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EN

PLANMECA SingLED

user's manual

10020003_8

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The manufacturer, assembler and importer are responsible for the safety, reliability and performance of the unit only if:
- installation, calibration, modification and repairs are carried out by qualified and authorized personnel
- electrical installations are carried out according to the appropriate requirements such as IEC 60364
- equipment is used according to the operating instructions.

Planmeca pursues a policy of continual product development. Although every effort is made to produce up-to-date product documentation this publication should not be regarded as an infallible guide to current specifications. We reserve the right to make changes without prior notice.

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1 INTRODUCTION

Planmeca SingLED operating light is meant for illuminating the dental treatment area with a light corresponding to daylight. This manual describes how to use the operating light. Please read this manual before using the light.

The operating light reaches all the areas of the oral cavity and the long operating light arm ensures that the entire mandibular area is illuminated.

The device system including the Planmeca SingLED operating light must fulfil the medical device EMC requirements of the Standard IEC 60601-1-2.

2 SYMBOLS



Alternating current (Standard IEC 60417)



Planmeca SingLED operating light with power control fulfils the requirements of Directive 93/42/EEC.



Attention, consult accompanying documents (Standard ISO 7010).



General warning (Standard ISO 7010).



Separate collection for electrical and electronic equipment according to Directive 2002/96/EC (WEEE).

3 PREVENTIVE MAINTENANCE

To guarantee the operating light's proper operation, the light must be checked and serviced once a year by a qualified PLANMECA service technician.

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4 WARNINGS AND CAUTIONS



WARNING
The LED housing and protective fascia heat up when the operating light is used. Allow these parts to cool before cleaning or removing the protective fascia. Always first turn off the power to the light externally before cleaning.

CAUTION ***Do not use the operating light without protective fascia.***

CAUTION ***Advise the patient not to stare into the light beam. The patient should always wear protective glasses.***

CAUTION ***Do not allow the patient to grab the operating light handles or arm when getting seated or getting up from the patient chair.***

CAUTION ***The light source of the SingLED operating light may cause retinal injury if viewed upon directly. Protect the patient's and dental treatment staff's eyes with protective glasses that block high-energy visible light (HEV light) or limit the direct exposure to 10 minutes.***

CAUTION ***Do not leave the operating light on unattended.***

CAUTION ***Never splash water on the operating light or power supply.***

CAUTION ***Do not open the power supply.***

CAUTION ***Planmeca SingLED operating light is not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide.***

NOTE **The power supply must not be placed on the floor.**

NOTE **Planmeca SingLED operating light fulfills the requirements of Standard IEC 601-1-2. However, electromagnetic interference between the light and other devices can occur in very extreme conditions. Do not use the light in close conjunction with sensitive devices. The disturbances can be made smaller by switching off the light or by increasing the distance between the devices.**
Do not use the light in close conjunction with devices creating high electromagnetic disturbances. Remove the cause of the disturbance or increase the distance between the devices.

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5 USING OPERATING LIGHT

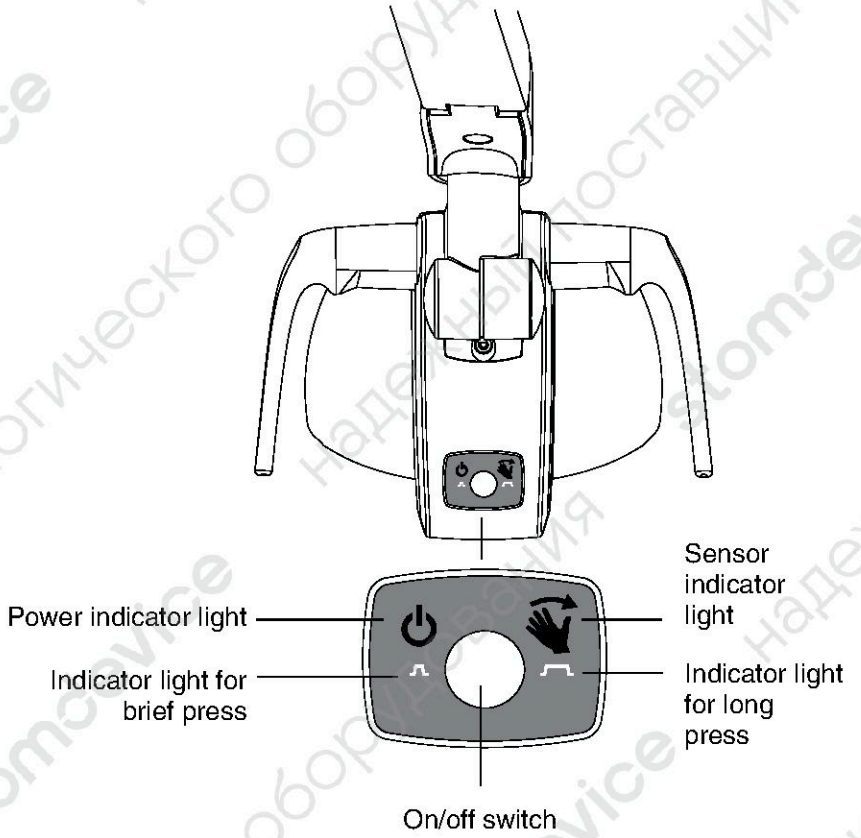
NOTE **If the Planmeca SingLED operating light is attached to a Planmeca dental unit, the light's operation is described in the dental unit's user's manual.**

