03
		G003-250-02	up to 250	E40	asymmetrical	1	LPH003-250-02-K03
		G004-400-01	up to 400	E40	symmetrical	1	LPH004-400-01-K03
		G004-250-01	up to 250	E40	symmetrical	1	LPH004-250-01-K03
		G004-400-02	up to 400	E40	asymmetrical	1	LPH004-400-02-K03
		G004-250-02	up to 250	E40	asymmetrical	1	LPH004-250-02-K03

Halogen spotlights, IP54

The spotlights of power 150, 300, 500, 1000, 1500 W are designed for outdoor lighting of whole areas (squares, parkings, construction sites, etc.) or illumination of objects (shop windows, expositions, advertising stands and panels, building facades, etc.).

The spotlights of power 150, 500 W can also be used for indoor lighting in large premises (halls, sport facilities, parkings, etc.) under conditions of air convection.

The spotlights design and materials ensure high mechanical strength and protection from dust and moisture according to degree of protection IP54 (except for the model IO300K).

The IO300K spotlight having degree of protection IP33 is designed for indoor lighting and can be used for outdoor lighting only in places under cover (under entrance visors, in terraces, verandas, etc.).

Meet the requirements of EN 55015, 60598-2-5, 61000-3-2, 61000-3-3, 61547



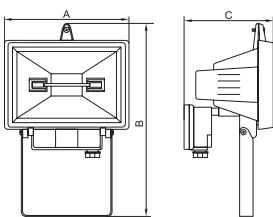
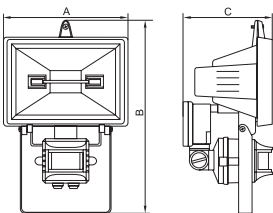
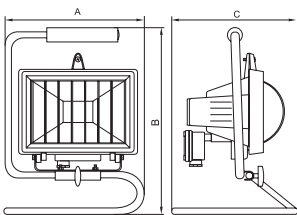
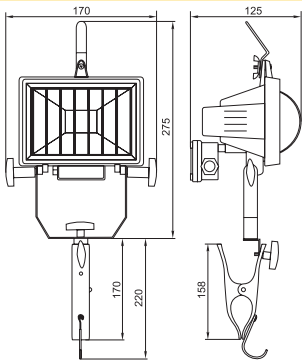
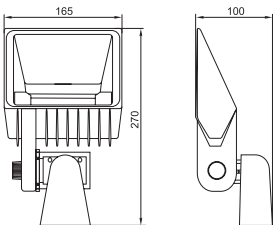
Advantages

- The spotlight body is made from corrosion-resistant aluminum alloy.
- Ceramic lamp holder.
- Light reflector is made from embossed aluminum foil.
- Toughened heat-resistant glass.
- Contact assembly from electrical grade copper.
- Fasteners and other metal parts have corrosion protection coating.
- Rubber holding rings to prevent fastening screws from falling out.
- Color: white, black.

Technical characteristics

Rated voltage, V	230~
Minimum distance to illuminated object, m	1
Class of protection	I
Conductor cross-section, mm ²	
IO 150, 300, 500	0,75 ÷ 1,5
IO 1000, 1500	1,0 ÷ 2,5
Type of light source	halogen incandescent lamp
Base	R7s
Range of operating temperatures, °C	-45 ÷ +50
for IO 150D, IO 500D spotlights	-20 ÷ +40

Products' range

	Dimensional drawing	Name	Lamp power, W	Overall dimensions, A×B×C, mm	Package qty, pcs.	Product ID
		IO 150	150	140×190×110	24	LPI01-1-0150-K01 LPI01-1-0150-K02
		IO 500	500	185×255×135	16	LPI01-1-0500-K01 LPI01-1-0500-K02
		IO 1000	1000	275×300×155	6	LPI01-1-1000-K01 LPI01-1-1000-K02
		IO 1500	1500	345×370×190	6	LPI01-1-1500-K01 LPI01-1-1500-K02
		IO 150D	150	140×210×110	18	LPI02-1-0150-K01 LPI02-1-0150-K02
		IO 500D	500	185×280×135	12	LPI02-1-0500-K01 LPI02-1-0500-K02
		IO 150P	150	185×250×160	12	LPI03-1-0150-K02
		IO 500P	500	230×318×210	8	LPI03-1-0500-K02
		IO 150KL	150		16	LPI04-1-0150-K02
		IO 300K	300	165×270×100	16	LPI05-1-0300-K01 LPI05-1-0300-K02

Industrial inductive luminaires, IP54

They are designed for general lighting of production premises, sports halls, skating-rinks, warehouses, trade and exhibition pavilions, supermarkets and hypermarkets, sport complexes, etc.

The luminaire design and materials ensure high mechanical strength and protection from dust and moisture according to degree of protection IP54.



Advantages

- The reflector from anodized aluminum with polished reflective surface increases the luminaire light flux efficiency by 5–10% on working surface.
- The EBL (electronic ballast) is designed for work with 200 and 300 W inductive lamps.
- No starting current.
- Instantaneous restart is possible.
- Not limited number of ON/OFF cycles.
- No flickering. Working frequency 230 kHz (favorable conditions for comfortable work).
- Low harmonic distortions (THD < 5%).
- Low temperature of the lamp: +60°C...+85°C.
- High stability of light characteristics: after 2000 working hours, the light flux of the inductive lamp decreases by less than 4%.
- Guaranteed lamp lifetime is over 60,000 h, lifetime of the luminaire itself is at least 15 years (replaceable lamp).
- The existing industrial luminaires (e.g. of GSP series) can be adapted for use of the inductive lamp.
- 5-year warranty.

Technical characteristics

Rated voltage, V	230~
Working frequency, Hz	50
Power consumption, W	200, 300
Light flux ripple factor, %, not more	1
Electric shock protection class	I
Degree of dust and moisture protection	IP54
Color temperature, K	5000
Type of light source	inductive lamp
Ballast type	electronic
Maximum distance to illuminated object, m	12, 18
Light flux, lm	17,000; 24,000
Color rendering index, Ra	>80
Luminaire efficiency, %	98
Power factor	0.99
Luminous efficacy, lm/W	85
Range of operating temperatures*, °C	–40...+40

* Optimum range that guarantees achievement of claimed parameters and luminaire lifetime. In case of deviations (from –50 to +70 °C), the luminaire lifetime can be lower.

Design features



Diecast aluminum body of the ballast with powder sprayed coating for corrosion protection. Universal construction for all ballast types.



Robust aluminum hook ensures reliable hanging of the luminaire.



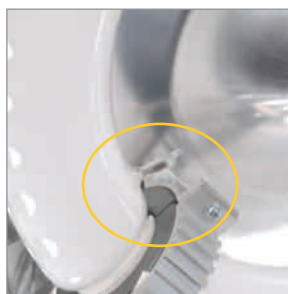
High-purity aluminum reflector with vacuum coating for optimum dispersion of light flux.



Colorless toughened glass has good light transmission properties. Sealing from silicone rubber.

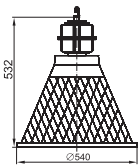
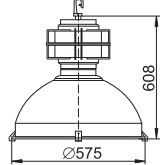
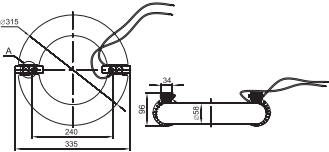
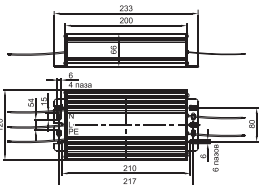


200-watt round inductive lamp with 5-band phosphor.



A small amount of mercury is located in bound state (amalgam) in special compartment of the inductive lamp bulb, making its disposal easier.

Products' range

Overall dimensions		Name	Lamp power, W	Package qty, pcs.	Product ID
		FSP4001I	200	1	LMSP0-4001I-1-200-K03
		FSP4002I	300	1	LMSP0-4002I-1-300-K03
		Conversion kit KFSP4001I	200	1	LMSP1-4001IK-1-200-E40
					

LVO DOWNLIGHT 8" built-in directed light luminaires

The luminaires are designed for indoor lighting in public buildings.

They are used in rooms of various purpose with ceiling height 3–6 meters: shops, malls, exhibition halls, offices, automobile sales centers, staircases, corridors.

The luminaires ensure the light flux directed downwards.

They are used in suspended and boarded ceilings, including of types Armstrong and Grilliato, and installed in ceiling void over 120 mm.



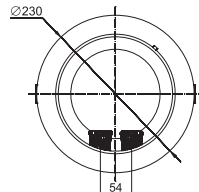
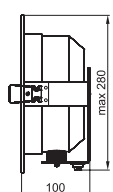
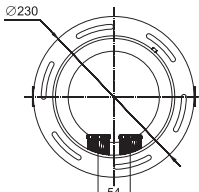
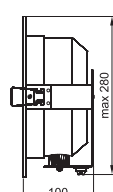
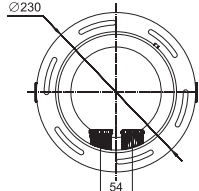
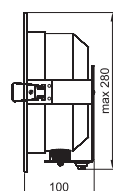
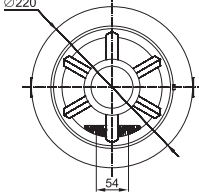
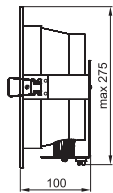
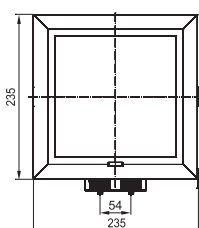
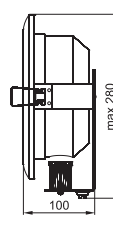
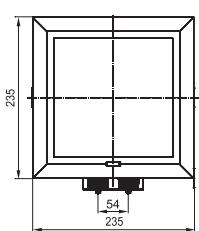
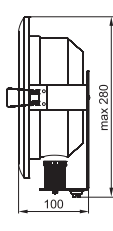
Advantages

- The bearing element has additional stiffeners, which allow the structure to remain lightweight but makes it stronger.
- The luminaire installation does not require additional tools since it is fixed in the ceiling by spreaders.
- The light sources are replaced via removable diffuser; the diffuser is held in open position by a latch, without use of special tools.
- Diffuser: heat-resistant glass, transparent or matted, aluminum grid, without diffuser (depends on the model).
- Heat insulating tubes for mains wiring.
- Corrosion protection coating on luminaire metal parts.

Technical characteristics

Rated voltage, V	220, 240
Working frequency, Hz	50
Maximum power, W	2×26
Type of lamp socket	E27
Type of light source	incandescent or energy-saving lamp UHL4
Climatic version	
Degree of dust and moisture protection	IP20
Electric shock protection class	I
Range of operating temperatures, °C	–40...+40
Cross-section of internal wires, mm ²	0.75...1.5
Installation method	built-in ceiling
Body material	aluminum
Material of bearing element and fixing latches	powder-coated steel

Products' range

Overall dimensions			Name	Diffuser	Color	Weight, kg	Package qty, pcs.	Product ID
			LVO 1501	without glass	white	0,7	10	LLV00-1501-2-26-K01
					chrome	0,7	10	LLV00-1501-2-26-K23
					nickel	0,7	10	LLV00-1501-2-26-K03
			LVO 1502	glass, matted in center	white	0,8	10	LLV00-1502-2-26-K01
					chrome	0,8	10	LLV00-1502-2-26-K23
					nickel	0,8	10	LLV00-1502-2-26-K03
			LVO 1503	glass, matted on edge	white	0,8	10	LLV00-1503-2-26-K01
					chrome	0,8	10	LLV00-1503-2-26-K23
					nickel	0,8	10	LLV00-1503-2-26-K03
			LVO 1504	grid	white	0,8	10	LLV00-1504-2-26-K01
					chrome	0,8	10	LLV00-1504-2-26-K23
					nickel	0,8	10	LLV00-1504-2-26-K03
			LVO 1505	glass, fully matted	white	0,9	10	LLV00-1505-2-26-K01
					nickel	0,9	10	LLV00-1505-2-26-K03
			LVO 1506	glass, matted in center	white	0,9	10	LLV00-1506-2-26-K01
					nickel	0,9	10	LLV00-1506-2-26-K03

DVO DOWNLIGHT built-in ultra-slim luminaires of directed light

Designed for lighting of internal spaces in residential, office and commercial premises.

The built-in luminaires of DVO series produce bright, directed and uniform light.

Due to its compactness and installation method (ceiling and built-in luminaire),

the luminaire will offer a perfect solution for any lighting task, including in the rooms with restricted ceiling voids.

Meet the requirements of EN 55015, 60598-1, 61000-3-2, 61000-3-3, 62031.

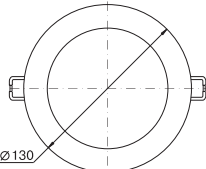
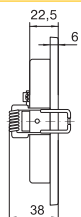
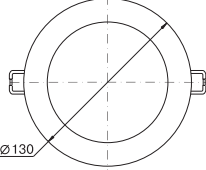
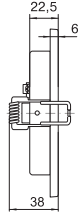
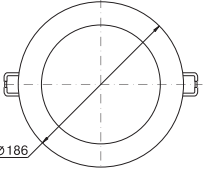
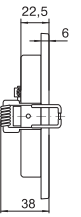
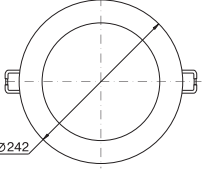
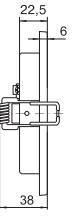


Advantages

- The luminaire body and frame material is aluminum, ensuring little weight, robustness and corrosion protection.
- The diffuser from matted shock-proof polycarbonate facilitates to uniform distribution of light flux.
- The slim body of the luminaire allows for saving of ceiling void, when built-in installation is selected.
- The LEDs distributed over the whole luminaire body surface ensure optimum light flux and uniform illumination.
- Installation methods: built in Armstrong ceilings. Fixing by surface mounting or suspension methods is possible (IEK fixing kits are supplied separately).
- The luminaire installation does not require additional tools since it is fixed in the ceiling by spring return latches.
- The spring return latches are reinforced by plastic attachments preventing undesirable deformation and twisting.
- Corrosion protection coating on luminaire metal parts.
- Color: white, silver.

Technical characteristics

Rated voltage, V	230~
Mains rated frequency, Hz	50
Electric shock protection class	II
Degree of dust and moisture protection	IP20
Range of operating temperatures, °C	-20...+35
Color rendering index, Ra	≥75
Power factor	≥0.9
Ripple factor, %	≤5
Connected conductors cross-sections, mm ²	0.75-1.0
Light source	LED modules

Overall dimensions			Name	Power consumption, W	Light flux, lm	Color temperature, K	Color	Package qty., pcs	Product ID
			DVO 1601	7	530	3000	white	60	LDV00-1601-1-7-K01
			DVO 1602						LDV00-1602-1-7-K01
			DVO 1603	7	530	3000	silver	60	LDV00-1603-1-7-K23
			DVO 1604						LDV00-1604-1-7-K23
			DVO 1605	12	950	4000	white	40	LDV00-1605-1-12-K01
			DVO 1606						LDV00-1606-1-12-K23
			DVO 1607	18	1430	4000	white	20	LDV00-1607-1-18-K01
			DVO 1608						LDV00-1608-1-18-K23

Luminaires of NPP series, IP54

Luminaires with aluminum alloy body

The luminaires are designed for indoor lighting in public and production premises and for outdoor lighting. The luminaire design and materials ensure high mechanical strength and protection from dust and moisture according to degree of protection IP54.

