

OSRAM Product Specification	AirZing UV-C light purifier PRO 5040 AM1882600HM	Page 0 Edition 05/2020 DI IND Revision: 1.6
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AirZing UV-C light purifier PRO 5040

Application Note Change Log

Revision	Changes	Chapter	Created
initial draft			March 26, 2018 Colin/Gavin/Kang Qing
V1.1	Update PF>0.9		April 8, 2018 Colin
V1.2	Ballast dimension/label; bracket; Part 3; Part 4		April 19, 2018 Colin/Gavin
V1.3	Team review		May 7, 2018 Colin/Gavin/AI Ma/Kila Zhang
V1.4	Update Ballast label		May 9, 2018 Colin
V1.5	Update Ballast label		May 15, 2018 Colin
V1.6	Update Product name; Compliance and Standards, Product/ballast label		May 12, 2020 Bu, Hui

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1 Introduction

1.1 General

OSRAM AIRZING 5040 are designed for air disinfection, surface disinfection in very high sterilization efficiency. Additional safety protection function is provided by integrated IR motion sensor.

This device is suitable for most places which need sterilization/disinfection or mandatory required by standards, like Kindergarten.



Figure 1.1: AirZing UV-C light purifier PRO 5040

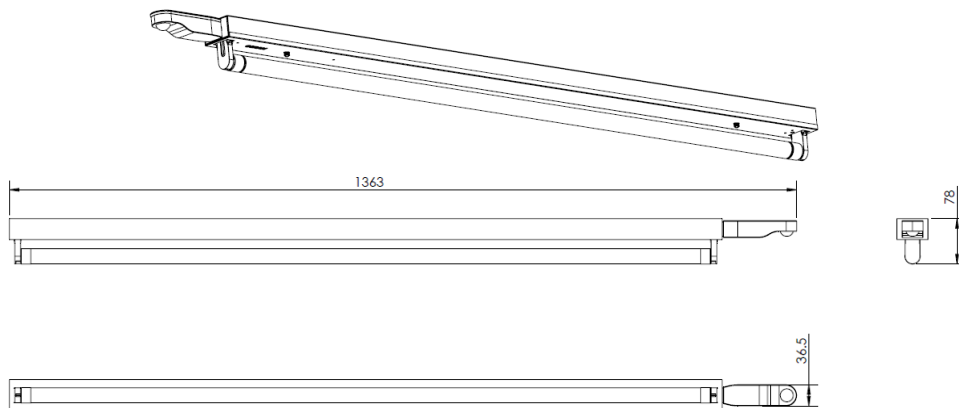


Figure 1.2: AirZing UV-C light purifier PRO 5040

Table 1.1: Main Characteristics

	Parameter	Value			Unit	Remark
		min	typ	max		
AIRZING 5040 UVC SET	Input voltage	198	220	242	V	
	Input current		0.19		A	Full load @220V
	Input power		40		W	Full load @220V
	UVC Radiation flux(254nm)		14	15	W	
	Power factor	0.9				Input voltage range
	Dimension	1363 x 54 x 78			mm	
	Net Weight		1.44		Kg	
	Gross Weight(1x1)		2.2		Kg	
	Gross Weight(6x1)		14.8		Kg	
Average life time		3		Year		

1.2 Product function

- Germicidal lamp is very effective on disinfection, AirZing UV-C light purifier PRO 5040 contains specialized electrical ballast and high quality germicidal lamp, can provide high sterilization efficiency.
- After around 40s warm up time, IR motion sensor will contact power to ballast and start to detect movement from human or other animals. The lamp will be turned off immediately once detected.

1.3 Diagram and electrical connections

IR sensor is fixed outside of lamp bracket, and electrical connected to the electrical ballast which is installed inside of bracket. Refer to figure 1.3.