NOTE **The light must be moved from the handles only. Do NOT move the light from the arm or from the light body.**

NOTE **The light beam may speed up the hardening of some filling materials. Move the light so that the light beam is not directed to filling material or dim the light.**

5.1 Switching operating light on and off

The on/off switch, power indicator light and sensor indicator light are located at the rear of the light head.



You can switch the operating light on/off either from the on/off switch, with the help of the infrared sensor, or simultaneously with the mains power.

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From on/off switch

Press the switch briefly to switch the light on. Pressing the switch a second time will switch the light off.

The power indicator light is on when the light has power.

With sensor

When you press the on/off switch for longer than 3 seconds the infrared light sensor is switched on/off (you will hear a signal tone). The sensor indicator light is on when the sensor is on.

Wave your hand shortly in front of the sensor to switch on/off the operating light. The light will switch on/off **after** you have moved your hand away from the sensor activation area. Also, you will hear a signal tone.

The sensor detects your hand movement from up to 13 cm (5.1 in.) distance from the infrared sensor.

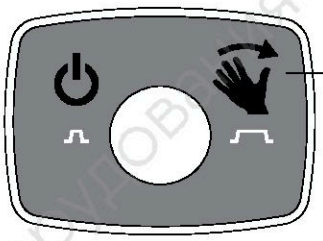
Simultaneously with mains power

When you press the on/off switch for longer than 15 seconds the operating light goes into a mode where the operating light is turned on/off at the same time with the mains power. While pressing the switch you will hear two signal tones; one after 3 and one after 15 seconds.

This mode is not available when the operating light is installed to a Planmeca Compact or a Planmeca Sovereign dental unit.

NOTE **If the operating light is installed to the Planmeca Compact i dental unit you can change the operation mode of the light by pressing the on/off switch for longer than 15 seconds (you will hear two signal tones; one after 3 and one after 15 seconds):**
1) The operating light can be switched on/off and its brightness can be adjusted from both the light and dental unit.
2) Brightness adjustment can be done only from the operating light. The light can be switched on/off from both the light and dental unit.

5.2 Adjusting brightness of operating light



The infrared light sensor of the operating light enables you to change the brightness of the light by waving your hand in front of the sensor. The sensor indicator light is on when the sensor is on.

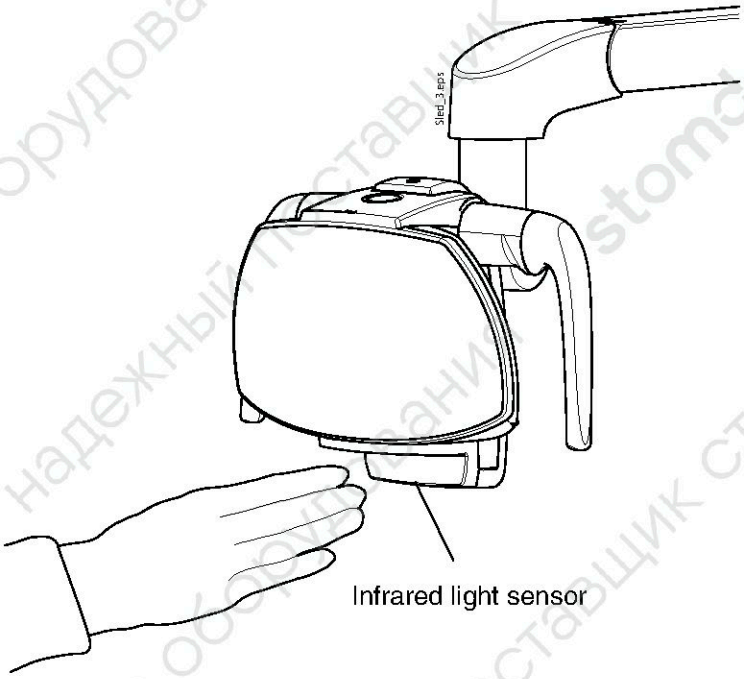
The sensor detects your hand movement from up to 13 cm (5.1 in.) distance from the infrared sensor.