Meet the requirements of EN 60598-1, EN 60598-2-1



Advantages

- The luminaire body and protective grill is made from corrosion-resistant aluminum alloy.
- The luminaire bowl is made from heat-resistant glass (polycarbonate in model 3006).
- Fasteners and metal parts have corrosion protection coating.
- Rubber holding rings to prevent fastening screws from falling out.
- Installation method: on wall/ceiling surface.
- Color: white, black, grey (model 3006).

Technical characteristics

Rated voltage, V	230~
Minimum distance to illuminated object, m	0.5
Electric shock protection class	I
Degree of protection acc. to GOST 14254	IP54
for model 9101	IP33
Connected conductor cross-section, mm ²	0.75–1.5
Type of light source	incandescent or compact fluorescent lamp
Type of light source socket	E27
Range of operating temperatures, °C	–45...+100

Design features



The luminaire body is made from corrosion-resistant aluminum alloy. High quality coating of body with heat-resistant paint.



Ceramic lamp socket E27. Plastic cover on the lamp socket for additional protection from electrical shock.



The luminaire protective grill is made from corrosion-resistant aluminum alloy.

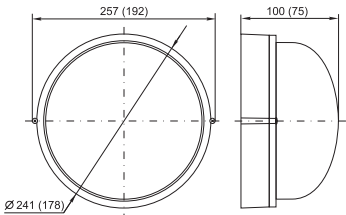
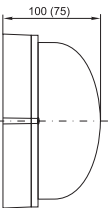
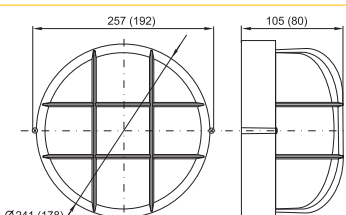
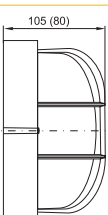
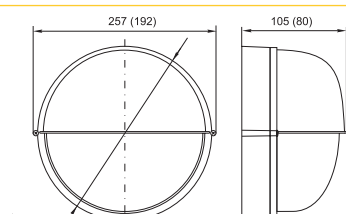
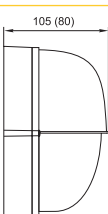
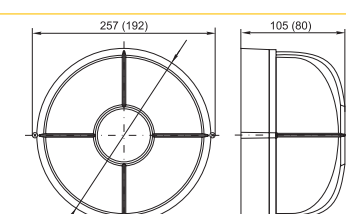
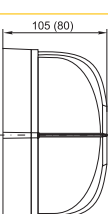
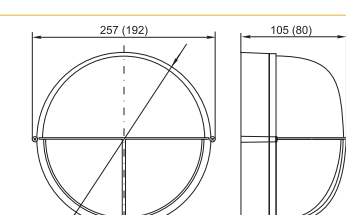
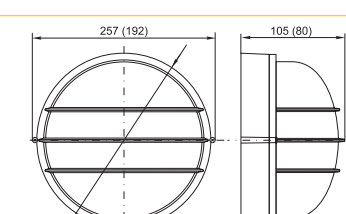
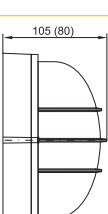


Fasteners and metal parts have corrosion protection coating; rubber holding rings prevent fastening screws from falling out.

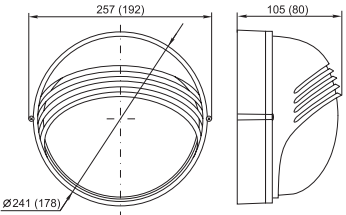
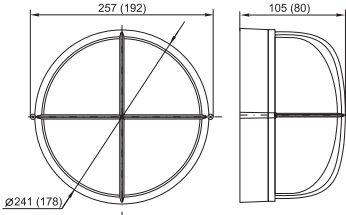
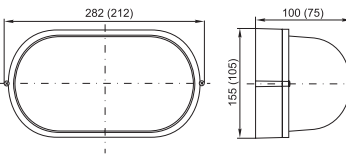
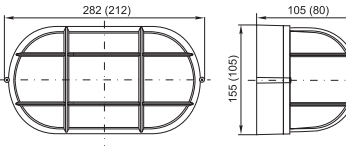
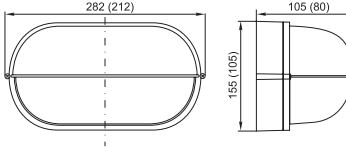
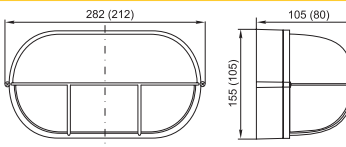
Dimensions of fluorescent lamps that can be installed into the luminaires

Luminaire size	Overall dimensions of lamps, mm	
	maximum length	maximum diameter
1101 ÷ 1108	140	65
1301 ÷ 1308	90	65
1201 ÷ 1208	180	80
1401 ÷ 1408	110	65
2501	110	65
3006	140	80
9101	100	70

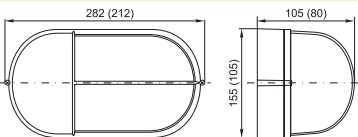
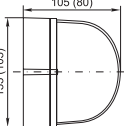
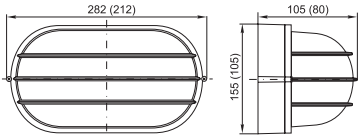
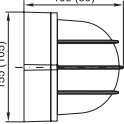
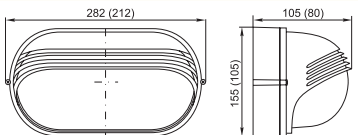
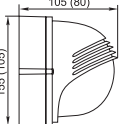
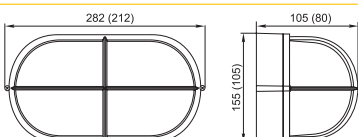
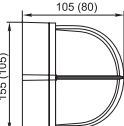
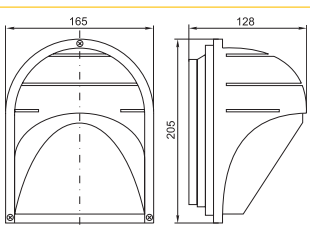
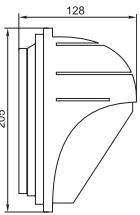
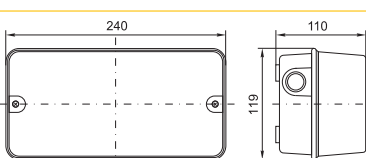
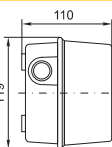
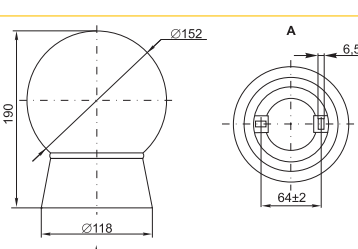
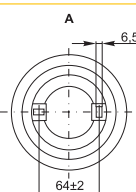
Products' range

Overall dimensions*			Name	Lamp power, W	Color	Package qty., pcs	Product ID
			NPP 1301	60	white black	12	LNPP0-1301-1-060-K01 LNPP0-1301-1-060-K02
			NPP 1101	100	white black	8	LNPP0-1101-1-100-K01 LNPP0-1101-1-100-K02
			NPP 1302	60	white black	12	LNPP0-1302-1-060-K01 LNPP0-1302-1-060-K02
			NPP 1102	100	white black	8	LNPP0-1102-1-100-K01 LNPP0-1102-1-100-K02
			NPP 1303	60	white black	12	LNPP0-1303-1-060-K01 LNPP0-1303-1-060-K02
			NPP 1103	100	white black	8	LNPP0-1103-1-100-K01 LNPP0-1103-1-100-K02
			NPP 1304	60	white black	12	LNPP0-1304-1-060-K01 LNPP0-1304-1-060-K02
			NPP 1104	100	white black	8	LNPP0-1104-1-100-K01 LNPP0-1104-1-100-K02
			NPP 1305	60	black	12	LNPP0-1305-1-060-K02
			NPP 1105	100	white black	8	LNPP0-1105-1-100-K01 LNPP0-1105-1-100-K02
			NPP 1306	60	white black	12	LNPP0-1306-1-060-K01 LNPP0-1306-1-060-K02
			NPP 1106	100	white black	8	LNPP0-1106-1-100-K01 LNPP0-1106-1-100-K02

* Dimensions of 60-watt luminaires are indicated in brackets.

Overall dimensions*			Name	Lamp power, W	Color	Package qty., pcs	Product ID
			NPP 1307	60	white black	12	LNPP0-1307-1-060-K01 LNPP0-1307-1-060-K02
			NPP 1107	100	white black	8	LNPP0-1107-1-100-K01 LNPP0-1107-1-100-K02
			NPP 1308	60	white black	12	LNPP0-1308-1-060-K01 LNPP0-1308-1-060-K02
			NPP 1108	100	white black	8	LNPP0-1108-1-100-K01 LNPP0-1108-1-100-K02
			NPP 1401	60	white black	12	LNPP0-1401-1-060-K01 LNPP0-1401-1-060-K02
			NPP 1201	100	white black	8	LNPP0-1201-1-100-K01 LNPP0-1201-1-100-K02
			NPP 1402	60	white black	12	LNPP0-1402-1-060-K01 LNPP0-1402-1-060-K02
			NPP 1202	100	white black	8	LNPP0-1202-1-100-K01 LNPP0-1202-1-100-K02
			NPP 1403	60	white black	12	LNPP0-1403-1-060-K01 LNPP0-1403-1-060-K02
			NPP 1203	100	white black	8	LNPP0-1203-1-100-K01 LNPP0-1203-1-100-K02
			NPP 1404	60	white black	12	LNPP0-1404-1-060-K01 LNPP0-1404-1-060-K02
			NPP 1204	100	black	8	LNPP0-1204-1-100-K02

* Dimensions of 60-watt luminaires are indicated in brackets.

Overall dimensions*			Name	Lamp power, W	Color	Package qty., pcs	Product ID
			NPP 1405	60	black	12	LNPP0-1405-1-060-K02
			NPP 1205	100	white black	8	LNPP0-1205-1-100-K01 LNPP0-1205-1-100-K02
			NPP 1406	60	white black	12	LNPP0-1406-1-060-K01 LNPP0-1406-1-060-K02
			NPP 1206	100	white black	8	LNPP0-1206-1-100-K01 LNPP0-1206-1-100-K02
			NPP 1407	60	white black	12	LNPP0-1407-1-060-K01 LNPP0-1407-1-060-K02
			NPP 1207	100	white black	8	LNPP0-1207-1-100-K01 LNPP0-1207-1-100-K02
			NPP 1408	60	white black	12	LNPP0-1408-1-060-K01 LNPP0-1408-1-060-K02
			NPP 1208	100	white black	8	LNPP0-1208-1-100-K01 LNPP0-1208-1-100-K02
			NPP 2501	60	white black	12	LNPP0-2501-1-060-K01 LNPP0-2501-1-060-K02
			NPP 3006	60	grey	18	LNPP0-3006-1-060-K01
			NPP 9101	60	black	12	LNPP0-9101-1-060-K01

* Dimensions of 60-watt luminaires are indicated in brackets.

Built-in luminaires with aluminum alloy body

The luminaires are designed for indoor lighting in public and production premises and for outdoor lighting. The luminaire design and materials ensure high mechanical strength and protection from dust and moisture according to degree of protection IP54.

TM

Meet the requirements of EN 60598-1, EN 60598-2-1



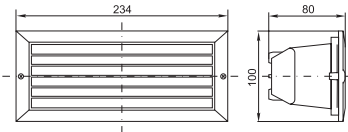
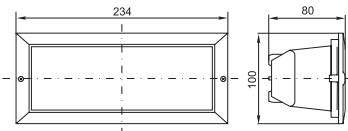
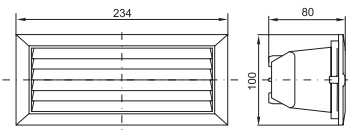
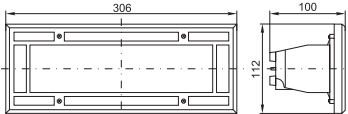
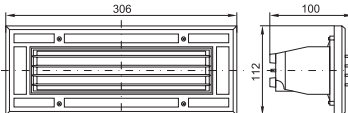
Advantages

- The luminaire body and protective grill are made from corrosion-resistant aluminum alloy.
- The luminaire bowl is made from heat-resistant glass.
- Fasteners and metal parts have corrosion protection coating.
- Rubber holding rings to prevent fastening screws from falling out.
- Installation method: built-in.
- Color: white, black.

Technical characteristics

Rated voltage, V	230~
Minimum distance to illuminated object, m	0.5
Electric shock protection class	I
Degree of protection acc. to GOST 14254	IP54
Connected conductor cross-section, mm ²	0.75...1.5
Type of light source	incandescent or compact fluorescent lamp
Type of light source socket	E27
Range of operating temperatures, °C	-45...+40

Products' range

Overall dimensions			Name	Lamp power, W	Color	Package qty., pcs	Product ID
			NVP 3101	60	white	18	LNPP0-3101-1-060-K01
					black		LNPP0-3101-1-060-K02
			NVP 3102	60	white	18	LNPP0-3102-1-060-K01
					black		LNPP0-3102-1-060-K02
			NVP 3103	60	white	18	LNPP0-3103-1-060-K01
					black		LNPP0-3103-1-060-K02
			NVP 3114	60	white	12	LNPP0-3114-1-060-K01
					black		LNPP0-3114-1-060-K02
			NVP 3118	60	white	12	LNPP0-3118-1-060-K01
					black		LNPP0-3118-1-060-K02

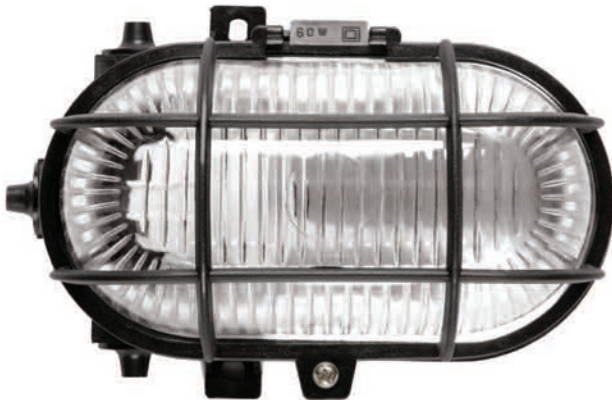
Dimensions of fluorescent lamps that can be installed into luminaires

Luminaire size	Overall dimensions of lamps, mm	
	maximum length	maximum diameter
3101÷3103	125	65
3114÷3118	180	75

Luminaires with plastic body

The luminaires are designed for indoor lighting in public and production premises with increased content of dust and moisture and for outdoor lighting.

