Product Information

PARATHOM® MR16 20 24⁋36° advanced

Product Overview

Product	Wattage	CCT	lm	Base
PARATHOM® MR16 20 24°827	**3,7**	**2700**	**210**	**GU5.3**
PARATHOM® MR16 20 36°827	**3,7**	**2700**	**210**	**GU5.3**
PARATHOM® MR16 20 36°830	**3,7**	**3000**	**210**	**GU5.3**
PARATHOM® MR16 20 36°840	**3,7**	**4000**	**220**	**GU5.3**

Benefits

- For all household luminaires
- Low energy consumption and maintenance costs
- Compact 12V-LED reflector lamp in MR16 shape
- Equipped with high-efficiency patented LEDs, quality assured
- Long lifetime
- Dimmable[1]

Key Features

- 3,7 W LED lamps as high-quality replacement for a 20W halogene spot lamp
- GU5.3 base for easy replacement
- Available in 2700K warm white and 4000K cool white color temperature
- Available in two beam angles 24° for narrow spot application and 36° for wide flood application
- Reduces energy consumption ~80%
- Energy efficiency class A+
- 35,000 hours lifetime[3]
- Similar dimensions as halogen lamp
- Shockproof and vibration-proof
- UV and NIR radiation free
- Mercury free
- 5 years Osram Guarantee (www.osram.com/guarantee)
- Suitable for most commercially available conventional and electronic transformers

Product	Wattage	CCT	lm	Base	Diameter	Lenght	Weight	Beam Angle	EAN10	EAN40 (ship.unit)	Ship. unit
PARATHOM® MR16 20 24°	3,7 W	2700K	210	GU5.3	51 mm	50 mm	35 g	24°	4008321884695	4008321884701	10
PARATHOM® MR16 20 36°	3,7 W	2700 K	210	GU5.3	51 mm	50 mm	35 g	36°	4008321884923	4008321884930	10
PARATHOM® MR16 20 36°	3,7 W	3000 K	210	GU5.3	51 mm	50 mm	35 g	36°	4008321884756	4008321884763	10
PARATHOM® MR16 20 36°	3,7 W	4000 K	220	GU5.3	51 mm	50 mm	35 g	36°	4008321884954	4008321884961	10

[1]With many common dimmers, see also www.osram.com/dim

[2] Typical values. All the technical parameters apply to the entire lamp. In view of the complex manufacturing process for light emitting diodes, the typical values given above for the technical LED parameters are merely statistical values that do not necessarily correspond to the actual technical parameters of an individual product; individual products may vary from the typical values.

[3] The average lifetime of LED lamps is defined as the number of hours when the light output of 50% of a large group of identical lamps goes below 70% of its initial luminous flux (L70B50, IEC60969).The lifetime is estimated at room temperature (25°C), free air burning, base up burning position and at rated voltage.

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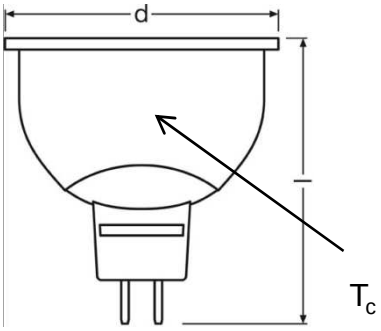
Common Characteristics[3]

Average lifetime[4]	Switching cycles (30s on, 30s off)	Casing material	Starting time	Warm up time for 60% light	Power factor
35,000 hrs	100,000	Plastic	< 0,5 s	< 1 s	0.8
Nominal current	**Max. inrush current**	**Tc temperature**	**CRI**	**Mercury max.**	**Luminous intensity 24° / 36°**
150 mA	-	71 ℃	80	0.0 mg	877 / 558 cd



Good heat exchange supports ideal performance

Disposal information

- Lamps with WEEE sign can be returned at specific collection points.
- LED lamps have to be disposed as special waste.

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[4] The average lifetime of LED lamps is defined as the number of hours when the light output of 50% of a large group of identical lamps goes below 70% of its initial luminous flux (L70B50, IEC60969).The lifetime is estimated at room temperature (25°C), free air burning, base up burning position and at rated voltage.
[5] The Tc is defined as the highest permissible temperature which may occur on the outer surface of the LED lamp (in the indicated position) under normal operating conditions and at the rated voltage/current/power or the maximum of the rated voltage/current/power range (DIN EN 62031: 2009-01)