Once the operation light is lit, keep your hand **longer** in front of the sensor to adjust the brightness of the light. The adjustment range is from 70% to 100% in steps of 1.

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You will hear a signal tone when the maximum/minimum brightness is reached.

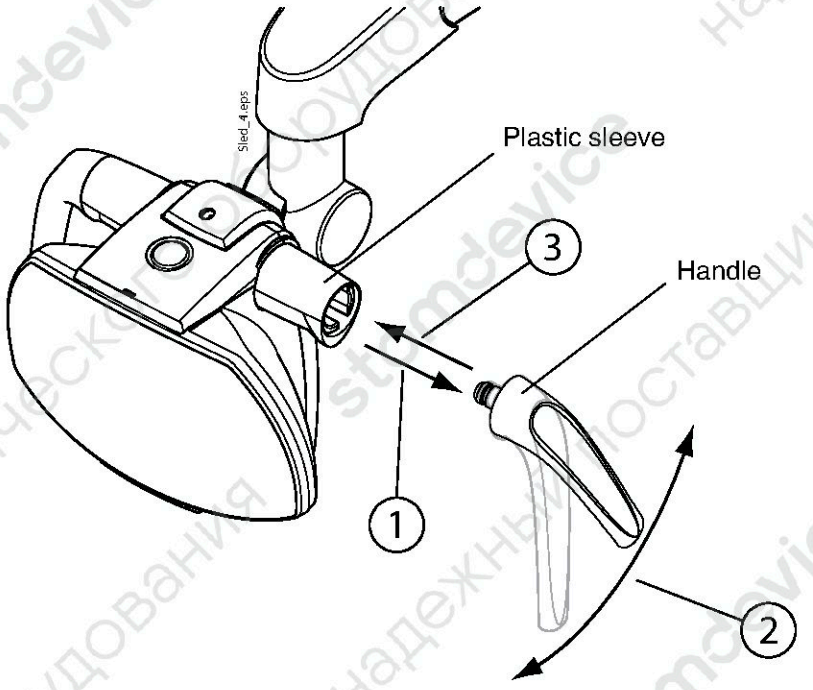


NOTE **If the operating light is installed to another manufacturer's dental unit, the brightness adjustment can be done only from the operating light.**

5.3 Adjusting handle positions

Remove the handle by pulling it carefully outwards (1). Rotate the handle to desired angle (2) and push it back to its position (3).

Rotate the plastic sleeve so that it fits the handle.



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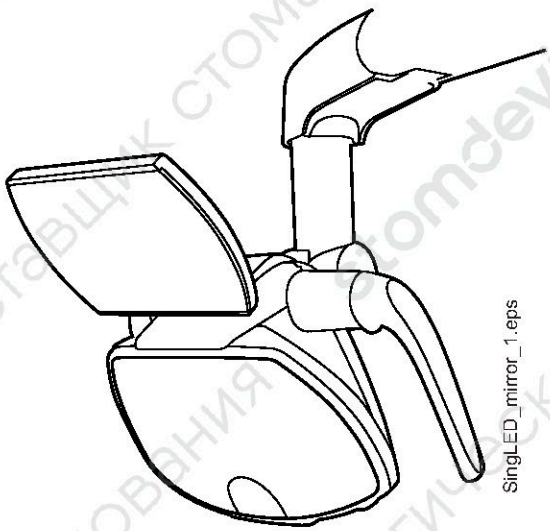
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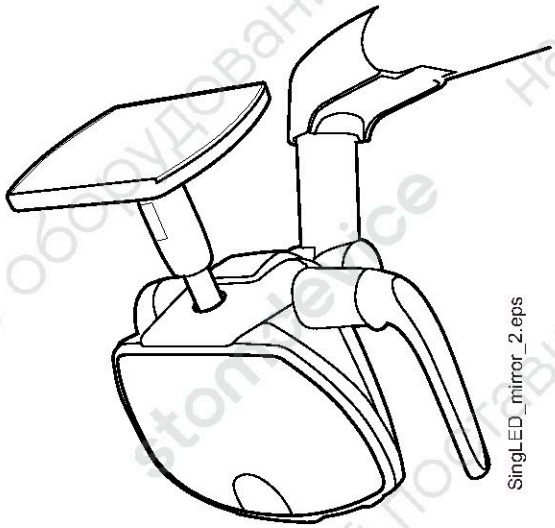
Replace the handles when needed, e.g. when they come off too easily. Use only handles supplied by Planmeca (see picture below).