Meet the requirements of EN 60598-1, EN 60598-2-1



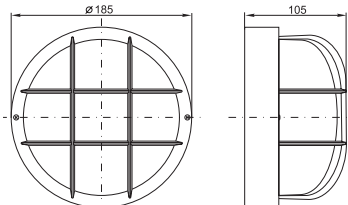
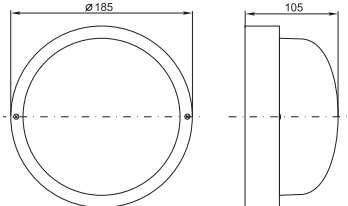
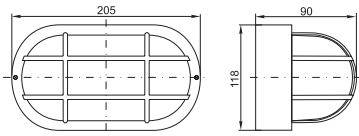
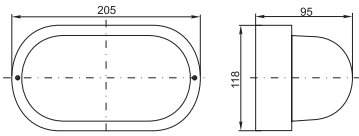
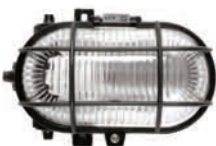
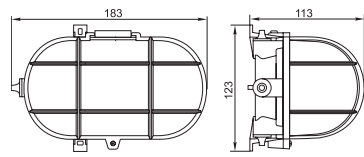
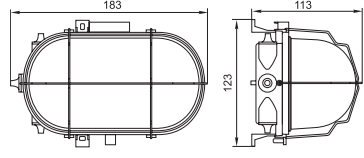
Advantages

- The luminaire body and protective grill are made from plastic. Model 2604a has steel protective grill.
- The luminaire bowl is made from heat-resistant fluted glass.
- All models are fitted with light reflectors from aluminum foil.
- Fasteners and metal parts have corrosion protection coating.
- Rubber holding rings to prevent fastening screws from falling out.
- Installation method: on wall/ceiling surface.
- Color: white, black.

Technical characteristics

Rated voltage, V	230~
Minimum distance to illuminated object, m	0.5
Electric shock protection class	II
Degree of protection acc. to GOST 14254	IP54
Connected conductor cross-section, mm ²	0.75–1.5
Type of light source	incandescent or compact fluorescent lamp
Type of light source socket	E27
Range of operating temperatures, °C	–45...+40

Products' range

Overall dimensions			Name	Lamp power, W	Color	Package qty., pcs	Product ID
			NPP 2602	60	white black	18	LNPP0-2602-1-060-K01 LNPP0-2602-1-060-K02
			NPP 2602A	60	white black	18	LNPP0-2602A-1-060-K01 LNPP0-2602A-1-060-K02
			NPP 2603	60	white black	18	LNPP0-2603-1-060-K01 LNPP0-2603-1-060-K02
			NPP 2603A	60	white black	18	LNPP0-2603A-1-060-K01 LNPP0-2603A-1-060-K02
			NPP 2604	60	white black	24	LNPP0-2604-1-060-K01 LNPP0-2604-1-060-K02
			NPP 2604A	60	white black	24	LNPP0-2604A-1-060-K01 LNPP0-2604A-1-060-K02

Dimensions of fluorescent lamps that can be installed into luminaires

Luminaire size	Overall dimensions of lamps, mm	
	maximum length	maximum diameter
2602(a)	80	65
2603(a)	110	65
2604(a)	85	65

Luminaires of NPO series with motion detector

The luminaires are designed for indoor lighting in residential and public premises (corridors, entrances, auxiliary rooms, etc.).

The luminaires have built-in IR motion detector. The detector automatically switches on and off the luminaire within specified time interval, depending on presence of moving objects in the detector sensing area and illumination level.



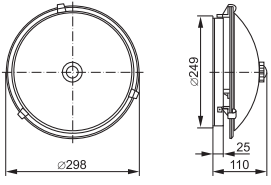
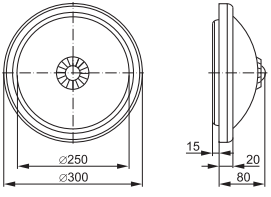
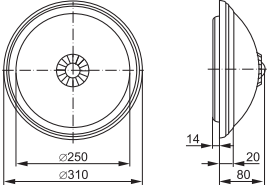
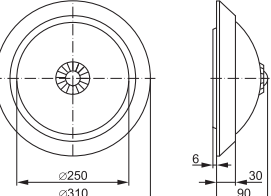
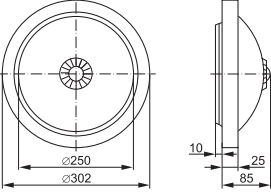
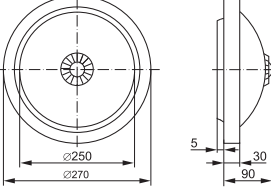
Advantages

- Luminaire body from steel.
- Diffuser from matted glass.
- Ceramic lamp socket.
- Fasteners and metal parts have corrosion protection coating.
- Installation method: on wall/ceiling surface.

Technical characteristics

Rated operating voltage, V	230~
Electric shock protection class	I
Degree of protection	IP20
Connected conductor cross-section, mm ²	0.75–1.5
Type of light source	two incandescent or compact fluorescent lamps
Type of lamp socket	E27

Products' range

	Overall dimensions	Name	Lamp power*, W	Color	Package qty., pcs	Product ID
		NPO 3231D	2×25	white	4	LNP00-3231D-2-025-K01
		NPO 3233D	2×25	white	6	LNP00-3233D-2-025-K01
		NPO 3234D	2×25	white	6	LNP00-3234D-2-025-K01
		NPO 3235D	2×25	white	6	LNP00-3235D-2-025-K01
		NPO 3236D	2×25	white	6	LNP00-3236D-2-025-K01
		NPO 3237D	2×25	white	6	LNP00-3237D-2-025-K01

Technical characteristics of built-in IR motion detector

Minimum distance to illuminated object, m	0,5
Minimum illumination level required for detector activation, lux	5
Range of time settings for motion detector activation, s	5 ÷ 480
Maximum detection range, m	6
Detector viewing angle	120°×360°

Luminaires of LPO series with fluorescent lamps

Luminaires with linear fluorescent lamps

The luminaires are designed for general and local lighting in residential and public premises (malls, schools, hotels, restaurants), local lighting of objects in residential premises (illumination of mirrors, paintings, working surfaces in kitchens).



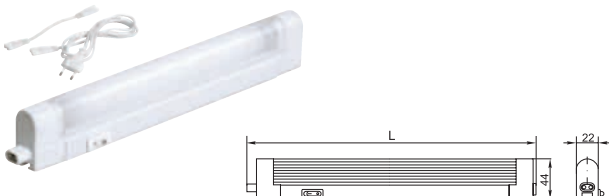
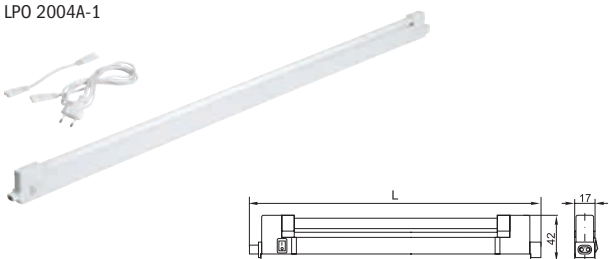
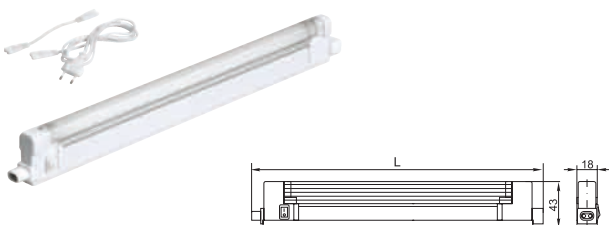
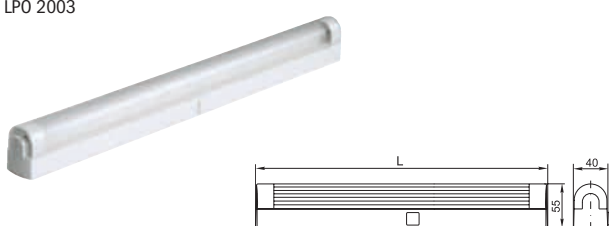
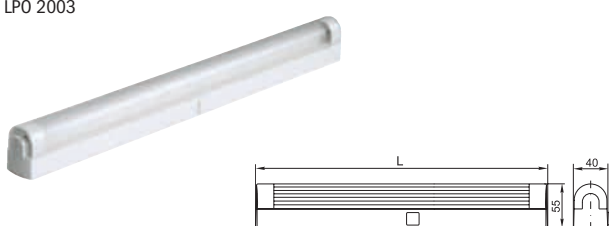
Advantages

- Metal or plastic body.
- All luminaires are fitted with electronic ballasts (EBL).
- The luminaires are fitted with linear fluorescent lamps, depending on the variant:
 - lamp diameter 12 mm (T4), lamp socket G5;
 - lamp diameter 16 mm (T5), lamp socket G5;
 - lamp diameter 26 mm (T8), lamp socket G13.
- LPO 2001, 2004A-1, 2004A-2, 2004B luminaires are fitted with power cord 1.8 m and connector cable 0.15 m for daisy chain connection; LPO 2018B luminaire – with power cord 1.7 m with switch; LPO 2018C luminaire – with power cord 0.75 m, LPO 3016 luminaire – with power cord 0.22 m.

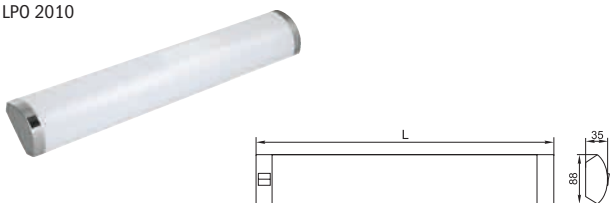
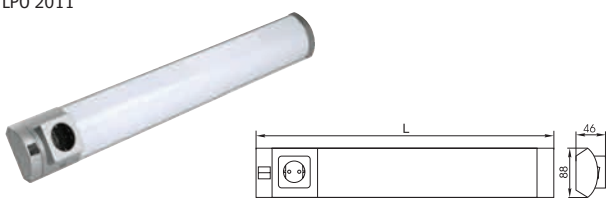
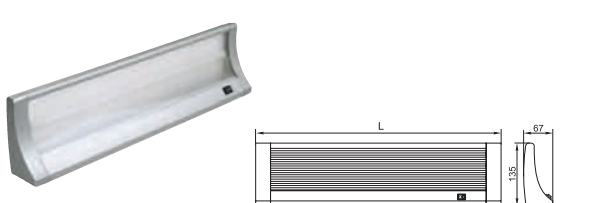
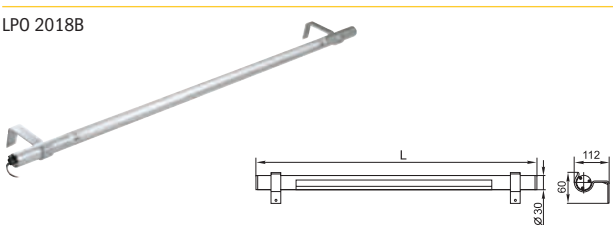
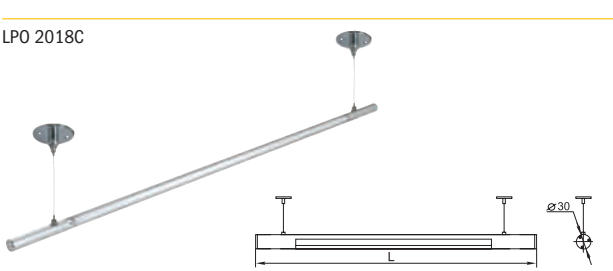
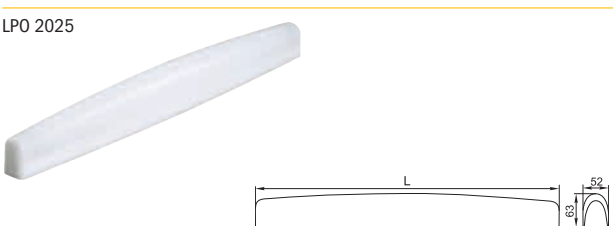
Technical characteristics

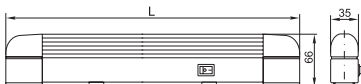
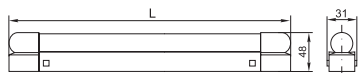
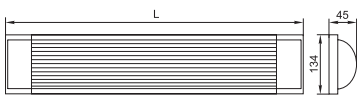
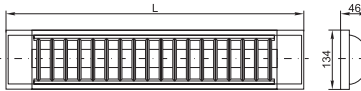
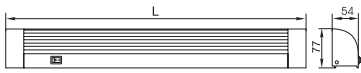
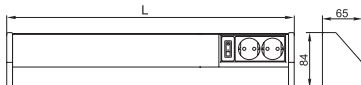
Rated voltage, V	230~
Minimum distance to illuminated object, m	0.5
Degree of protection acc. to GOST 14254-96	IP20
Connected conductor cross-section, mm ²	0.75–1.5
Color temperature, K	6400
Type of light source	fluorescent lamp
Range of operating temperatures, °C	–10...+40

Products' range

Name	Overall dimensions	Length L, mm	Lamp power, W	Description	Package qty, pcs.	Product ID
LPO 2001		279	6	Plastic body (with socket and plug for daisy chain connection built in the body*).	30	LLP00-2001-1-06-K01
		355	8	Diffuser from fluted acrylic plastic.	30	LLP00-2001-1-08-K01
		583	13	Protection class II.	30	LLP00-2001-1-13-K01
		915	21	Fluorescent lamp T5.	20	LLP00-2001-1-21-K01
		1216	28	Base G5. Color: white. Power cord: 1.8 m. Connector cable: 0.15 m.	20	LLP00-2001-1-28-K01
LPO 2004A-1		276	6	Plastic body (with socket and plug for daisy chain connection built in the body*).	30	LLP00-2004A1-1-06-K01
		397	8	Without diffuser.	30	LLP00-2004A1-1-08-K01
		427	12	Protection class II.	30	LLP00-2004A1-1-12-K01
		525	16	Fluorescent lamp T4.	30	LLP00-2004A1-1-16-K01
		622	20	Base G5. Color: white.	30	LLP00-2004A1-1-20-K01
		710	24	Power cord: 1.8 m.	20	LLP00-2004A1-1-24-K01
LPO 2004B		823	30	Connector cable: 0.15 m.	20	LLP00-2004A1-1-30-K01
		276	6	Plastic body (with socket and plug for daisy chain connection built in the body*).	30	LLP00-2004B-1-06-K01
		397	8	Diffuser from fluted acrylic plastic.	30	LLP00-2004B-1-08-K01
		427	12	Protection class II.	30	LLP00-2004B-1-12-K01
		525	16	Fluorescent lamp T4.	30	LLP00-2004B-1-16-K01
		622	20	Base G5. Color: white.	30	LLP00-2004B-1-20-K01
LPO 2003		310	8	Power cord: 1.8 m.	30	LLP00-2004B-1-24-K01
		540	13	Connector cable: 0.15 m.	30	LLP00-2004B-1-30-K01
LPO 2003		310	8	Plastic body.	30	LLP00-2003-1-08-K01
		540	13	Diffuser from fluted acrylic plastic. Protection class II. Fluorescent lamp T5. Base G5. Color: white.	30	LLP00-2003-1-13-K01

* Up to 90 luminaires can be connected butt-to-butt or using the connection cords with molded socket and plug (total power must not exceed 550 W).