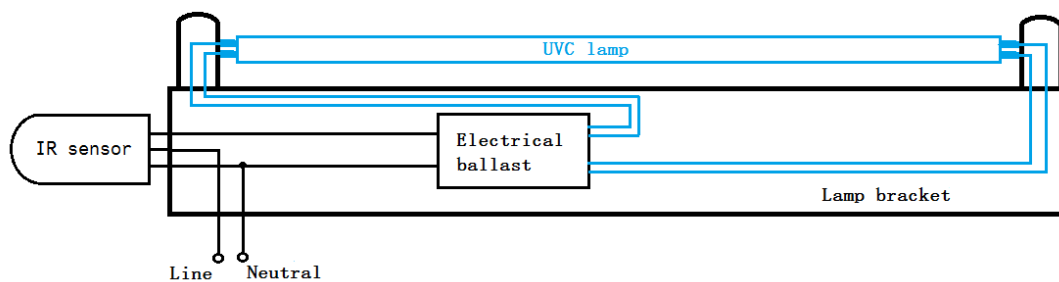


Figure 1.3: Electrical connection

1.4 Compliance and Standards

- Electrical ballast has CCC certification, Chinese standard: GB19510.1-2009, GB19510.4-2009, GB17625.1-2012 and GB17743-2007.
- Electromagnetic compatibility-limits, limits for harmonic current emissions, Radio disturbance characteristics meet GB 17743-2007 and GB 17625.1-2012 requirements.
- Electrical safety meet GB 7000.1-2015 and GB 7000.201-2008 requirements.
- OSARM company standard Q/OCN 11-2018 compliant.
- Product was certified by EN55014-1:2017, EN55014-2:2015, EN61000-3-2:2014, EN61000-3-3:2013, EN62233:2008

2 Device

2.1 Lamp

OSRAM HNS 36W G13 T8 low pressure lamp.

2.1.1 Technical information

Rated data of lamp.

Geometric data

Face to Face	A _{max}	1200 mm
Face to end of opposite pin	B _{min}	1204 mm
Face to end of opposite pin	B _{max}	1207 mm
Overall length	C _{max}	1214 mm
Radiation length	a	1135 ± 2 mm
Tube diameter	D	25.5 ± 0.5 mm
Base	G13	

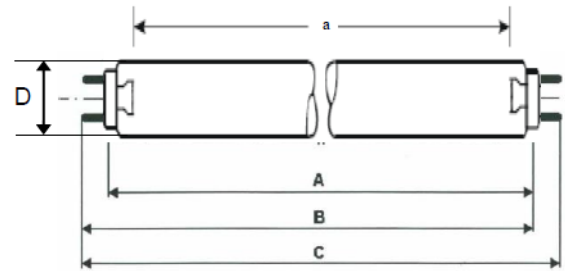


Figure 2.1: Lamp dimensions

Electrical data

Table 2.1: Lamp electrical data

Lamp power	36W
Lamp voltage	103V
Lamp current	0.44A

Spectral data

Table 2.2: Lamp spectral data

Dominant wavelength	254nm
Initial UV-C irradiance	1.4 W/m ² @1 meter
Lamp lifetime	9000 hrs
UV-C irradiance @ 9000hrs	>1.24 W/m ² @1 meter
Generation of ozone	No

2.2 Electrical ballast

The ballast is designed to ignite and operate OSRAM HNS 36W G13 lamp, to achieve best performance and life of Germicidal lamp. It is suitable for 220V 50Hz/60Hz AC mains supply.

The ballast is mounted in luminaire and intended for indoor use only.

The ballast must be grounded to ensure functionality and safety requirements are met.

2.2.1 Diagram and Electrical Connections

The ballast is connected by external wiring to the mains and lamp according to Figure