5.4 Adjusting patient mirror position

When you want to turn the mirror away from the patient, turn the mirror upward as shown below. Do not turn the mirror to the sides.

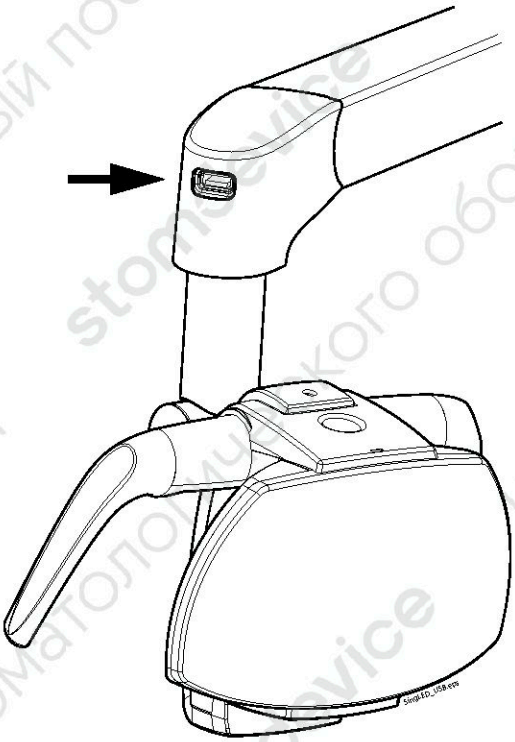




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5.5 Attaching USB device to operating light



The operating light has a USB port to which you can attach a USB device.

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6 CLEANING



WARNING
The LED housing and protective fascia heat up when the operating light is used. Allow these parts to cool before cleaning or removing the protective fascia. Always first turn off the power to the light externally before cleaning.

6.1 Light assembly

The Planmeca SingLED operating light is dustproof and impervious to spray vapour.

All exposed surfaces should be periodically wiped clean with a non-abrasive cleaning agent designed for cleaning dental units. When cleaning the light assembly make sure that the cloth is almost dry.

Stronger agents can be used for **disinfecting** the surfaces of the light. We recommend Dürr System Hygiene FD 333 or a similar disinfecting solution.

When needed, polish the cover with a dry and soft lint-free cloth.

Patient mirror

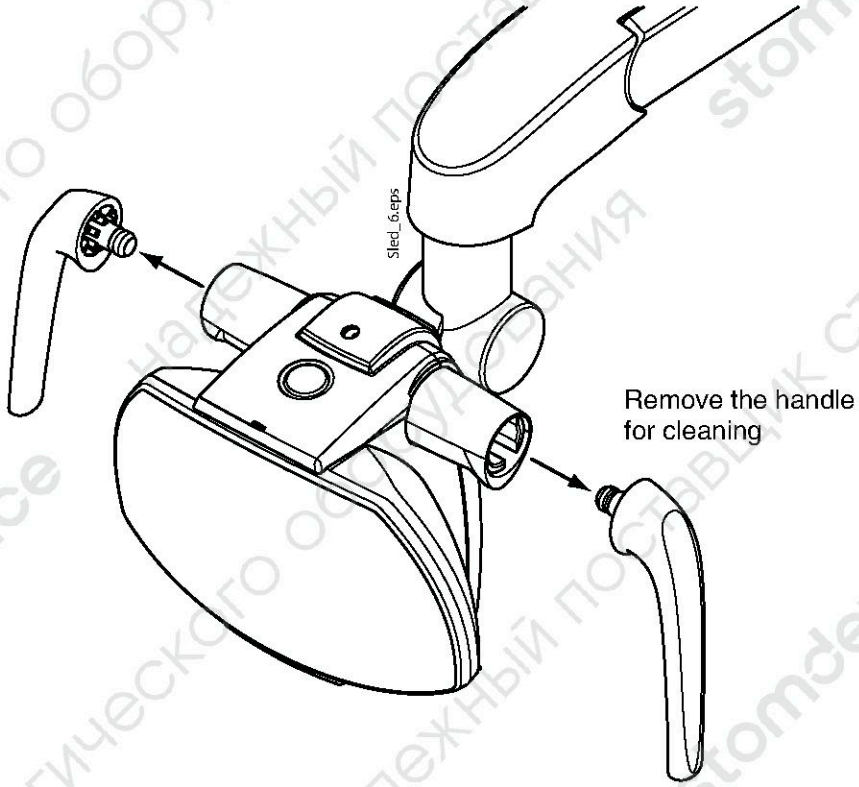
Clean the patient mirror with a mild soap- and water solution. Do not use alcohol-based cleaning agents.