Name	Overall dimensions	Length L, mm	Lamp power, W	Description	Package qty, pcs.	Product ID
LPO 2010		604	13	Metal body. Diffuser from matted acrylic plastic. Protection class I. Fluorescent lamp T5. Base G5. Color: white.	20	LLP00-2010-1-13-K01
LPO 2011		679	13	Metal body. Diffuser from matted acrylic plastic. Protection class I. Fluorescent lamp T5. Base G5. Color: white.	20	LLP00-2011-1-13-K01
LPO 2014		560	13	Metal body. Diffuser from matted acrylic plastic. Protection class I. Fluorescent lamp T5. Base G5. Color: grey.	12	LLP00-2014-1-13-K03
LPO 2018B		500 576 805 1137	6 8 13 21	Metal body. Diffuser from fluted acrylic plastic. Protection class I. Fluorescent lamp T5. Base G5. Color: grey. Power cord: 1.7 m, with switch.	30 30 30 30	LLP00-2018B-1-06-K03 LLP00-2018B-1-08-K03 LLP00-2018B-1-13-K03 LLP00-2018B-1-21-K03
LPO 2018C		826 1126 1477	14 21 28	Metal body. Diffuser from fluted acrylic plastic. Protection class I. Fluorescent lamp T5. Base G5. Color: grey. Power cord: 0.75 m.	20 20 20	LLP00-2018C-1-14-K03 LLP00-2018C-1-21-K03 LLP00-2018C-1-28-K03
LPO 2025		550	13	Plastic molded body. Diffuser from matted acrylic plastic. Protection class II. Fluorescent lamp T5. Base G5. Color: white.	20	LLP00-2025-1-13-K01

Name	Overall dimensions	Length L, mm	Lamp power, W	Description	Package qty, pcs.	Product ID
LPO 3011	 	395	10	Metal body.	20	LLP00-3011-1-10-K01
		500	15	Diffuser from fluted acrylic plastic.	20	LLP00-3011-1-15-K01
		654	18	Protection class I.	20	LLP00-3011-1-18-K01
		958	30	Fluorescent lamp T8.	12	LLP00-3011-1-30-K01
		1279	36	Base G13. Color: white.	12	LLP00-3011-1-36-K01
LPO 3016	 	378	10	Metal body.	30	LLP00-3016-1-10-K01
		484	15	Without diffuser.	30	LLP00-3016-1-15-K01
		636	18	Protection class II.	30	LLP00-3016-1-18-K01
		941	30	Fluorescent lamp T8.	30	LLP00-3016-1-30-K01
		1245	36	Base G13. Color: white. Power cord: 0.22 m.	20	LLP00-3016-1-36-K01
LPO 3017	 	639	2×18	Metal body.	12	LLP00-3017-2-18-K01
		942	2×30	Diffuser from fluted acrylic plastic.	12	LLP00-3017-2-30-K01
		1246	2×36	Protection class I.	12	LLP00-3017-2-36-K01
LPO 3017 with grill	 	637	2×18	Metal body.	12	LLP01-3017-2-18-K01
		941	2×30	Protective grill.	12	LLP01-3017-2-30-K01
		1246	2×36	Protection class I.	12	LLP01-3017-2-36-K01
LPO 3018	 	502	15	Metal body.	20	LLP00-3018-1-15-K01
		654	18	Diffuser from fluted acrylic plastic.	20	LLP00-3018-1-18-K01
		958	30	Protection class I.	12	LLP00-3018-1-30-K01
		1263	36	Fluorescent lamp T8.	12	LLP00-3018-1-36-K01
LPO 3020	 	499	10	Base G13.	12	LLP00-3020-1-10-K01
		602	15	Color: white.	12	LLP00-3020-1-15-K01
		757	18	Diffuser from fluted acrylic plastic.	12	LLP00-3020-1-18-K01
		1060	30	Protection class I.	12	LLP00-3020-1-30-K01
		1365	36	Fluorescent lamp T8.	12	LLP00-3020-1-36-K01

Luminaires with compact fluorescent lamps

The luminaires are designed for general and local lighting in residential and public premises.

The luminaires with degrees of protection IP44 and IP54 can be used in production premises with increased content of dust and moisture and for outdoor lighting (under cover).



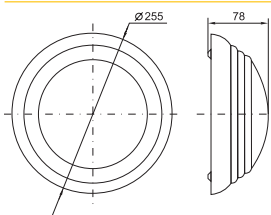
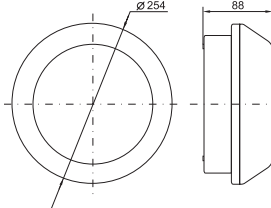
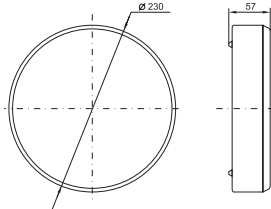
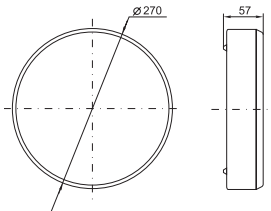
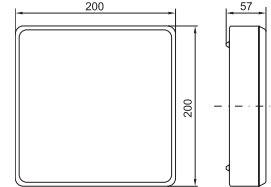
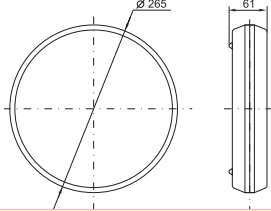
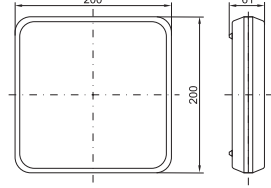
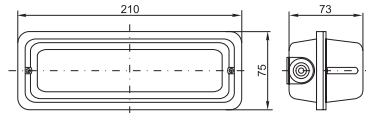
Advantages

- Plastic body.
- The luminaires are fitted with compact U-shaped fluorescent lamps.
- All versions, except for LPO 3053, are fitted with electronic ballasts.
- LPO 3053 luminaires are fitted with ballasts with starters.

Technical characteristics

Rated voltage, V	230~
Minimum distance to illuminated object, m	0.5
Electric shock protection class	II
Connected conductor cross-section, mm ²	0.75÷1.5
Type of light source	compact fluorescent lamp
Type of light source socket	G23
Range of operating temperatures, °C	–20...+40

Products' range

	Overall dimensions	Name	Lamp power, W	Description	Package qty, pcs.	Product ID
		LP0 3019	2×9	Diffuser from semi-transparent polycarbonate. Reflector from fluted aluminum foil. Degree of protection IP44. Electronic ballast.	10	LLP00-3019-2-09-K01
		LP0 3041	2×9	Diffuser from matted acrylic plastic. Degree of protection IP44. Electronic ballast.	10	LLP00-3041-2-09-K01
		LP0 3024	9	Diffuser from matted acrylic plastic. Degree of protection IP20. Electronic ballast.	10	LLP00-3024-1-09-K01
		LP0 3025	2×9	Diffuser from matted acrylic plastic. Degree of protection IP20. Electronic ballast.	10	LLP00-3025-2-09-K01
		LP0 3026	9	Diffuser from matted acrylic plastic. Degree of protection IP20. Electronic ballast.	10	LLP00-3026-1-09-K01
		LP0 3051	2×9	Diffuser from matted acrylic plastic. Degree of protection IP54. Electronic ballast.	10	LLP00-3051-2-09-K01
		LP0 3052	2×9	Diffuser from matted acrylic plastic. Degree of protection IP54. Electronic ballast.	10	LLP00-3052-2-09-K01
		LP0 3053	9	Diffuser from polycarbonate. Degree of protection IP54. Ballast with starter.	12	LLP00-3053-1-09-K01

LED luminaires

Linear LED luminaires of DBO series

The luminaires are designed for general and local lighting in residential premises (kitchen areas, furniture recesses, cabinets), auxiliary and public premises (shops, offices, etc.), as well as for lighting of housing and utility objects (models DBO 1009 – 1012).

Meet the requirements of EN 55015, 60598-1, 60598-2-1, 61547



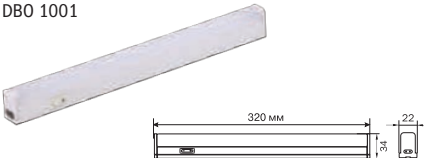
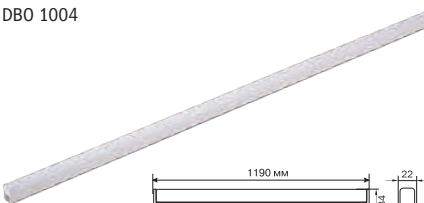
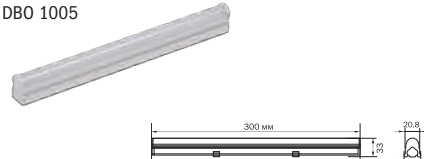
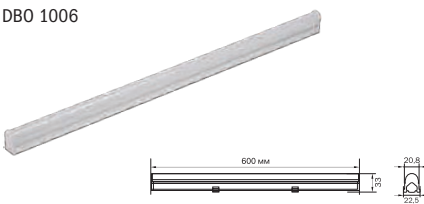
Advantages

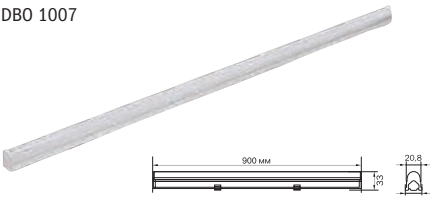
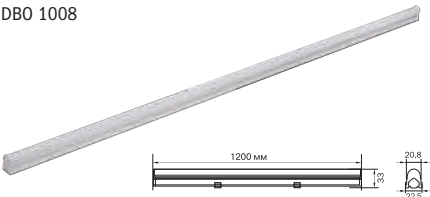
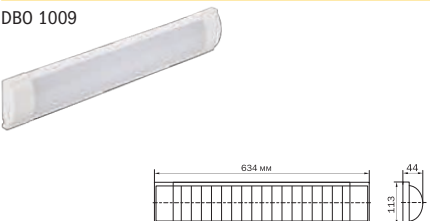
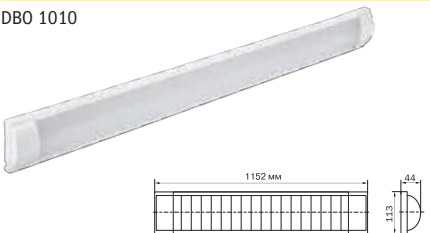
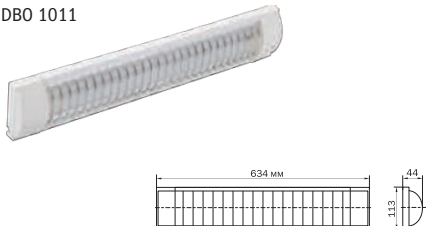
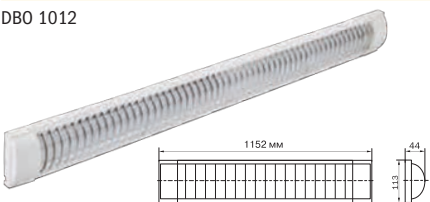
- Metal, aluminum or PVC body.
- Diffuser from high-strength polycarbonate with light stabilizing additives.
- DBO 1001–1008 luminaires can be joined using flexible and rigid types of connection. They are fitted with flexible 0.15-meter connector cable for daisy chain connection (up to 10 luminaires in a row) and 1.5-meter power cord.
- The LEDs distributed over the whole length of device body ensure uniform illumination of space.
- Color: white.

Technical characteristics

Rated voltage, V	110-230~
Range of operating temperatures, °C	-10 ÷ +50
Power factor, at least	0.8
Ripple factor, not more	0.05
Color rendering index, at least	70
Degree of protection	IP20
Color temperature, K	4000
Electric shock protection class	I (except for DBO 1001–1004: II)
Light source	modules with SMD LEDs
LED lifetime, h, at least	30,000

Products' range

Name	Overall dimensions	Lamp power, W	Light flux, lm	Body material	Length (L), mm	Description	Package qty, pcs.	Product ID
DBO 1001		3	250	PVC	320	Body with built-in socket and plug for daisy chain connection. Power cord 1.5 m, connector cable 0.15 m.	30	LDB00-1001-0-3-K01
DBO 1002		5	470	PVC	590	Body with built-in socket and plug for daisy chain connection. Power cord 1.5 m, connector cable 0.15 m.	30	LDB00-1002-0-5-K01
DBO 1003		8	750	PVC	890	Body with built-in socket and plug for daisy chain connection. Power cord 1.5 m, connector cable 0.15 m.	20	LDB00-1003-0-8-K01
DBO 1004		11	1000	PVC	1190	Body with built-in socket and plug for daisy chain connection. Power cord 1.5 m, connector cable 0.15 m.	20	LDB00-1004-0-11-K01
DBO 1005		4	350	aluminum	300	Body with built-in socket and plug for daisy chain connection. Power cord 1.5 m, connector cable 0.15 m.	30	LDB00-1005-0-4-K03
DBO 1006		7	660	aluminum	600	Body with built-in socket and plug for daisy chain connection. Power cord 1.5 m, connector cable 0.15 m.	30	LDB00-1006-0-7-K03

Name	Overall dimensions	Lamp power, W	Light flux, lm	Body material	Length (L), mm	Description	Package qty, pcs.	Product ID
DBO 1007		12	1060	aluminum	900	Body with built-in socket and plug for daisy chain connection. Power cord 1.5 m, connector cable 0.15 m.	30	LDB00-1007-0-12-K03
DBO 1008		16	1300	aluminum	1200	Body with built-in socket and plug for daisy chain connection. Power cord 1.5 m, connector cable 0.15 m.	30	LDB00-1008-0-16-K03
DBO 1009		2×9	1400	metal	634	–	12	LDB00-1009-2-9-K01
DBO 1010		2×18	2800	metal	1152	–	12	LDB00-1010-2-18-K01
DBO 1011		2×9	1100	metal	634	With PVC grill	12	LDB01-1011-2-9-K01
DBO 1012		2×18	2200	metal	1152	With PVC grill	12	LDB01-1012-2-18-K01

LED luminaires of DPO series

The luminaires are designed for indoor lighting in household, public and production premises with increased content of dust and moisture. The luminaire design and materials ensure high mechanical strength and protection from dust and moisture according to degree of protection IP54.

Meet the requirements of EN 55015, 60598-2-1, 61000-3-2, 61000-3-3, 61547



Advantages

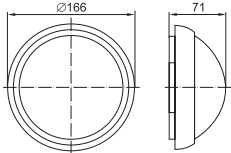
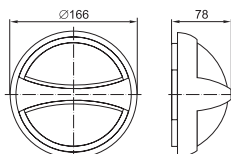
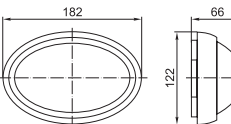
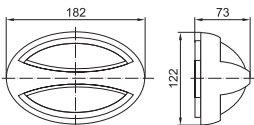
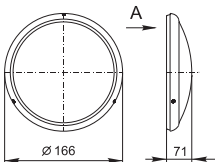
- The luminaire body is made from corrosion-resistant aluminum alloy and shock-proof plastic, ensuring anti-vandal properties of the luminaire and necessary removal of heat.
- The luminaire bowl is made from matted acrylic plastic and matted polycarbonate (for plastic models) that ensure optimum diffusing of light flux.
- Reliable driver with power factor ≥ 0.8 .
- Fasteners and other metal parts of the luminaire have corrosion protection coating.
- Installation method: on wall/ceiling surface.