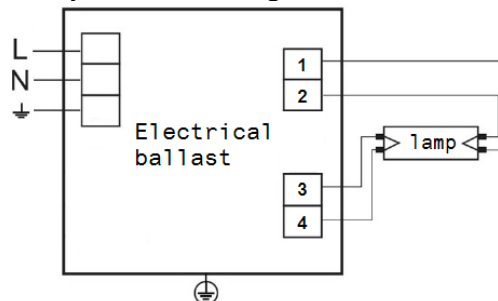


Figure 2.2: Ballast diagram

2.2.2 Electrical Specifications

Table 2.3: Electrical parameters of ballast

Parameter	Condition	Values			Unit
		Min	Typ	Max	
Input Parameter					
Input Voltage V_{in}	AC	-10%	220	+10%	V
Input Current I_{in}	Full load @220V		0.19		A
Input Power P_{in}	Full load @220V		40		W
Mains frequency		50		60	Hz
Power Factor PF	Input voltage range	0.9			
THD	Full load @220V			20%	
3rd harmoni				$\leq 30 \cdot PF$	
5th harmoni				≤ 10	
7th harmoni				≤ 7	
9th harmoni				≤ 5	
11th~39th harmoni				≤ 3	
Efficiency η_{220V}	Full load @220V		90		%
Output Parameter					
Lamp current I_L		-10%	0.43	+10%	A
Lamp voltage V_L			103		V
Lamp power P_L			36		W
Lamp current frequency f_{op}			43		KHz
Peak-Peak current I_{pk-pk}	@0.43A I_L			1.46	A
Current crest factor CF			1.4	1.7	
Preheat Parameter					
Starting method	Program start				
Filament preheat current $I_{preheat}$	RMS value		0.7		A
Preheat time $t_{preheat}$			1.5		s
OCV during preheat $OCV_{preheat}$	RMS value			200	V
Ignition parameter					
Ignition voltage $OCV_{ignition}$	RMS value		400		V
Ignition time		50			ms

Note 1: All the parameters should be measured after the ballast has thermally stabilized.

Note 2: All the parameters should be measured at 25°C.

2.2.3 Mechanical Dimensions

单位: mm

单位误差: $\pm 1mm$

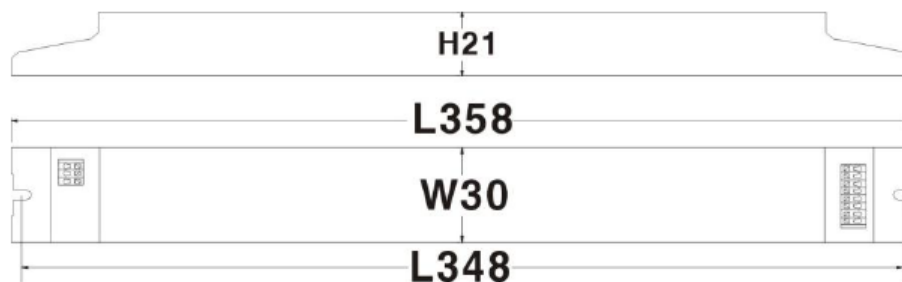


Figure 2.3: Ballast dimensions

2.2.4 Label



Figure 2.4: Ballast label

2.3 IR motion sensor

This IR motion sensor (“IR sensor” for short) is integrated to the bracket and electrical connected to ballast.

IR sensor can detect human movement if they mistakenly intrude the detection range, then turn off the power to ballast immediately to shut down the UVC lamp, thus can avoid the accidents or injuries to human, especially children.

Function description:

- i. If there is no people break into the detection range, IR sensor should not impact ballast normal working: Turn on the power switch → lamp ON after warm up time; Turn off the power switch → lamp OFF.
- ii. If some people break into the detection range while the lamp is ON, IR sensor should detect the human movement and turn off the lamp immediately. Then IR sensor should keep the lamp always OFF, no matter the people stay in the detection range without any movement or leave this range after some time. Only reset the power switch of AC mains can restart the lamp.

2.3.1 Diagram and electrical connections

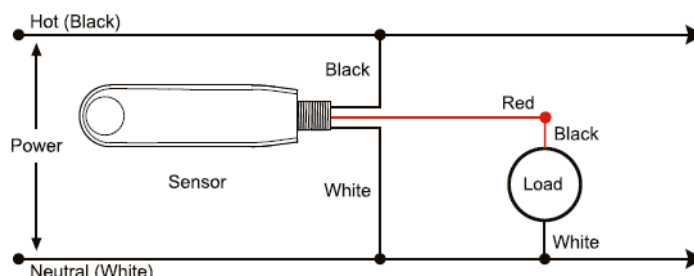


Figure 2.5: IR sensor diagram

2.3.2 Electrical & Optical specification

Table 2.4: Parameters of IR sensor

Parameter	Condition	Values			Unit
		Min	Typ	Max	
Electrical parameter					
Input Voltage	AC range	-10%	220	+10%	V
Mains Frequency	Normal range	50		60	Hz
Inductance Load	Fixed, electrical ballast		40	110	W
Warm up time	Starting time		40		s
Optical parameter					
Mounting height		2.5		4	m
Detection radius	@Installation height 4m		7		m

Movement Distance of human	When human do one-way movement in detection range, IR sensor should detect human within 4m movement distance.			4	m
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2.3.3 Detection diagram