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Handles

The two handles of the operating light can be removed and autoclaved up to 135°C. Remove the handle by carefully pulling it outwards.



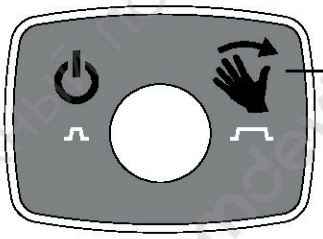
6.2 Arm

The arm should be periodically wiped clean with a non-abrasive cleaning agent designed to be used with dental units. Stronger agents can be used for disinfecting. We recommend Dürr System Hygiene FD 333 or a similar disinfecting solution.

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7 INDICATION OF ERRONEOUS OPERATION



If the Planmeca SingLED operating light detects a malfunction in the normal operation, the sensor indicator light starts to flash.

The reason for an erroneous operation may be one of the following:

- Error in the infrared sensor
- Broken LED
- Too low supply voltage
- Overheating of the LED
- Broken temperature sensor

In case of an erroneous operation, please contact your local Planmeca service technician.

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8 DISPOSAL OF OPERATING LIGHT

In order to reduce the environmental load over the product's entire lifecycle, Planmeca products are designed to be as safe as possible to manufacture, use and dispose of.

Parts which can be recycled should always be taken to the appropriate processing centres, after hazardous waste has been removed. Disposal of obsolete lights is the responsibility of the waste possessor.

All parts and components containing hazardous materials must be disposed of in accordance with waste legislation and instructions issued by the environmental authorities. The risks involved and the necessary precautions must be taken into account when handling waste products.

Disposal of Planmeca SingLED operating light

X = action, (X) = action in cases where processing is available

Part	Main materials for disposal	Recyclable material	Waste disposal site	Hazardous waste (separate collection)
Frame and covers				
- metal				
	Aluminium,	X		
	galvanized steel	X		
	Stainless steel	X		
- plastic				
	PE,	X		
	PE1000	X		
	PC+ABS,	X		
	PC, bright,	X		
	ABS,	X		
	POM,	X		
	PSU	X		
- rubber		X		
- glass		X		
Component boards		(X)		
Cables	Copper	X		
Packing	cardboard,	X		
	paper	X		
Other parts			X	

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9 TECHNICAL SPECIFICATIONS

Planmeca SingLED

Illumination intensity of 700 mm	8000 lx - 35000 lx (factory limitation)
Optimum colour temperature	5000-5500K
Classification	Class I, type B
Colour of the operating light arm	RAL 9016
Weight of SingLED light	8.1 kg (18.3 lbs)
Connection to supply	+15 VDC/0.9 A…+32 VDC/0.4 A 24 VAC/0.6 A50/60 Hz Separation for main supply 4 kV Air clearances 5 mm Creepage distances 8 mm Power supply must fulfill IEC60601-1 ed.3 (2005)
Power input	< 25 W

Power control (MENB1030A2402F01) (Optional)

Connection to supply	100 - 240 VAC
Supply frequency	50 / 60 Hz
Power output	24V/1.33A max

NOTE: When the Planmeca SingLED operating light is connected to other equipment, the current must be limited to max. 2 A with e.g. a fuse.

Environmental requirements

Operating conditions:

Temperatures:	+15°C to +35°C (+59°F to +95°F)
Relative humidity:	Non-condensing humidity; 5% RH to 95% RH
Air pressure:	800 hPa to 1060 hPa (12 psi to 15 psi)
Altitude:	< 2000 m (less than 1.25 miles)

Storage conditions:

Temperatures:	-5°C to +60°C (+23°F to +140°F)
Relative humidity:	Non-condensing humidity; 5% RH to 95% RH
Air pressure:	700 hPa to 1060 hPa (10 psi to 15 psi)

If the unit has been stored at temperatures below +10 °C (50 °F) for more than few hours, time must be allowed for the unit to reach the room temperature in its own package, before connecting the dental unit to mains voltage.

Transportation conditions:

Temperatures:	-20°C to +60°C (-4°F to 140°F)
Relative humidity:	Non-condensing humidity; 5% RH to 95% RH
Air pressure:	700 hPa to 1060 hPa (10 psi to 15 psi)

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Conformance with standard ISO 9680-2007