Technical characteristics

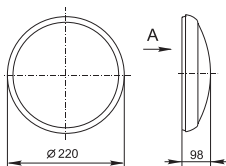
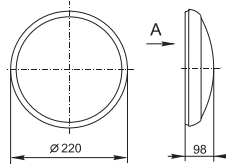
Rated voltage, V	110 ÷ 240~
Rated frequency, Hz	50
Protection class for models with aluminum body	I
Protection class for models with plastic body	II
Color temperature	4500 K
Color rendering index	$R_a \geq 75$
Power factor, at least	0.8
Ripple factor, not more	0.05
Operating temperature, °C	-30 to +40
Rated lifetime, h, at least	30,000
Connected conductor cross-section, mm ²	0.5–1.5
Color	white, grey

Products' range

Models with aluminum body

	Overall dimensions	Name	Power, W	Color temperature, K	Light flux, lm	Package qty, pcs.	Product ID
		DP0 1301	6	5500	370	12	LDP00-1301-6-6K03
		DP0 1303	6	5500	370	12	LDP00-1303-6-6K03
		DP0 1401	6	5500	370	12	LDP00-1401-6-6K03
		DP0 1403	6	5500	370	12	LDP00-1403-6-6K03
		DP0 1601	8	4500	580	12	LDP00-1601-8-1-K03

Models with plastic body

		DP0 1801	12	4500	850	24	LDP01-1801-12-1-K01
		DP0 1801D (with built-in microwave motion detector)	12	4500	850	24	LDP02-1801D-12-1-K01

Ultra-slim LED panels of DVO series

The luminaires are designed for general and local lighting in residential and public premises (malls, offices, hotels, study rooms).

The LED technology ensures long luminaires lifetime – at least 50,000 hours.

Meet the requirements of EN 55015, 60598-1, 60598-2-2, 61000-3-2, 61000-3-3, 61547



Advantages

- The body is made from high-quality aluminum alloy and ensures efficient heat removal.
- The LED modules installed over the whole perimeter of luminaire ensure powerful light flux and uniform illumination.
- Installation methods: built in (without fasteners) into Armstrong ceilings. Fixing by surface mounting or suspension methods is possible (IEK® fixing kits are supplied separately).
- The slim body of the luminaire allows for saving of ceiling void, when built-in installation is selected.
- High-quality external power supply guarantees full compliance with electromagnetic compatibility standards, absence of ripples and steady light flux during the whole service life of the luminaire.
- The diffuser from matted polycarbonate ensures anti-vandal properties of the luminaire and facilitates to uniform distribution of light flux.

Technical characteristics

Rated voltage, V	230
Mains rated frequency, Hz	50
Electric shock protection class	II
Degree of dust and moisture protection	IP20
Range of operating temperatures, °C	–20...+35
Color rendering index, Ra	≥ 75
Power factor	≥ 0.9
Ripple factor, %	≤ 5
Connected conductor cross-section, mm ²	0.75–1.5
Light source	LED modules

Thick LED panels of DVO series

Designed for general and local lighting in public and residential premises.

They are built in Armstrong ceilings.

Meet the requirements of EN 55015, 60598-1, 60598-2-2, 61000-3-2, 61000-3-3, 61547



Advantages

- The prismatic diffuser with light stabilizing additives ensures high efficiency of the luminaire and optimum light flux distribution.
- The aluminum alloy body is painted with white powder paint.
- High-quality LG LEDs on aluminum substrate ensure steadily high light flux during the whole service life of the luminaire and high level of color rendering.
- The LED driver is mounted inside the luminaire and does not require separate installation space outside.
- The terminal block is housed in the luminaire making installation easy and excluding use of wiring blocks.
- High quality of the luminaire is ensured by reliable power supply with low ripple factor – less than 0.01.
- Plastic latches securely fasten the modules to the luminaire body, allowing for replacement of LED modules when necessary.
- Full compliance with electromagnetic compatibility standards.

Technical characteristics

Rated voltage, V	170 ÷ 265
Mains frequency, Hz	50
Power factor, at least	0.7
Ripple factor, not more	0.01
Color rendering index	0.82
Degree of dust and moisture protection	IP40
Range of operating temperatures, °C	–40...+55
Energy efficiency class	A
Electric shock protection class	I
Lifetime of light source, h	100,000
Weight, kg	2

Products' range

	Name	Power consumption, W	Color temperature, K	Light flux, lm	Overall dimensions (A×B×C), mm	Weight, kg	Package qty, pcs.	Product ID
Ultra-slim panels								
	DVO 6564	20	4500	1800	295×295×11	1,5	4	LDV00-6564-20-4500-K00
	DVO 6563	20	6500	1800	295×295×11	1,5	4	LDV00-6563-20-6500-K00
	DVO 6565	40	4500	3200	595×595×11	4,5	3	LDV00-6565-40-4500-K00
	DVO 6566	40	6500	3200	595×595×11	4,5	3	LDV00-6566-40-6500-K00
	DVO 6568	40	4500	3200	1195×295×11	4,5	4	LDV00-6568-40-4500-K00
	DVO 6567	40	6500	3200	1195×295×11	4,5	4	LDV00-6567-40-6500-K00
Thick panels								
	DVO 40304	30	4200	3300	595×595×40			LDV01-40304-30-4000-K01
	DVO 40306	30	6500	3300	595×595×40			LDV01-40306-30-6500-K01
	DVO 40404	40	4200	4000	595×595×40			LDV01-40404-40-4000-K01
	DVO 40406	40	6500	4000	595×595×40			LDV01-40406-40-6500-K01
	DVO 40454	45	4200	5000	595×595×40			LDV01-40454-45-4000-K01
	DVO 40456	45	6500	5000	595×595×40			LDV01-40456-45-6500-K01

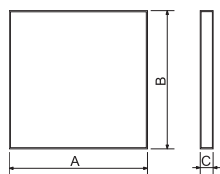
Scope of supply of DVO ultra-slim panels

Luminaire
Power supply
Installation kit
Operation manual

Scope of supply of DVO thick panels

Luminaire with built-in power supply
Operation manual
Prismatic diffuser

Overall dimensions



Fixing kits for LED panels

They are used for fixing of LED panels.
To be ordered separately.



Scope of supply for surface mounting

Description	Qty, pcs
Bracket 16×16×16 mm	4
Bracket 16×16×28 mm	4
Self-tapping screw 4×25	8
Screw M3×8	4
Plastic wall-plug	4

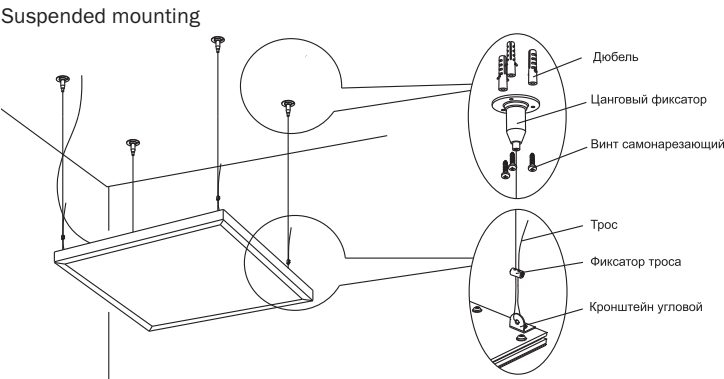
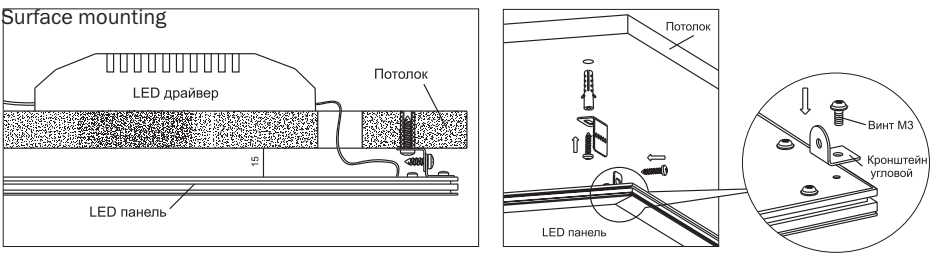
Scope of supply for suspended mounting

Description	Qty, pcs
Bracket 16×16×16 mm	4
Bracket 16×16×28 mm	4
Self-tapping screw 4×25	8
Screw M3×8	4
Plastic wall-plug	4

Products' range

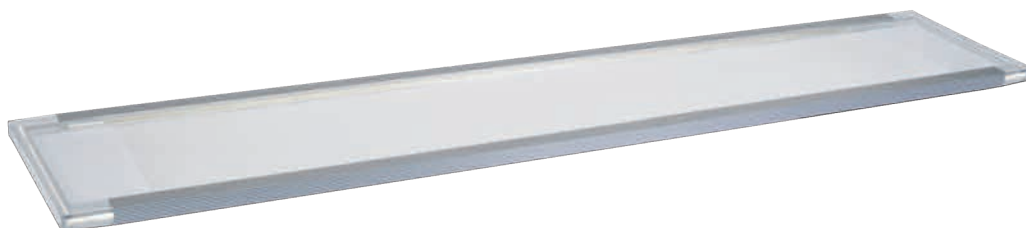
	Description	Shipping package qty., pcs	Product ID
	Fixing kit No.1 (surface mounting) IEK	100	LDV01D-PLN-6368
	Fixing kit No.2 (suspended mounting) IEK	50	LDV02D-PLP-6368

Connection diagrams



Diffuse LED panel of DSO series

Designed for general and local lighting in residential and public premises (class A offices, study rooms, meeting rooms, hotels, lamps above billiard tables).



Products' range

	Power consumption, W	Color temperature, K	Light flux, lm	Overall dimensions (A×B×C), mm	Weight, kg	Product ID
	45	4000	4500	1222×236×18	4	LDC00-1001-45-4000-K00

Scope of supply

Description	Qty, pcs
Luminaire with power supply	1
Steel cable (length 2.5±0.1 m)	2
Wall-plug 6×36 mm	3
Clamp	2

Description	Qty, pcs
Self-tapping screw 4×40	3
Fasteners	2
Installation instructions. Data sheet	1
Packing box	1

Advantages

- Unique pattern of light distribution: light flux is directed to upper hemisphere (40 %) and lower hemisphere (60%) simultaneously.
- The room can be illuminated not only by directed but also by reflected light.
- The original design solution – small thickness and transparency forming the impression of weightlessness and invisibility of the lighting unit.
- Highly uniform brightness over luminous surface facilitates to uniform, shadowless illumination of working surface.
- The optical part of the panel is formed by a diffuser consisting of two transparent plates, stacked together. Colorless incisions are made by laser on upper side of the plate that allow for re-distribution of light flux.

- The light sources are SMD LEDs located on the luminaire ends and ensuring uniform illumination.
- Installation method: suspending.

Technical characteristics

Rated voltage, V	230~
Working frequency, Hz	50
Luminous efficacy, lm/W	at least 100
Color rendering index, Ra	≥80
Ripple factor	not exceeding 0.05
Power factor	at least 0.95
Range of operating temperatures, °C	–25 ÷ +45
Electric shock protection class	II
Degree of dust and moisture protection	IP20

LED luminaires of DSP series

The luminaires are designed for lighting in public, technical and industrial premises with harsh operating conditions, such as parkings, factory shops, underground crossings, subway stations, tunnels, workshops, warehouses, etc. High degree of dust and moisture protection (IP65) allows for use of DSP luminaires for indoor lighting in areas with high content of dust and moisture: basements, laundries, garages, parkings, workshops, auxiliary rooms, etc., and also for outdoor lighting on construction and production sites. Meet the requirements of EN 55015, 60598-1, 60598-2-1, 61547



Advantages

- The luminaire body is made from diecast aluminum or polycarbonate.
- Diffuser from shock-proof matted polycarbonate.
- Model 1302D has IR motion detector.
- Not rippling light flux enables lower eye fatigue and ensures comfortable lighting.
- Base scope of DSP luminaires supply includes 2 types of brackets: for ceiling fixing and for cable fixing (cables TM IEK® are not included).

Technical characteristics

Rated voltage, V	110 – 230~
Working frequency, Hz	50
Electric shock protection class	I
Range of operating temperatures, °C	–20...+45
Power factor, at least	0.8
Ripple factor, not more	0.05
Color rendering index, at least	70
Degree of protection	IP65 (DSP 1302D – IP54)
Color temperature, K	4500
Light source	modules with SMD LEDs
LED lifetime, h, at least	30,000
Color	grey, silver

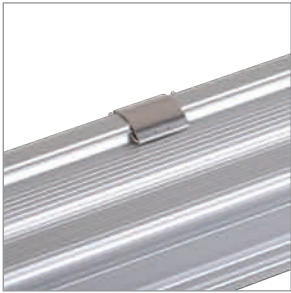
Design features



Diffuser from shock-proof matted polycarbonate.



Uniform distribution of light flux



Clip from stainless steel.



Infrared motion detector (DSP 1302D).



Steel brackets for surface mounting and suspending on cables.



Easy and convenient installation.



Gland for cable entry.

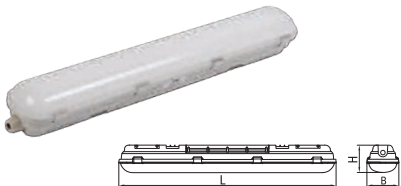
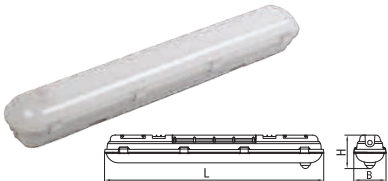
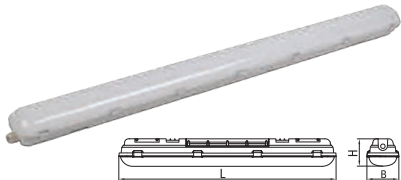
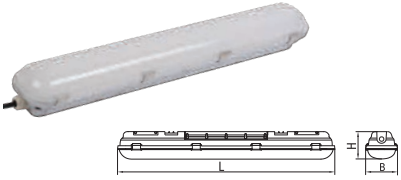
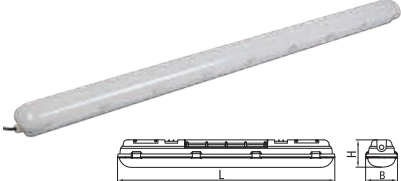


Silicone gasket to ensure protection degree IP65.