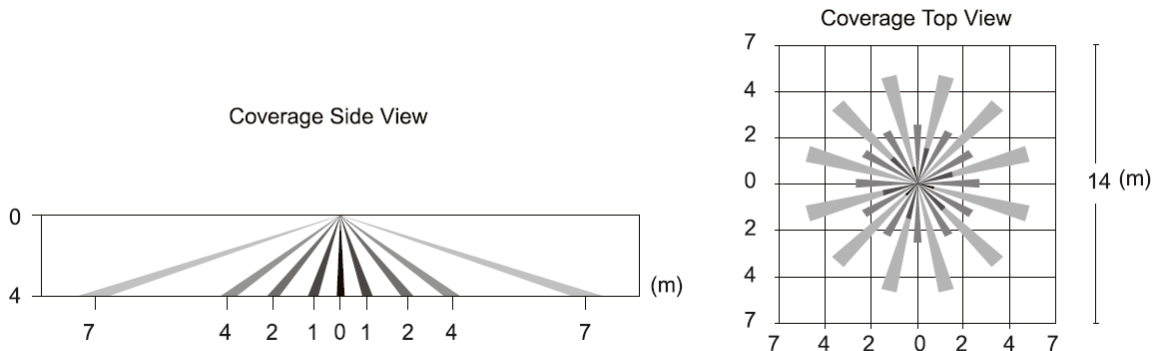


Figure 2.6: Detection diagram

2.3.4 Mechanical Dimensions

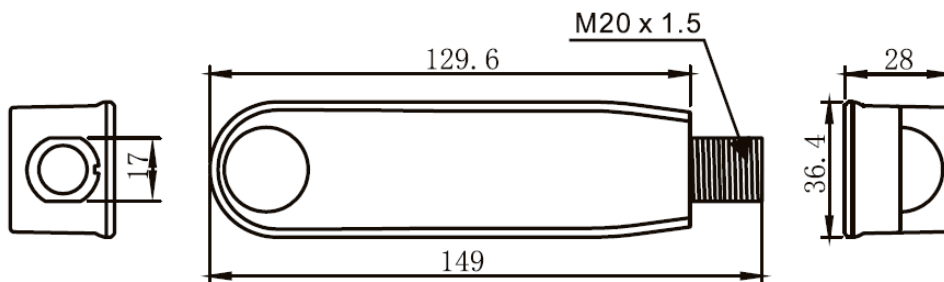


Figure 2.7: IR sensor dimensions

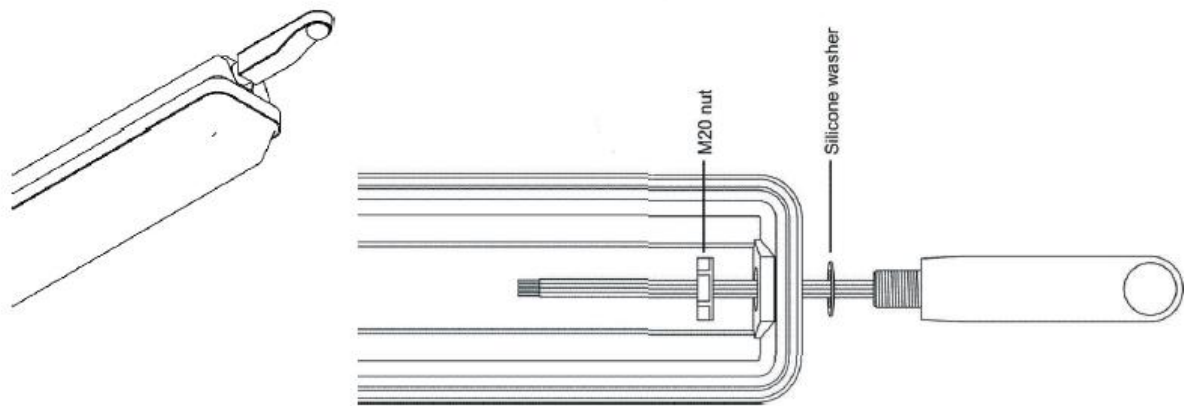


Figure 2.8: IR sensor luminaire fitting

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2.3.5 Label

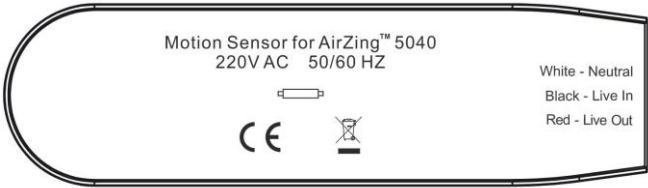


Figure 2.9: IR sensor label

2.4 Bracket

2.4.1 Mechanical Dimensions

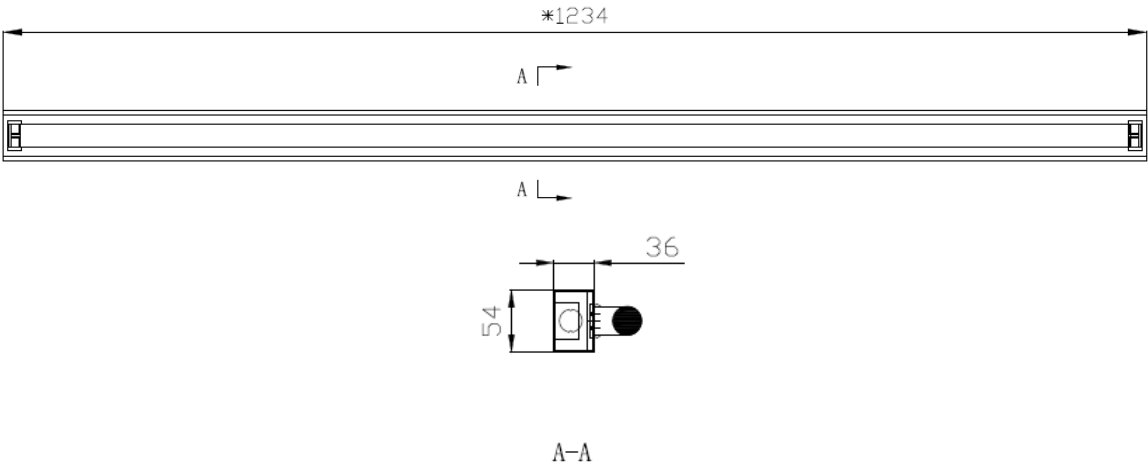


Figure 2.10: Bracket dimensions

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3 Environmental Information

3.1 Environmental Requirements

Ambient Temperature	operating: -10°C – +35°C ¹⁾ non-operating: -20°C – 60°C
Humidity	operating: 15% - 70% relative, non-condensing non-operating: 5% - 95% relative, non-condensing
Altitude	operating: max 12 000 ft (600 hPa = 4 000 m) non-operating: max 30 000 ft (290 hPa = 10 000 m)
IP	indoor use only

1) If ambient temperature exceed +35 °C, IR sensor detection sensitivity could be impact.

3.2 Reliability Tests




Switch Cycling	IR sensor: 220V+10%, +85°C, 85% humidity Ballast: 220V+10%, +25°C, 35% humidity 40s ON / 10s OFF, 10000 cycles