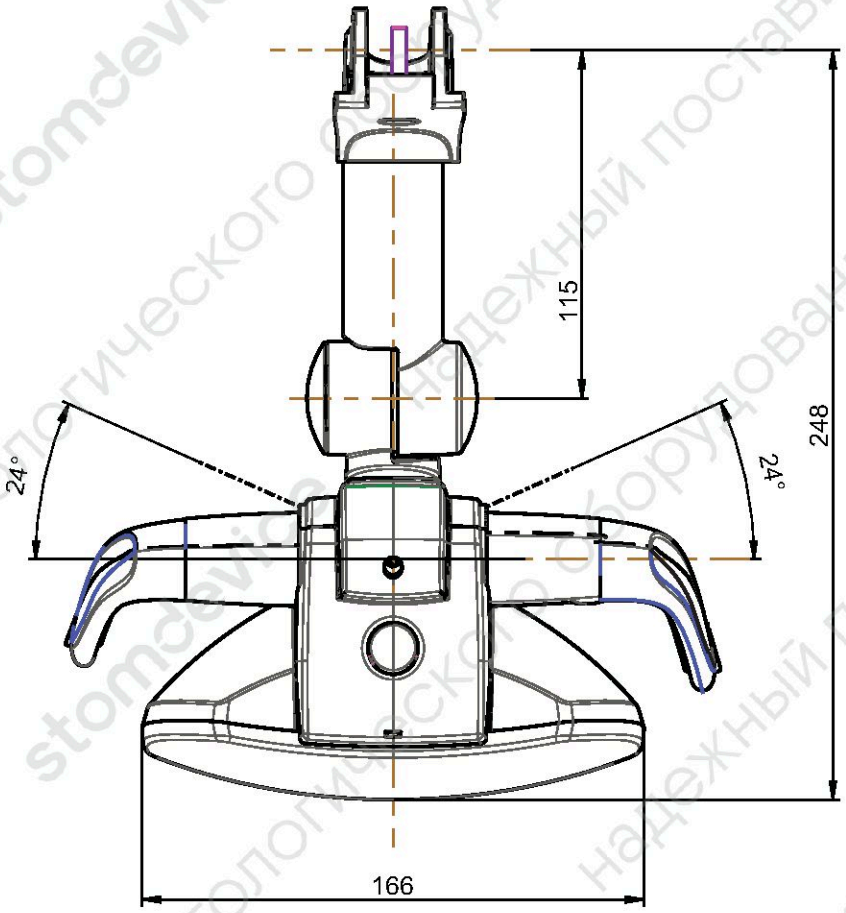
The measured sample does not fulfil the following parts of ISO/FDIS 9680:2007(E) standard:

5.2.7 Shadow: the hard shadow is too large in vertical and horizontal direction.
5.2.8 Colour rendering index: Ra is too low for diagnostic purposes.
5.2.9 UV irradiance: not measured 180nm to 200nm, because limition of measuring device.