Scope of supply

Description	Qty, pcs	Description	Qty, pcs
Luminaire	1	Threaded gland	1
Mounting bracket	2	Packing polybag	1
Mounting bracket suspension	2	Packing box	1
Self-tapping screw	2	Installation instructions and data sheet	1
Plastic wall-plug	2		

Products' range

Name	Power, W	Overall dimensions, mm			Light flux, lm	Body material	Package qty, pcs.	Product ID
		L	B	H				
DSP 1301	20	600	88	74	1800	polycarbonate	9	LDSP0-1301-20-K03
								
DSP 1302D	20	600	88	92	1800	polycarbonate	9	LDSP1-1302D-20-K03
								
DSP 1303	40	1200	88	76	3600	polycarbonate	9	LDSP0-1303-40-K03
								
DSP 1401	40	600	88	76	3600	aluminum	9	LDSP2-1401-40-K23
								
DSP 1403	70	1500	88	74	6500	aluminum	6	LDSP2-1403-72-K23
								

Specifications of motion detector (DSP 1302D)

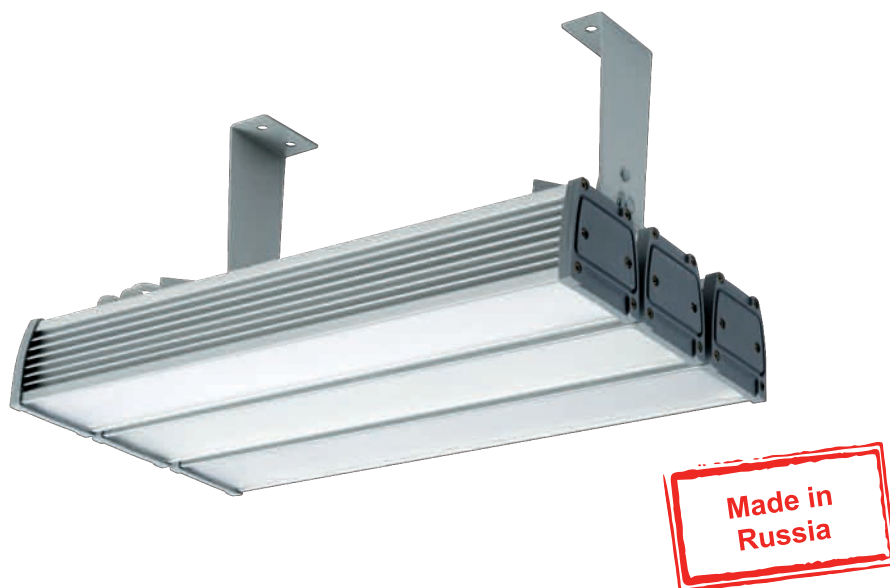
Parameter	Value
Detector type	infrared
OFF time delay, s	30
Detection range, m	1 – 5
Minimum illumination level, lux	6
Viewing angle, deg	100
Built-in regulators	none

LED luminaires of DSP series for high bays

Designed for illumination of production lines, public, technical premises, including premises with high ceilings (4–12 m), such as parkings, filling stations, factory shops, underground crossings, subway stations, tunnels, workshops, warehouses, supermarkets, hypermarkets, malls, etc.

High degree of moisture, dust and dirt protection (IP67) allows for use of DSP luminaires for outdoor lighting on construction and production sites.

Meet the requirements of EN 55015, 60598-1, 60598-2-1, 61547



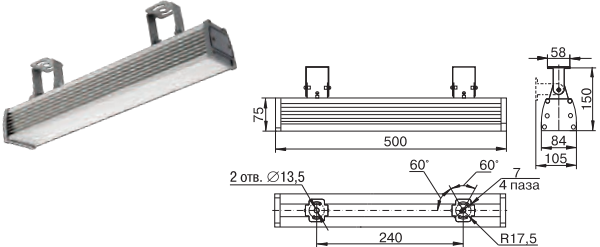
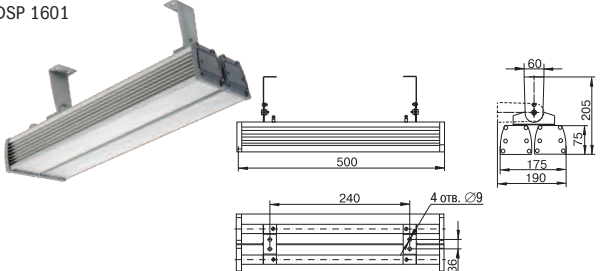
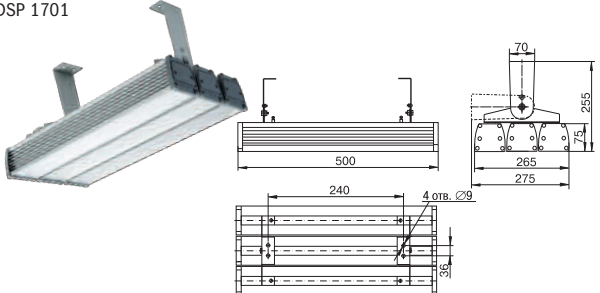
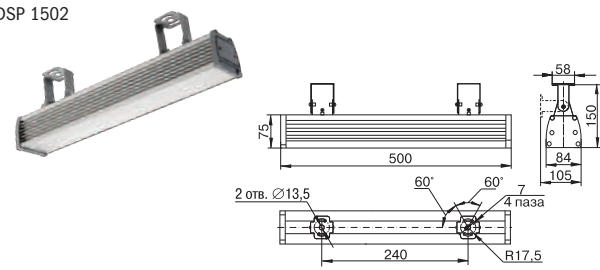
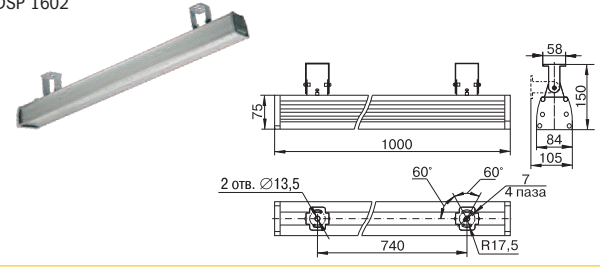
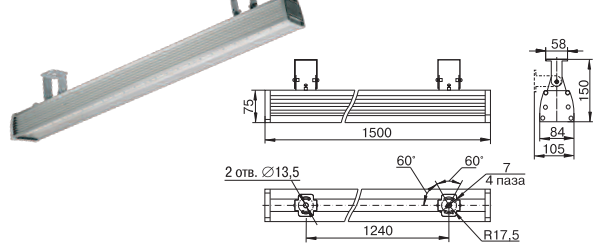
Advantages

- The body cast from aluminum has special ribs for efficient heat removal.
- Diffuser from polycarbonate (with texture of microprism type).
- Light flux rippling less than 1% and uniform light distribution ensure maximum degree of lighting comfort.
- The light sources are modules with SMD LEDs and SMD LEDs with secondary optics.
- Types of light intensity curve (LIC): D (cosine) for general illumination of factory shop and W (wide) for illumination of extended corridors, passages in public and industrial buildings, between racks in production compartment.

Technical characteristics

Rated voltage, V	230~
Operating voltage range, V	176–264
Working frequency, Hz	50
Color temperature, K	6500
Ripple factor	not exceeding 0.01 at least 0.98
Power factor	≥75
Color rendering index, Ra	IP65
Degree of dust and moisture protection	I
Electric shock protection class	UHL1
Climatic version	–40 ÷ +45
Range of operating temperatures, °C	

Products' range

Name	Power, W	Light flux, lm	Type of LIC	Weight, kg	Qty in shipping package, pcs.	Product ID
DSP 1501	60	5400	D	3,1	10	LDSP1-1501-60-K23
						
DSP 1601	120	10800	D	6,5	10	LDSP1-1601-120-K23
						
DSP 1701	180	16200	D	10,1	6	LDSP1-1701-180-K23
						
DSP 1502	60	5400	W	3,1	10	LDSP2-1502-60-K23
						
DSP 1602	120	10800	W	6,3	10	LDSP2-1602-120-K23
						
DSP 1702	180	16200	W	9,7	6	LDSP2-1702-180-K23
						

Luminaires of LSP series with fluorescent lamps, IP65

The luminaires are designed for general lighting in public, production and auxiliary premises with increased content of dust and moisture (laundries, green houses, factory shops, garages, basements, etc.), and also for outdoor lighting on construction and production sites.

Meet the requirements of EN 55015, 60598-1, 60598-2-1, 61547



Advantages

- Luminaire body is made from ABS plastic, not sustaining combustion.
- Material of the diffuser: polystyrene.
- Ballasts with starter and compensating capacitor or electronic ballast, depending on version.
- Installation methods: wall, ceiling surface, suspending.

Technical characteristics

Rated voltage, V	230~
Degree of protection	IP65
Class of protection	I
Connected conductor cross-section, mm ²	0.75÷1.5
Type of light source	linear fluorescent lamps T8
Range of operating temperatures, °C	–25...+40
Color	grey

Design features



Metal panel with mounted electromagnetic or electronic ballast included.



Every model with ballast and starter is fitted with compensating capacitor or electronic ballast.



Installation method: on wall/ceiling surface and suspending.

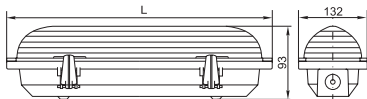
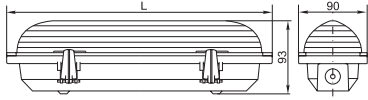
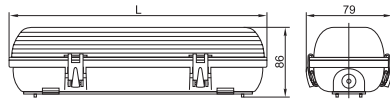
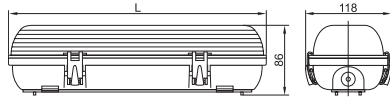


Plastic tie for suspension of metal mounting panels ensures easy maintenance of the luminaire.

Scope of supply

Name	3901	3901A	3902	3902A	3903	3903A	3904	3904A	3905	3905A	3907	3907A	3908	3908A
Metal bracket							•	•	•	•	•	•	•	•
Metal plate		•		•		•								
Rubber gland	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PG gland	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Plastic tie	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Eyebolt	•		•		•									
Ballast type	Ballast with starter	Ballast with starter	Ballast with starter	Ballast with starter	Ballast with starter	Ballast with starter	Ballast with starter	Ballast with starter	Ballast with starter	Electronic ballast	Electronic ballast	Electronic ballast	Electronic ballast	Electronic ballast
Compensating capacitor	•	•	•	•	•	•	•	•	•	•				
Fixing hardware	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Products' range

Name	Overall dimensions	Length L, mm	Lamp power, W	Lamp/ base type	Ballast type	Package qty, pcs.	Product ID
LSP 3901A, LSP 3902A	 	660	2 × 18	T8/G13	Ballast with starter	8	LLSP2-3901A-2-18-K03
		1268	2 × 36	T8/G13	Ballast with starter	6	LLSP2-3902A-2-36-K03
LSP 3901, LSP 3902	 	660	18	T8/G13	Ballast with starter	10	LLSP2-3901-1-18-K03
		1268	36	T8/G13	Ballast with starter	6	LLSP2-3902-1-36-K03
LSP 3907, LSP 3908	 	647	1 × 18	T8/G13	Electronic ballast	10	LLSP3-3907-1-18-K03
		1260	1 × 36	T8/G13	Electronic ballast	8	LLSP3-3908-1-36-K03
LSP 3907A, LSP 3908A	 	647	2 × 18	T8/G13	Electronic ballast	10	LLSP3-3907A-2-18-K03
		1260	2 × 36	T8/G13	Electronic ballast	8	LLSP3-3908A-2-36-K03

Luminaires of DPA series with emergency power supply

The luminaires are designed for use in rooms with low level of dust and moisture, for illumination of evacuation routes, corridors, passages, emergency doors.

Usage as evacuation or indicating lamps when symbols are attached (not included).

Meet the requirements of EN 55015, 60598-1, 60598-2-22, 61000-3-2, 61000-3-3, 61547



Advantages

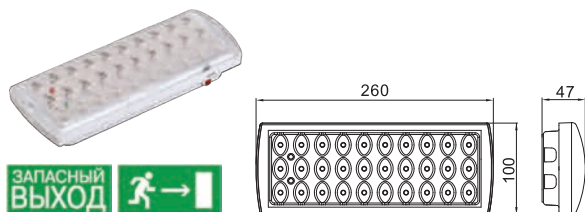
- Standalone luminaires, not continuously working. Activation occurs automatically within 5 seconds after power failure of working lighting.
- The luminaire does not operate before emergency condition appears: battery charging is carried out or battery charge is maintained.
- The luminaire body is made from fireproof ABS plastic.
- Diffuser material: polycarbonate.
- Integrated protection against battery overcharging and excessive discharging.
- Visual check of the battery state.
- LED lifetime at least 30,000 hours.

Technical characteristics

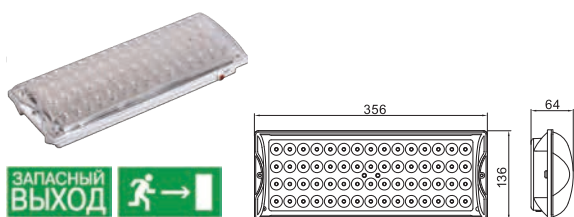
Rated voltage, V	110-240~
Mains frequency, Hz	50
Degree of dust and moisture protection	IP20
Electric shock protection class	II
Color rendering index, at least	75
Range of operating temperatures, °C	-10...+40
Power supply	Ni-Cd battery (rechargeable)
Light source	LEDs
Time of work from battery, h	4 (240 min)
Color temperature, K	4000
Protection against short-circuit current: fuse, A	2
Climatic version	UHL3.1

Products' range

Name	Overall dimensions	No. of LEDs, pcs	Power consumption, W	Light flux, lm	Package qty, pcs.	Product ID
DPA 2101*		30	1,5	180	24	LDPA0-2101-30-K01



DPA 2104		60	3,0	210	10	LDPA0-2104-60-K01
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Technical characteristics of battery

Parameter	DPA 2101	DPA 2104
Battery type	Ni-Cd	
Rated voltage, V	3,6	
Capacity, A·h	1,2	2,2
Time for full charging of battery, h, at least	20	
Battery lifetime, years, at least	4	
Overall dimensions, mm	17×50	

* Refer to page 641 for detailed information about moving direction signs.

Emergency power supply (EPS) for fluorescent lamps

Designed for uninterruptible work of lighting in the rooms with fluorescent lamps in case of unexpected 230 V~ power failure.

It can operate with fluorescent lamps of series T5 and T8 up to 58 W and KLL lamps of series PL-C up to 36 W.

The EPS is integrated into luminaire body or external control box and ensures emergency work of one lamp in a luminaire when voltage drops below 110 V.



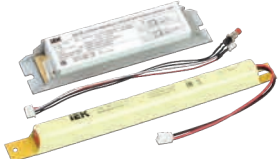
Advantages

- Universal work mode: continuous / not continuous.
- Visual check of luminaire operability and battery state. The EPS has light indicators (LEDs). Green: indication of unit connected to 230 V~ mains when battery is charged. Red: indication of battery being charged. When battery is fully charged, the indicator turns green.
- "Test" button to simulate mains power failure (emergency mode).
- Work with two types of ballasts: electromagnetic and electronic.
- Quick switchover to emergency mode: 0.2–0.3 sec.