Drop & Vibration Test	according to ISO 2247 and ISO 2248 test with the product in the packaging total 5 drops from 600 mm height (4 sides, 1 base edge)

4 Additional Information

4.1 Labelling Information

AA1882600HM AirZing UV-C light purifier PRO 5040

Product label:

AM 1882601HM	朗诺 紫外杀菌装置 专业版5040 额定电压: 220~240V, 50/60Hz 电源电流: 0.19A 额定功率: 40W 功率因数: >0.9 光源型号: OSRAM HNS® 36W 工作温度: -10 ~ 40°C 存储温度: -20 ~ 60°C 欧司朗彩显特种光源(昆山)有限公司 中国江苏省昆山市综合保税区外河泾路179号2号房	AirZing™ UV-C light purifier PRO 5040 Input Voltage: 220~240V, 50/60Hz Input Current: 0.19A Power Consumption: 40W Power Factor: >0.9 Lamp Code: OSRAM HNS® 36W Operational Temp.: -10 ~ 40°C Storage Temp.: -20 ~ 60°C OSRAM Kunshan Display Optic Co., Ltd No.2 Building, No.179 Waihejing Road, Kunshan FTZ, China	  
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UV safety warning label:

安全警示

- 本产品工作时会产生UV-C紫外线。任何时候都应避免紫外线直接或间接照射于人或动物的眼睛及皮肤。
- 本产品必须在无人时开启。严禁有人或动物进入正在进行紫外线杀菌作业的空间。
- 本产品仅作为室内空间杀菌装置使用。不可用于通用照明。

SAFETY WARNING

This product emits UV-C light during operation. Always avoid direct or reflected UV-C light exposure to eyes or skins of humans and animals. Keep humans and animals out of the operation space when this product is in service.