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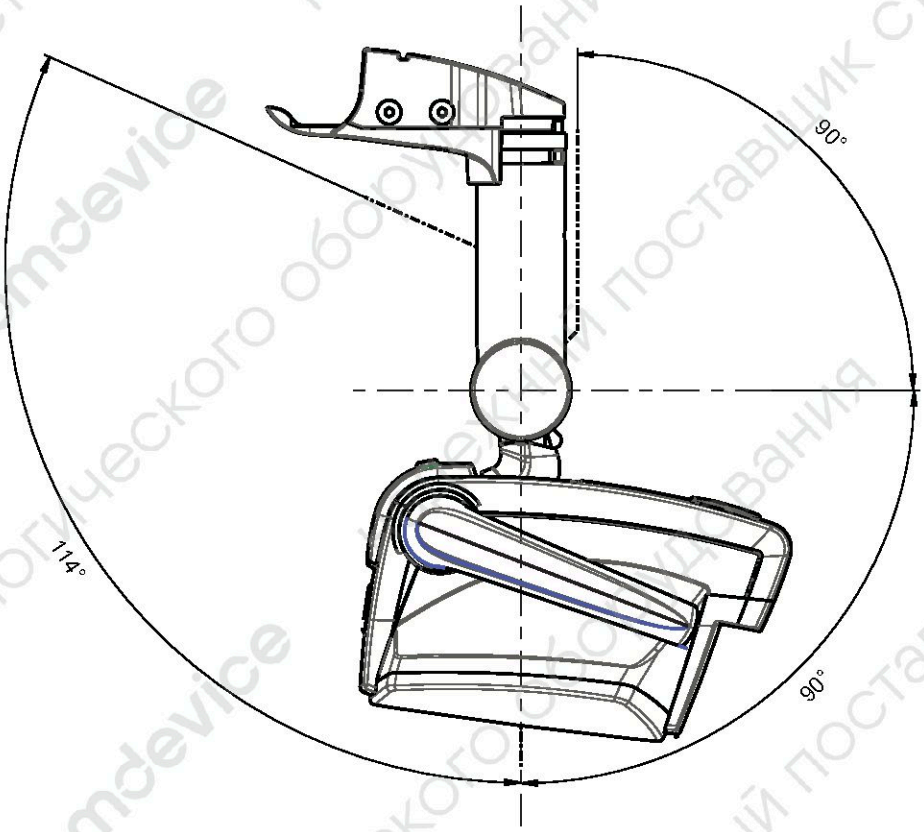
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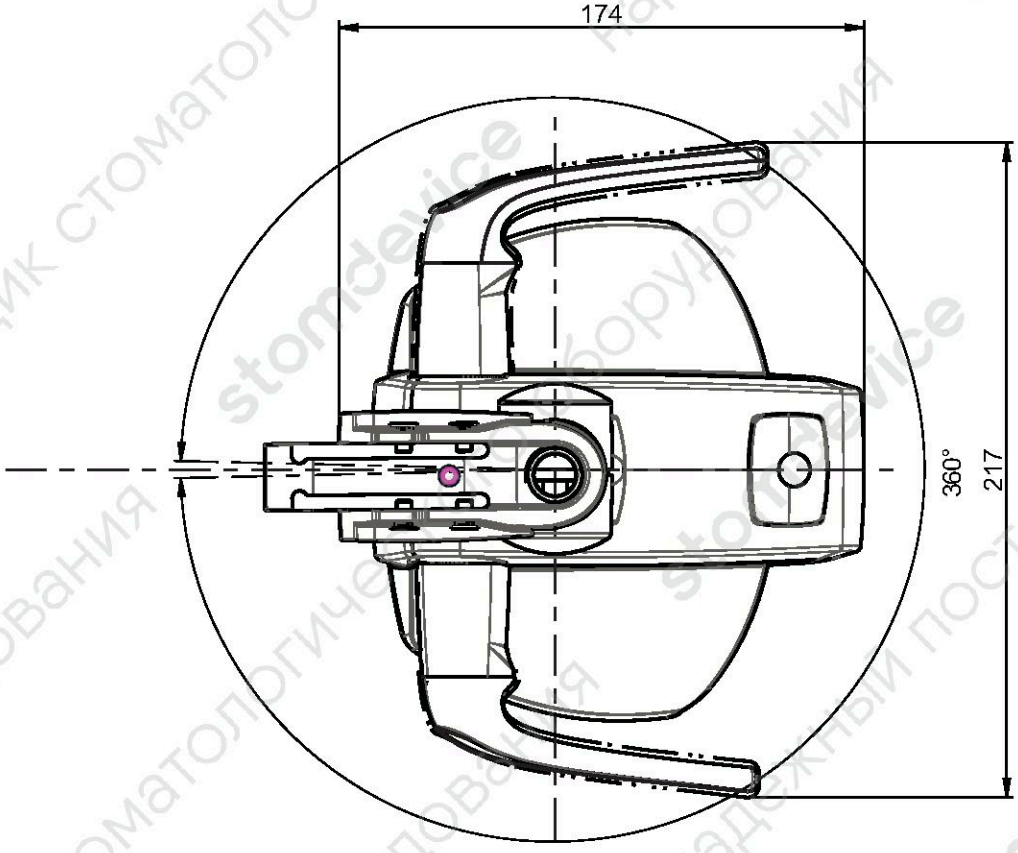
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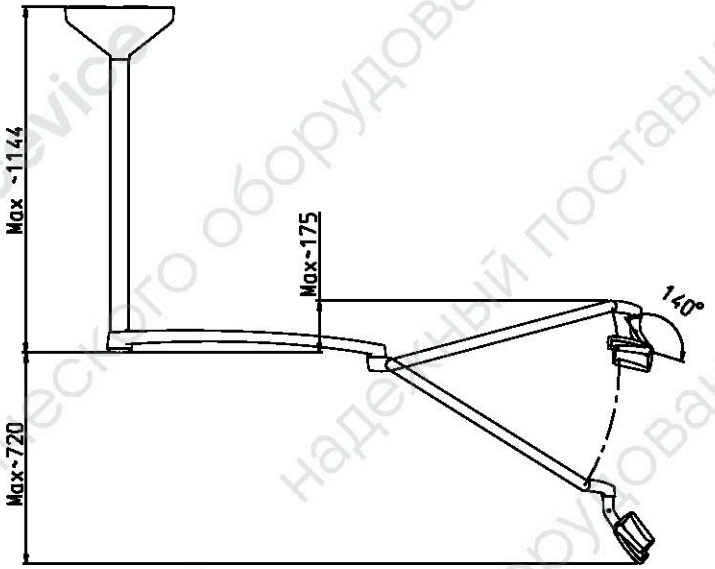
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Ceiling installation