Technical characteristics

Rated voltage, V	220-240~
Frequency, Hz	50
Power of connected fluorescent lamp, W	
type T5	13/14/21/28/35/54
type T8	18/ 36/58
type TC-DEL	13/18/26
type TC-L	18/24/34/36
Battery type	Ni-MH
Degree of protection acc. to GOST 14254	IP20
Class of protection from electric shock according to GOST 12.2.007.0	I
Climatic version acc. to GOST 15150	UHL4
Range of operating temperatures, °C	-10 ÷ +50

Products' range

	Name	Time of work in emergency mode, h	Qty in transport package, pcs.	Product ID
	BAP58-1,0	1	20	LLVPOD-EPK-58-1H
	BAP58-3,0	3	20	LLVPOD-EPK-58-1H

Scope of supply

- 1 EPS, including:
electronic ballast (converter), sealed Ni-MH battery,
LED indicator, "Test" button – 1 pc.
- 2 Packing box — 1 pc.
- 3 Installation instructions and data sheet — 1 pc.

Specifications of motion detector (DSP 1302D)

Name	BAP58-1,0	BAP58-3,0
Battery type	Ni-MH	Ni-MH
Rated battery voltage, V	6	6
Battery capacity, A•h	1,5	3,0
Maximum time of battery charging, h	24	24
Time of work in emergency mode, h	1	3

LED luminaires of SSA series for emergency evacuation

Designed for indication of exits during evacuation, guiding of movement and also for various informational purposes.

Meet the requirements of EN 55014-1, 60598-1, 60598-2-22, 61000-3-2, 61000-3-3



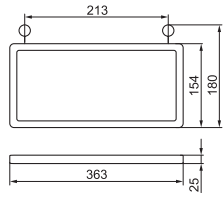
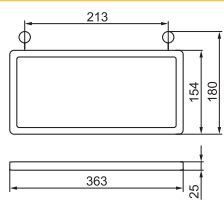
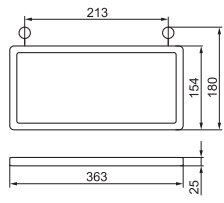
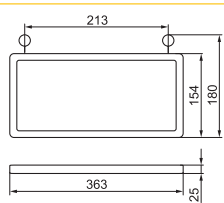
Advantages

- Light source is a LED array.
- The luminaire body is made from aluminum alloy.
- Glass bowl.
- Continuously working luminaires.
- Work lighting mode with supply from 230 V~ mains.
- Emergency lighting mode with battery supply.

Technical characteristics

Rated operating voltage, V	230~
Degree of protection	IP20
Class of protection	I
Time of luminaire work from built-in battery, h	1.5
Connected conductor cross-section, mm ²	3×0.75
Range of operating temperatures, °C	–10...+40

Products' range

	Overall dimensions	Name	Arrangement	Installation method	Package qty, pcs.	Product ID
		SSA 1001	single-side	on wall, suspending	20	LSSA0-1001-003-K03
		SSA 1002	single-side	on wall, suspending	20	LSSA0-1002-003-K03
		SSA 1003	two-side	suspending	20	LSSA0-1003-003-K03
		SSA 1004	two-side	suspending	20	LSSA0-1004-003-K03

Technical characteristics of battery

Battery type	Ni-Cd
Rated voltage, V	2,4
Capacity, A • h	0,4
Maximum time of battery charging, h	24

Battery luminaires of DBA series

The luminaires of DBA series are used:

- For temporary local lighting of working area;
- As light source during power failures in residential, utility and industrial premises;
- As portable luminaires.

Meet the requirements of EN 55015, 60598-1, 60598-2-4, 61000-3-2, 61000-3-3, 61547



Advantages

- Not continuously working luminaire.
- The luminaire body is made from ABS plastic.
- Diffuser from transparent polycarbonate.
- Built-in Li-ion battery.
- Instantaneous start: no additional time is required to reach the optimum working parameters.
- Integrated protection against battery overcharging and excessive discharge.
- LED lifetime at least 30,000 hours.
- Available installation methods: fixed (on wall/ceiling, surface) and portable.

Technical characteristics

Rated voltage, V	230~
Degree of protection	IP20
Class of protection	II
Color temperature, K	4500
Range of operating temperatures, °C	-10 - +25
Time of work from battery, min	Mode I – 240 (4 hours) Mode II – 480 (8 hours)
Switch-on of lighting	automatic or manual

Design features



Convenient extendable handle for carrying (for DBA 3927 and DBA 3928).



Folding support (for DBA 3927).



Box for holding the power cord for battery charging (cord length 0.5 m).



Mirror surface of the reflector uniformly distributes the light at wide angle.

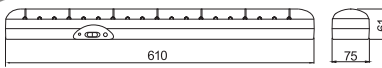
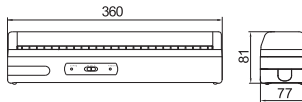


Indication of battery charge level.
Selector switch for luminaire work modes:
(I – full light flux;
II – economy mode).



Connector for 12 VDC power supply (for DBA 3926).

Products' range

Overall dimensions	Name	Power consumption, W	Light flux, lm Mode I / Mode II	Package qty, pcs.	Product ID
 	DBA 3926	1,8	280/170	12	LDBA0-3926-36-K01
 	DBA 3927	2,8	350/200	8	LDBA0-3927-57-K01
 	DBA 3928	4,8	350/200	10	LDBA0-3928-100-K01

Technical characteristics of battery

Parameter	Value		
Battery type	Li-ion		
Rated voltage, V	2×3,7	2×3,7	2×3,7
Capacity, A•h	1,5	2,0	2,0
Time for full charging of battery*, h, at least	20		
Battery lifetime, years, at least	2		
Overall dimensions, mm	18×65		

Battery luminaires of LBA series

The luminaires of LBA series are used:

- For temporary local lighting of working area;
- As light source during power failures in residential, utility and industrial premises;
- As portable luminaires.

Meet the requirements of EN 55015, 60598-1, 61000-3-2, 61000-3-3, 61547.



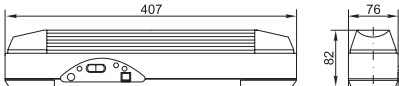
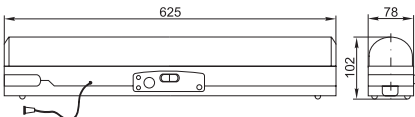
Advantages

- Continuously and not continuously working luminaire.
- Luminaire body from ABS plastic.
- Diffuser material: polystyrene.
- Luminaires are fitted with linear fluorescent lamps.
- Electronic ballast.
- The luminaires are fitted with overcharging protection circuit.

Technical characteristics

Rated voltage, V	230~
Degree of protection	IP20
Class of protection	II
Overcurrent protection (fuse gG), A	2
Color temperature, K	6500
Switch-on of lighting	automatic or manual
Minimum duration of emergency lighting work, min	
LBA 3923	180 (2 lamps) 360 (1 lamp)
LBA 3924	240
Range of operating temperatures, °C	0...+25

Products' range

Name	Overall dimensions	Lamp power, W	Description	Package qty, pcs.	Product ID
LBA 3923, LBA 3923A	 	2×8	Fluorescent lamp d16 mm (T5) Base G5	12	LLBA0-3923-2-08-K01 LLBA1-3923a-2-08-K01
LBA 3924, LBA 3924A	 	20	Fluorescent lamp d26 mm (T8). Base G13	6	LLBA0-3924-1-20-K01 LLBA1-3924a-2-08-K01

Technical characteristics of battery

Battery type	lead-acid
Rated voltage, V	6
Capacity, A • h	4
Maximum time of battery charging, h	24

Luminaire type and working mode

Versions	LBA 3923	LBA 3923A	LBA 3924	LBA 3924A
Luminaire power supply	from battery	from 230 V~ mains; from battery	from battery	from 230 V~ mains; from battery
Luminaire charging	from 230 V mains	from 230 V mains	from external 12 V power supply and from 230 V~ mains	from external 12 V power supply and from 230 V~ mains

Portable luminaires

Portable LED luminaires of NEAR LIGHT series

The luminaires are designed for local lighting in places that are remote from light sources.

They are indispensable when electrical repair works must be carried out where centralized lighting system is not available.

The luminaire design and materials ensure high shock-proof properties and protection from dust, moisture and oil ingress according to degree of protection IP44.

Wide range of luminaire application: household, field conditions, in a car, industrial facilities.



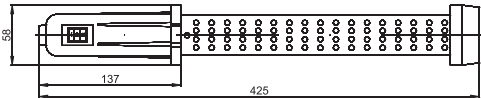
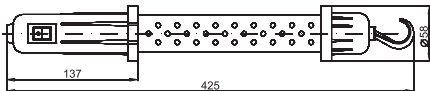
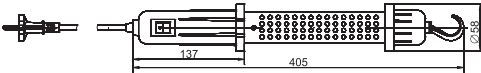
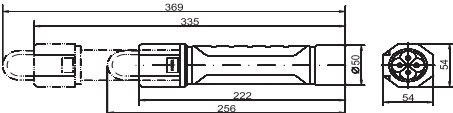
Advantages

- The luminaire body is made from shock-proof ABS plastic, the diffuser – from polyvinylchloride.
- The luminaires are protected from dust, moisture and oil ingress.
- Luminaire lifetime is 35,000 hours.
- Time of autonomous work of rechargeable models is up to 8 hours.
- Each model has a magnetic attachment (except for DRO 2060).
- The directed light flux ensures better illumination of working area.
- The rechargeable models use USB cord and adapter with USB socket as charger.
- Double blister package ensures integrity of the products during transportation and storage.

Technical characteristics

Light source	board with LEDs
Battery	
for DRO 2060M, DRO 2026, 2030, 2063L, mA/h	Li-ion battery 1200
for DRO 2024A, DRO 2024R, DRO 2024	battery of size AAA
Time of Li-ion battery work in autonomous mode, h	3
Range of operating temperatures, °C	–10...+40

Products' range

	Name	No. of LEDs, pcs.	Description	Scope of supply	Package qty, pcs.	Product ID
 	DRO 2060M	60 LEDs on body, 18 LEDs on end, 1 LED indicator	3-position switch with silicone coating; time for full charging of battery 4 h	Detachable, rotating by 360° hook; support en- suring battery recharging; detachable magnet for lu- minaire attachment to metal surface; adapter with USB connector for power supply from 110- 240 V mains; adapter for power supply from 12 V car socket; USB cable	6	LDRO1-2060M-79-3H-K02
 	DRO 2026	26 LEDs on body, 1 LED indicator	Switch with silicone coating; time for full charging of battery 5 h	Support ensuring battery recharging; adapter with USB connector for power supply from 110-240 V mains; adapter for power supply from 12 V car socket	12	LDRO1-2026-27-3H-K02
 	DRO 2060	60 LEDs on body	Switch with silicone coating	Power cord 5 m, cross-section 0.75 mm ²	10	LDRO2-2060-60-5M-K02
 	DRO 2030	30 LEDs on extendable part of the body, 8 red signal LEDs, 4 LEDs on end	Time for full charging of battery 4 h; hook at the body end; extendable part with LED board; red signal LEDs on the board back side	Adapter with USB connec- tor for power supply from 110-240 V mains; adapter for power supply from 12 V car socket; USB cable	6	LDRO1-2030-42-3H-K53

	Name	No. of LEDs, pcs.	Description	Scope of supply	Package qty, pcs.	Product ID
	DRO 2063L	63 LEDs on movable part of the body, 8 red signal LEDs, 4 LEDs on end	Time for full charging of battery 4 h. Magnet on back side of the body. Tripod in carrying handle plane. Plastic grill for protection of luminous part. Can be turned in 5° steps.	Adapter with USB connector for power supply from 110–240 V mains; adapter for power supply from 12 V car socket; USB cable	6	LDR01-2062L-63-3H-K02
	DRO 2024A	24 LEDs on body, 1 LED on end	Time of work in autonomous mode 15 h. Magnet on back side of the body. Battery: 4 pcs. of size AAA	Battery is not included.	20	LDR00-2024A-25-05-K02
	DRO 2024R	24 LEDs on body	Time of work in autonomous mode 10 h. Magnet on back side of the body. Integrated rotating hook. Battery: 3 pcs. of size AAA	Battery is not included.	30	LDR00-2024R-24-05-K02
	DRO 2024	24 LEDs on body, 3 LEDs on end	Time of work in autonomous mode 10 h. Magnet on back side of the body. Integrated rotating hook. Battery: 3 pcs. of size AAA	Battery is not included.	25	LDR00-2024-27-05-K53

Scope of supply



Detachable hook, rotating by 360°



Support ensuring battery recharging



Detachable magnet for luminaire attachment to metal surface



Adapter for power supply from 12 V car socket



Adapter with USB connector for power supply from 110–240 V mains



USB cable

Portable luminaires of LPO (LRO) series with fluorescent lamps

Designed for temporary local lighting of working areas that are remote from light sources..



Advantages

- Luminaire body from plastic.
- Diffuser from transparent acrylic plastic.
- The luminaires are fitted with electronic ballasts.
- The luminaires are fitted with 5-meter cord with plug 2.5 A / 250 V.
- Lamps for the luminaires are included.

Technical characteristics

Rated voltage, V	230~
Minimum distance to illuminated object, m	0,5
Class of protection	II
Connected conductor cross-section, mm ²	2×0,75
Color temperature, K	6500
Range of operating temperatures, °C	-10 ÷ +40

Portable luminaires of UP series with incandescent lamps



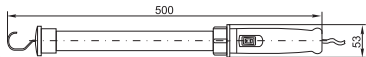
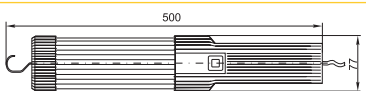
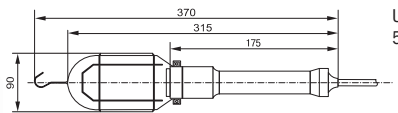
Advantages

- Luminaire body from plastic.
- Metal reflector with corrosion protection coating.
- The luminaires are fitted with 5-meter cord with plug 2.5 A / 250 V.
- Switch and hook for hanging.

Technical characteristics

Rated voltage, V	230~
Maximum lamp power, W	60
Degree of protection acc. to GOST 14254-96	IP20
Electric shock protection class	II
Connected conductor cross-section, mm ²	2×0.75
Type of light source	incandescent or compact fluorescent lamp
Type of light source socket	E27 plastic

Products' range

	Overall dimensions	Name	Lamp power, W	Description	Package qty, pcs.	Product ID
		LPO (LRO) 2006	8	Linear fluorescent lamp d16 mm T5. Base G5. Color: black.	20	LLP02-2006-1-08-K02
		LPO (LRO) 2030	36	Compact fluorescent lamp d16 mm T5. Base 2G11. Color: black.	20	LLP02-2030-1-36-K02
		UP-1R 5 meters	60*	Cord length 5 m. Color: orange.	30	WSP20-05-K09
		UP-1R 10 meters	60*	Cord length 10 m. Color: orange.	25	WSP20-10-K09

Lighting controls

Infrared motion detectors

The detectors are designed to switch on and off the load automatically within specified time interval depending on presence of moving objects in the detector sensing area and illumination level.