This product is intended for indoor air purification purposes only and may not be used for any general lighting application. The product is not suitable for cleaning, disinfection or sterilization of medical devices.

Outer box label:

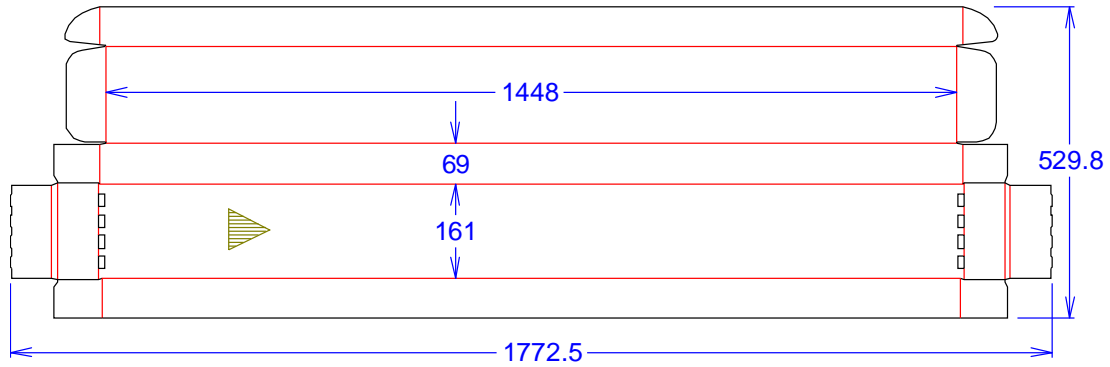
OSRAM	
朗诺 紫外杀菌装置 专业版5040	AirZing™ UV-C light purifier PRO 5040
产品代码: 4062172152655	工作温度: -10°C ~ 40°C
额定电压: 220~240V, 50/60Hz	存储温度: -20°C ~ 60°C
电源电流: 0.19A	相对湿度: ≤80%
额定功率: 40W	产品数量: 1
外形尺寸: 1363mm x 54mm x 78mm	生产日期: 见灯体
产品重量: 2.2kg	标准编号: Q/OCN11-2018
Product Code: 4062172152655	Operational Temp.: -10°C ~ 40°C
Input Voltage: 220~240V, 50/60Hz	Storage Temp.: -20°C ~ 60°C
Input Current: 0.19A	Relative Humidity: ≤80%
Power Consumption: 40W	Qty/Package: 1
Dimension: 1363mm x 54mm x 78mm	Date of Manufacture: Enclosed on product
Weight: 2.2kg	Internal Code: AM1882601HM
OSRAM Kunshan Display Optic Co., Ltd No.2 Building, No.179 Waihejing Road, Kunshan FTZ, China	OSRAM Kunshan Display Optic Co., Ltd No.2 Building, No.179 Waihejing Road, Kunshan FTZ, China

Inner box label:

OSRAM	
朗诺 紫外杀菌装置 专业版5040	AirZing™ UV-C light purifier PRO 5040
产品代码: 4062172152655	工作温度: -10°C ~ 40°C
额定电压: 220~240V, 50/60Hz	存储温度: -20°C ~ 60°C
电源电流: 0.19A	相对湿度: ≤80%
额定功率: 40W	产品数量: 6
外形尺寸: 1363mm x 166mm x 172mm	生产日期: 见灯体
产品重量: 14.6kg	标准编号: Q/OCN11-2018
Product Code: 4062172152655	Operational Temp.: -10°C ~ 40°C
Input Voltage: 220~240V, 50/60Hz	Storage Temp.: -20°C ~ 60°C
Input Current: 0.19A	Relative Humidity: ≤80%
Power Consumption: 40W	Qty/Package: 6
Dimension: 1363mm x 166mm x 172mm	Date of Manufacture: Enclosed on product
Weight: 14.6kg	Internal Code: AM1882601HM
OSRAM Kunshan Display Optic Co., Ltd No.2 Building, No.179 Waihejing Road, Kunshan FTZ, China	OSRAM Kunshan Display Optic Co., Ltd No.2 Building, No.179 Waihejing Road, Kunshan FTZ, China