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Dimming behaviour

ET-parrot 70						Dimming range (%)	
Man.	MPN	Type	Range / VA	Voltage / V	number of tested lamps	Min	Max
Busch-Jaeger	6513U-102	T	40-420	230	1	0,00%	0,0%
Busch-Jaeger	6523U-LED	L	2-100	230	1	8,15%	98,5%
Berker	2875	L	60-600	230	1	0,00%	84,8%
Legrand	775903	U	420	230	1	2,97%	100,0%
Jung	225 NVDE	L	20-500	230	1	0,00%	89,4%
Siemens	5TC8 284	T	20-525	230	1	22,25%	100,0%
Gira	117600	U	50-420	230	1	8,81%	100,0%
Ehmann	4660C0026	T	20-315	230	1	7,49%	96,0%
Schneider	STD400T	U	400	230	1	0,00%	100,0%
Osram	Hti DALI 315	DALI T	20-315	230	1	1,54%	100,0%

HTM 70						Dimming range (%)	
Man.	MPN	Type	Range / VA	Voltage / V	number of tested lamps	Min	Max
Busch-Jaeger	6513U-102	T	40-420	230	1	0,00%	0,0%
Busch-Jaeger	6523U-LED	L	2-100	230	1	10,20%	100,0%
Berker	2875	L	60-600	230	1	4,76%	89,7%
Legrand	775903	U	420	230	1	3,90%	100,0%
Jung	225 NVDE	L	20-500	230	1	0,00%	100,0%
Siemens	5TC8 284	T	20-525	230	1	26,83%	100,0%
Gira	117600	U	50-420	230	1	8,81%	100,0%
Ehmann	4660C0026	T	20-315	230	1	4,05%	100,0%
Schneider	STD400T	U	400	230	1	0,00%	100,0%
Osram	Hti DALI 315	DALI T	20-315	230	1	2,20%	100,0%

HTM 105						Dimming range (%)	
Man.	MPN	Type	Range / VA	Voltage / V	number of tested lamps	Min	Max
Busch-Jaeger	6513U-102	T	40-420	230	1	0,00%	0,0%
Busch-Jaeger	6523U-LED	L	2-100	230	1	46,04%	100,0%
Berker	2875	L	60-600	230	1	7,05%	95,6%
Legrand	775903	U	420	230	1	5,73%	100,0%
Jung	225 NVDE	L	20-500	230	1	0,00%	100,0%
Siemens	5TC8 284	T	20-525	230	1	27,31%	100,0%
Gira	117600	U	50-420	230	1	8,81%	100,0%
Ehmann	4660C0026	T	20-315	230	1	6,39%	100,0%
Schneider	STD400T	U	400	230	1	0,00%	100,0%
Osram	Hti DALI 315	DALI T	20-315	230	1	2,93%	100,0%

ET compatibility

Sample Description:
Test summary:

No.	Transformer Inf					Lamp Qty /Nominal low voltage 1time				comment	Lamp Qty /Nominal low voltage 0.9times				comment	Lamp Qty /Nominal high voltage 1.06times				comment
	Brand	Model	Type	Voltage	Wattage	1	2	3	4		1	2	3	4		1	2	3	4	
1	OSRAM	ET-Parrot 150/220-240 I	ET	220-240V / 50-60	35-105W	NG	NG	G	G		NG	NG	G	G		NG	NG	G	G	
2	OSRAM	ET-ZE 60/220-240	ET	220-240V / 50-60	20-60W	NG	G	G	G		NG	G	G	G		G	G	G	G	
3	OSRAM	HTL 105/230-240	HTL	230-240V / 50-60	35-105W	NG	NG	G	G		NG	NG	G	G		NG	NG	G	G	
4	OSRAM	HTL 225/230-240	HTL	230-240V / 50-60	50-225W	N/A					N/A					N/A				
5	OSRAM	HTN 75/230-240 I	HTN	230-240V / 50-60	20-75W	NG	G	G	G		NG	G	G	G		NG	G	G	G	
6	OSRAM	OT 50/220-240/10	OT	230-240V / 50-60	0.-50W	G	G	G	G		G	G	G	G		G	G	G	G	
7	OSRAM	OT 75/220-240/24	OT	230-240V / 50-60	0-75W	G	G	G	G		G	G	G	G		G	G	G	G	
8	Berker	SNT 40 2915	ET	230V / 50-60Hz	10-40W	G	G	G	G		G	G	G	G		G	G	G	G	
9	Berker	SNT 70/QU 2918	ET	230V / 50-60Hz	20-70W	NG	G	G	G		NG	G	G	G		NG	G	G	G	
10	BLOCK	HES 105K	ET	230-240V / 50-60	35-105W	GD	G	G	G		GD	G	G	G		GD	G	G	G	
11	BRUMBERG	54211 (trafo 105VA)	ET	220-240V / 50-60	35-105W	N/A					N/A					N/A				
12	EVN	CLOU 60(T41/09)	ET	230-240V / 50-60	10-60W	G	G	G	G		G	G	G	G		G	G	G	G	
13	EVN	MINIJOKER 70(T27/10)	ET	230V / 50-60Hz	70W	NG	G	G	G		NG	G	G	G		NG	G	G	G	
14	EVN	TAB 70(3310)	ET	230V / 50-60Hz	20-70W															Not Compatible
15	JUNG	SNT 40	ET	230,50-60Hz	10-40W	G	G	G	G		G	G	G	G		G	G	G	G	
16	JUNG	SNT 70 F	ET	230,50-60Hz	20-70W	NG	G	G	G		NG	G	G	G		NG	G	G	G	
17	JUNG	SNT 105 F	ET	230,50-60Hz	20-105W	NG	G	G	G		NG	G	G	G		NG	G	G	G	
18	nobile	EN-60D	ET	230,50-60Hz	20-60W	G	G	G	G		G	G	G	G		G	G	G	G	
19	nobile	EN-80F	ET	230,50-60Hz	20-80W	G	G	G	G		G	G	G	G		G	G	G	G	
20	Paulmann	Mipro 105	ET	230,50-60Hz	35-105W	NG	G	G	G		NG	G	G	G		NG	G	G	G	
21	Paulmann	Mipro 70	ET	230,50-60Hz	20-70W															no found
22	PHILIPS	Primaline 70 230-240	ET	230-240,50-60Hz	20-70W	NG	NG	G	G		NG	NG	G	G		NG	NG	G	G	
23	Radium	Ralotronic smart D 105	ET	230-240,50Hz	35-105W	G	G	G	G		G	G	G	G		G	G	G	G	
24	Radium	Ralotronic smart D 70	ET	230-240,50Hz	20-70W	G	G	G	G		G	G	G	G		G	G	G	G	
25	SLV	461060	ET	230V / 50-60Hz	10-60W	G	G	G	G		G	G	G	G		G	G	G	G	
26	TCI	PUMA 105	ET	230-240V / 50-60	20-105W	G	G	G	G		G	G	G	G		G	G	G	G	
27	TCI	ROUND 70	ET	230V / 50-60Hz	20-70W															no found

Symbol Description: ET / Electronic Transformer MT / Magnetic Transformer

G / Good	GD / Good & Dark	FW / Flicker weakly	F / Flicker	FS / Flicker strongly	FD / Flicker & Dark	NGF / Not Good as Flicker	NG / not Good as light	N/A / Not applicable

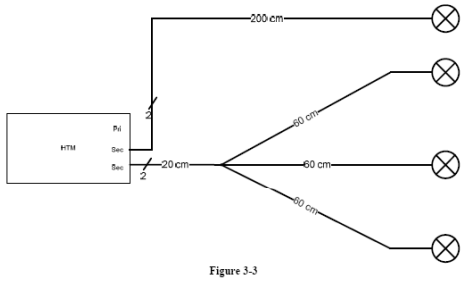

Figure 3-3

Product Information

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Application information

- Suitable for indoor application.
- For outdoor applications and operation in damp locations special approved fixture are required.
- Input voltage: 12 V
- Storage temperature & humidity conditions (-20℃ u p to +40°C, at max. 95% relative humidity)
- Operating temperature & humidity conditions (-20°C up to +40℃, at max. 95% relative humidity)

Lamp conformity

- 2004/108/EC Electromagnetic compatibility (EMC)
- 244/2009 Ecodesign requirements for non-directional household lamps
- IEC/ PAS 62612 Self ballasted LED-lamps for general lighting services – Performance requirements
- 2009/125/EC Ecodesign requirements for energy related products
- 2011/65/EC Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
- 1907/2006 Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH Regulation)
- 2002/96/EC Waste Electrical and Electronic Equipment Directive (WEEE)
- EN 62471 Photobiological safety of lamps and lamp systems
- EN 55015 Limits and methods of measurement of radio disturance
- EN 61000-3-2 Electromagnetic compatibility – Limits for harmonic current emission
- EN 61000-3-3 Electromagnetic compatibility – Limitation of voltage changes, voltage fluactuations, flicker in public low voltage supply systems
- EN61547 Electromagnetic compatibility immunity requirements
- 1194/2012 Eco design requirement for directional lamps, light emitting diode lamps and related equipment (DIM II)
- IEC 62560 self-ballasted LED-lamps for general lighting services by voltage >50V – Safety specifications
- 874/2012/EU Energy labeling of electrical lamps and luminaires