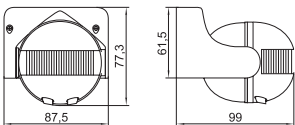
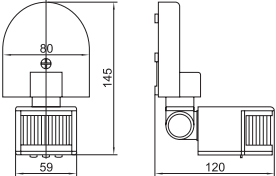
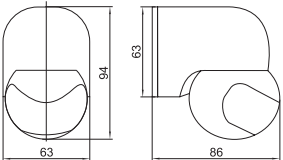
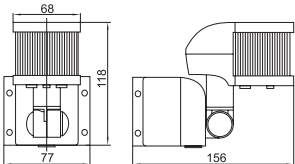
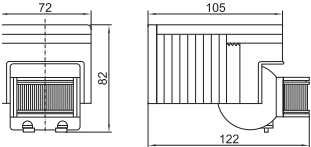
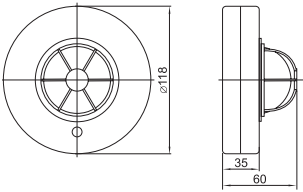
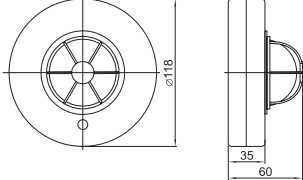
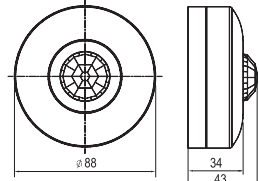
Advantages

- The detector body is made from plastic not sustaining combustion (polycarbonate).
- Electromechanical relay serves as load switching device (except for model DD 035 fitted with triac).

Technical characteristics

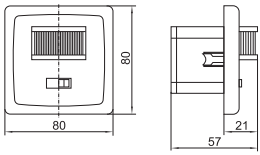
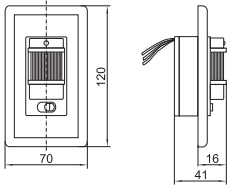
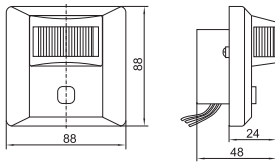
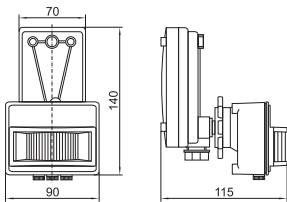
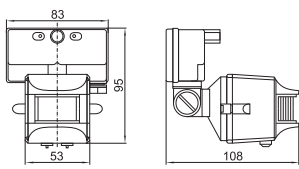
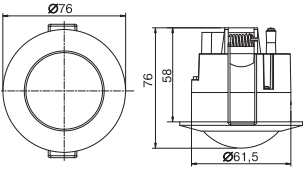
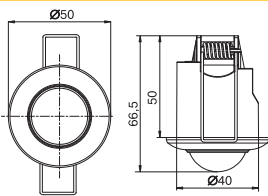
Rated operating voltage, V	230~
Detector ON time delay (adjustable)	5 to 480
Detector activation threshold depending on illumination level, lux (adjustable)	5 to daylight
Threshold of sensitivity to object's IR radiation, for models DD-035, DD-008, DD-018, DD-017	adjustable
Threshold of sensitivity to sound, for model DD-035, dB (adjustable)	30 to 90
Power consumption of detector in active state, W	0.45
Cross-section of connected wires, mm ²	0.75–1.5
Range of operating temperatures, °C	–25...+45

Products' range

	Overall dimensions	Name	Lamp power, W	Description	Package group	qty, pcs. ship.	Product ID
		DD 009	1100* 600**	Viewing angle 180°. Range 12 m. IP44. Installation method: on wall/ceiling.	12	48	LDD10-009-1100-001 LDD10-009-1100-002
		DD 008	1100* 600**	Viewing angle 180°. Range 12 m. IP44. Installation method: on wall/ceiling.	12	48	LDD10-008-1100-001 LDD10-008-1100-002
		DD 010	1100* 600**	Viewing angle 180°. Range 10 m. IP44. Installation method: on wall/ceiling.	12	48	LDD10-010-1100-001 LDD10-010-1100-002
		DD 018V	1100* 600**	Viewing angle 270°. Range 12 m. IP44. Installation method: corner.	12	48	LDD10-018B-1100-001 LDD10-018B-1100-002
		DD 012	1100* 600**	Viewing angle 180°. Range 12 m. IP44. Installation method: on wall/ceiling.	10	60	LDD10-012-1100-001 LDD10-012-1100-002
		DD 024	1100* 600**	Viewing angle: horizontal 120°, vertical 360°. Range 6 m. IP33. Installation method: on ceiling.	10	60	LDD11-024-1100-001
		DD 024V	1100* 600**	Viewing angle: horizontal 180°, vertical 360°. Range 6 m. IP33. Installation method: on ceiling.	10	60	LDD11-024B-1100-001
		DD-025	1200*	Viewing angle 360°. IP20. Range 6 m. Installation method: on ceiling surface. Color: white.	1	50	LDD11-025-1200-001

* Maximum power of incandescent lamp load, W.

** Maximum power of fluorescent lamp load without starters, VA.

Overall dimensions			Name	Lamp power, W	Description	Package qty, pcs. group	pcs. ship.	Product ID
			DD 035***	500***	Viewing angle 140°. Range 12 m. IP20. Installation method: flush-mounted in installation box	20	120	LDD12-035-500-001
			DD 028	1200* 200**	Viewing angle 140°. Range 9 m. IP20. Installation method: flush-mounted in installation box	20	120	LDD12-028-1200-001
			DD 029	600* 200**	Viewing angle 140°. Range 9 m. IP20. Installation method: flush-mounted in installation box	20	120	LDD12-029-600-001
			DD 017	1100* 600**	Viewing angle 120°. Range 12 m. IP44. Installation method: on spotlight body.	12	48	LDD13-017-1100-001 LDD13-017-1100-002
			DD 019	1100* 600**	Viewing angle 120°. Range 12 m. IP44. Installation method: on spotlight body.	12	48	LDD13-019-1100-001 LDD13-019-1100-002
			DD-201	1200*	Viewing angle 360°. IP20. Range 6 m. Installation method: in ceiling. Color: white.	1	50	LDD11-201-1200-001
			DD-301	800*	Viewing angle 360°. IP20. Range 6 m. Installation method: in ceiling. Color: white.	1	100	LDD11-301-800-001

* Maximum power of incandescent lamp load, W.

** Maximum power of fluorescent lamp load without starters, VA.

*** Minimum power of load is 40 W.

**** Not advised for use with light units that work with LED and fluorescent lamps.

Microwave motion detectors

Designed to switch on and off the load automatically within specified time interval depending on presence of moving objects in the detector sensing area and illumination level.

They can be used to control the lighting loads and alarm devices indoors as well as to control the street lighting with various types of lamps.



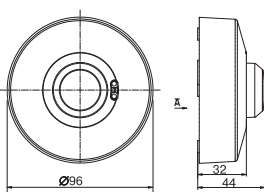
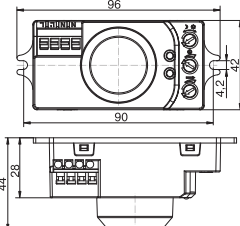
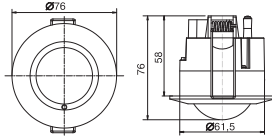
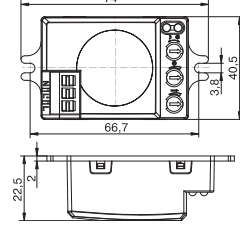
Advantages

- The microwave detectors can be installed directly into the luminaires and do not require special apertures since they can "see" through thin walls, bowls and partitions.
- The detector is highly sensitive and is capable to respond to slightest motions of an object presenting in the detection zone. Adjustable sensitivity threshold.
- Wide positive operating temperature range: up to 70 °C

Technical characteristics

Rated voltage, V	220~
Working frequency, Hz	50
OFF time delay (adjustable), s	10 to 720
Threshold of activation on illumination level (adjustable), lux	3 to 2000
Detection range (adjustable), m	radius 1–8
Range of operating temperatures, °C	–25...+70
Installation height, m	1.5–3.5
Detection angle, deg	360
Electric shock protection class	II
Motion detector degree of protection	IP20
Color	white

Products' range

	Overall dimensions	Name	Lamp power, W	Installation method	Package qty, pcs.	Product ID
		DD-MV101	1200*	ceiling surface	50	LDD11-101MB-1200-001
		DD-MV201	1200*	ceiling surface / built in luminaire body	100	LDD11-201MB-1200-001
		DD-MV301	1200*	ceiling, built-in	50	LDD11-301MB-1200-001
		DD-MV401	500*	wall, surface / built in luminaire body	100	LDD11-401MB-500-001

* Maximum power of incandescent lamp load, W.



Photorelays

The photorelays are designed for automatic switching ON/OFF street and indoor lighting (shop windows backlighting, light advertising, etc.), depending on illumination level.



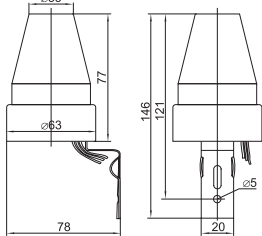
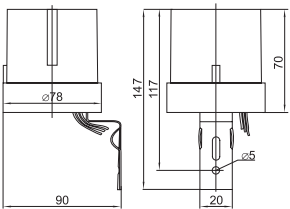
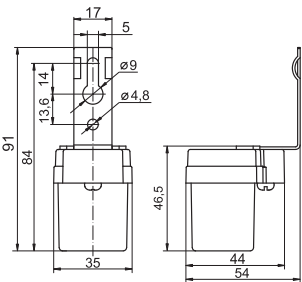
Advantages

- The photorelay body is made from plastic not sustaining combustion (polycarbonate).
- Base with electronic board, protective plastic housing, built-in photocell are located inside the body.
- Electromechanical relay is used as load switching device.
- The photorelay activation threshold can be set using regulator LUX (adjustment +, -), except for FR600.

Technical characteristics

Rated operating voltage, V	230~
Threshold of relay activation on illumination level (adjustable), lux	5–50
Threshold of activation on illumination level for FR600 (not adjustable), lux	5 to 15
Own power consumption at activation, W	6.6
Own power consumption in standby mode, W	0.25
Degree of protection acc. to GOST 14254-96	IP44
Range of operating temperatures, °C	–25...+40

Products' range

	Overall dimensions	Name	Rated load current, A	Load power	Package qty, pcs. group	Product ID
		FR 601	10* 6**	1100 W for incandescent lamps, 600 VA for fluorescent lamps without starters	20 120	LFR20-601-2200-003
		FR 602	20* 16**	2500 W for incandescent lamps, 1500 VA for fluorescent lamps without starters	20 120	LFR20-602-4400-003
		FR 600	6 (at $\cos \varphi = 1$) 3 (at $\cos \varphi = 0.6$)	1300 W for incandescent lamps	20 100	LFR20-600-1300-003

* at $\cos \varphi = 1$.
** at $\cos \varphi = 0.6$.

Components for luminaires

Electronic ballasts for fluorescent lamps

The electronic ballasts are designed for transformation of parameters of input mains voltage, ensuring the start and maintaining the working mode of fluorescent lamps.

They are used for installation in the luminaires with linear or not integrated compact fluorescent lamps.



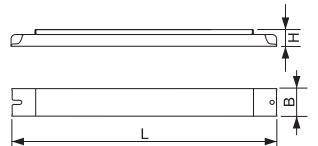
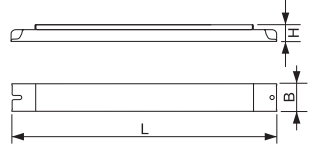
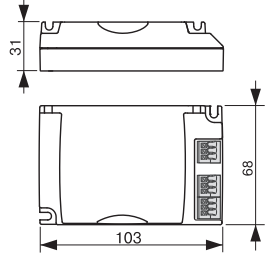
Advantages

- Protection from damage or absence of lamp.
- Automatic switching off if lamp burns out.
- Overload protection.
- No stroboscopic effect.
- Quick start without flickering.
- High light efficiency: at least 80%.
- Increased by 50% lamp lifetime.
- Starter and compensating capacitor are not necessary.
- Noiseless operation.
- Minor heat generation and low dissipated power.
- EMC filter.
- Meets European quality standards.

Technical characteristics

Operating voltage range, V	180 – 256~
Working frequency, Hz	50
Electric shock protection class	I
Power factor, at least	0,95
Range of operating temperatures, °C	–15 ÷ +50
Degree of protection	IP20

Products' range

	Name	Lamp type	Lamp power, W	Overall dimensions, mm			Package qty, pcs.	Weight, g	Warm start	Product ID
				L	B	H				
 	EPRA 118	LL T8	1×18	280	30	25	50	195	no	LLV118D-EBFL-1-18
	EPRA 218	LL T8	2×18	280	30	25	50	195		LLV218D-EBFL-2-18
	EPRA 136	LL T8	1×36	280	30	25	50	195		LLV136D-EBFL-1-36
	EPRA 236	LL T8	2×36	325	32	27	50	230		LLV236D-EBFL-2-36
	EPRA 158	LL T8	1×58	325	32	27	50	230		LLV158D-EBFL-1-58
	EPRA 258	LL T8	2×58	316	38	31	50	315		LLV258D-EBFL-2-58
	EPRA 418	LL T8	4×18	358	31,5	26	50	265		LLV418D-EBFL-4-18
 	EPRA 118M	LL T8	1×18	280	30	25	50	195	yes (ripple factor < 1%)	LLV118D-EBFLM-1-18
	EPRA 218M	LL T8	2×18	280	30	25	50	195		LLV218D-EBFLM-2-18
	EPRA 136M	LL T8	1×36	280	30	25	50	195		LLV136D-EBFLM-1-36
	EPRA 236M	LL T8	2×36	325	32	27	50	265		LLV236D-EBFLM-2-36
	EPRA 158M	LL T8	1×58	325	32	27	50	260		LLV158D-EBFLM-1-58
	EPRA 258M	LL T8	2×58	316	38	31	50	305		LLV258D-EBFLM-2-58
	EPRA 418M	LL T8	4×18	316	38	31	50	285		LLV418D-EBFLM-4-18
 	EPRA 226	KLL PL-C	2×26				50	145	yes	LLV226D-EBPL-2-26

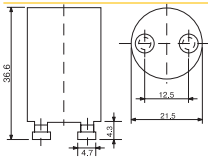
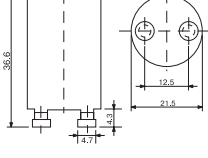
Starters

The glow discharge starter is a tube with electrodes in the form of bimetallic plates placed into plastic housing, with high-quality interference-suppression capacitor.

The starters are intended for starting the fluorescent lamps of T8 series supplied from AC mains with frequency 50 Hz, fitted with electromagnetic ballasts.

They are fitted into luminaires and light units.



Overall dimensions		Name	Lamp type	Lamp power, W	Switch-on	Rated voltage, V	Qty in group package, pcs.	Product ID
		LS111M	T8	4–65	single	220–240	25	LLD111-LS-65
		LS151M	T8	4–22	serial / single	220–240 (for two lamps) 110–130 (for single lamp)	25	LLD151-LS-22

Advantages

- The housing material is ABS plastic, not sustaining combustion.
- Brass contacts.
- Textolite base.
- Ensure quick lamp start.
- Easy and convenient installation and replacement of starter in a luminaire.

Technical characteristics

Lifetime	12000 cycles
Range of operating temperatures, °C	–20...+80