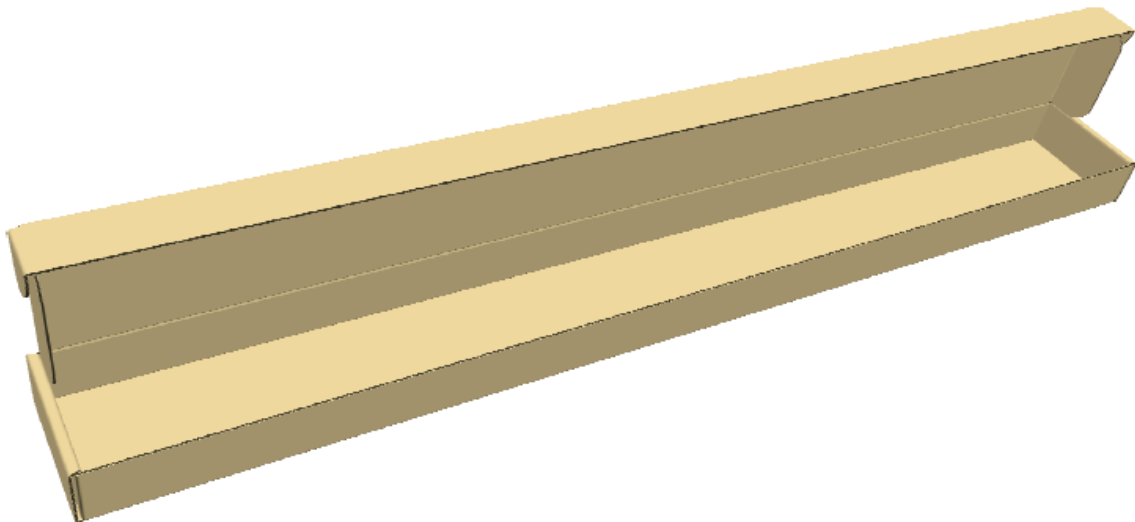
4.2 Packaging information

Inner box:

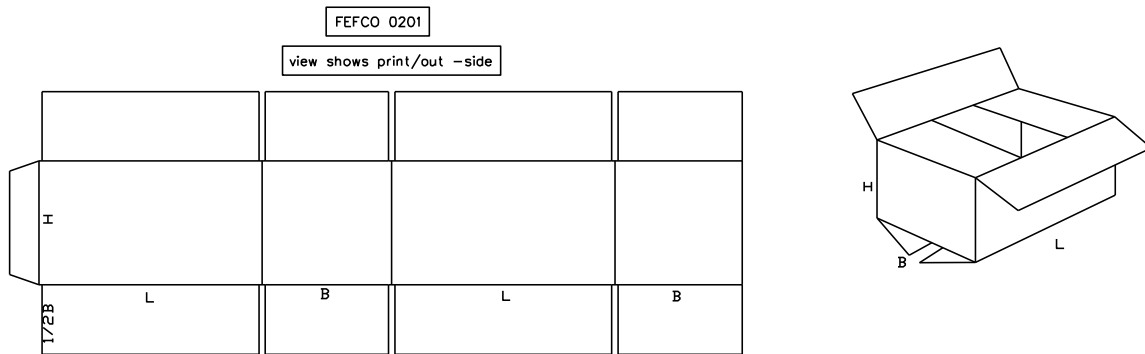


4.2.1.1 <u>Minimum</u>			4.2.1.2 <u>Inner Dimension</u>			Outer Dimension [mm]		
L	B	H	L	B	H	L	B	H
1,445.0 mm	158.0 mm	66.0 mm	1,476.0	164.0	72.0			

Design:	ACCORDING TO DRAWING
Material:	corrugated board
Quality:	B Flute ECT >4kN/m / ECT 23 lb/in alternate quality: Contact packaging engineer
Tolerances:	according to "General tolerances" DIN ISO 2768 - m
Printing:	according to OSRAM artworks and OSRAM colour cards (document ZQR 2125736)
General:	according to "General Requirements for packaging" (document ZQR 2146009)



Outer box:



Minimum Inner Dimension [mm]			Outer Dimension [mm]		
L	B	H	L	B	H
1,474.0 mm	332.0 mm	222.0 mm	1,488.0	346.0	250.0

4.2.1.2.1.1 Design:	fefco 0201
Material:	corrugated board
Quality:	ECT>5KN/M B/C Flute alternate quality: Contact packaging engineer
Tolerance:	according to "General tolerances" DIN ISO 2768 - V
General:	according to "General Requirements for packaging" (document ZQR 2146009)
Printing:	according to related ZGR document