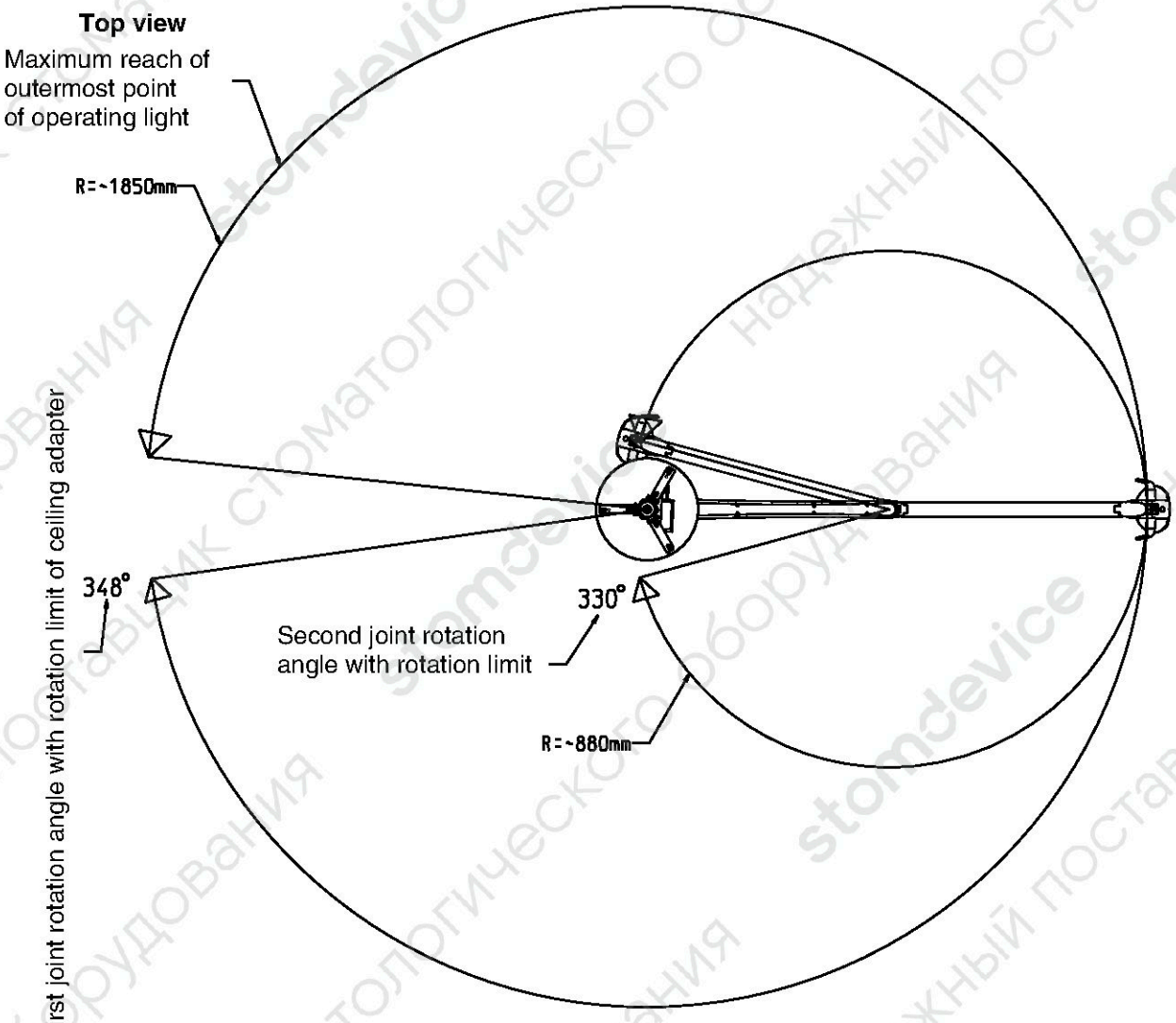
Side vie

Maximum room height 3000 mm



Top view

Maximum reach of outermost point of operating light



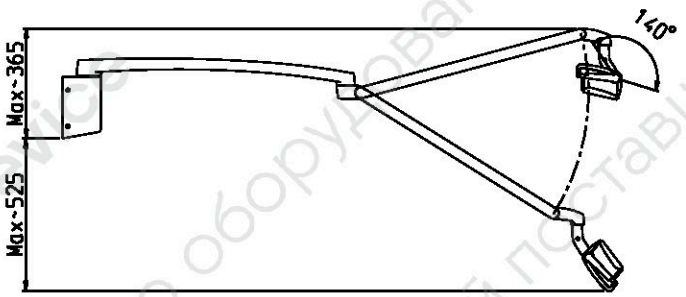
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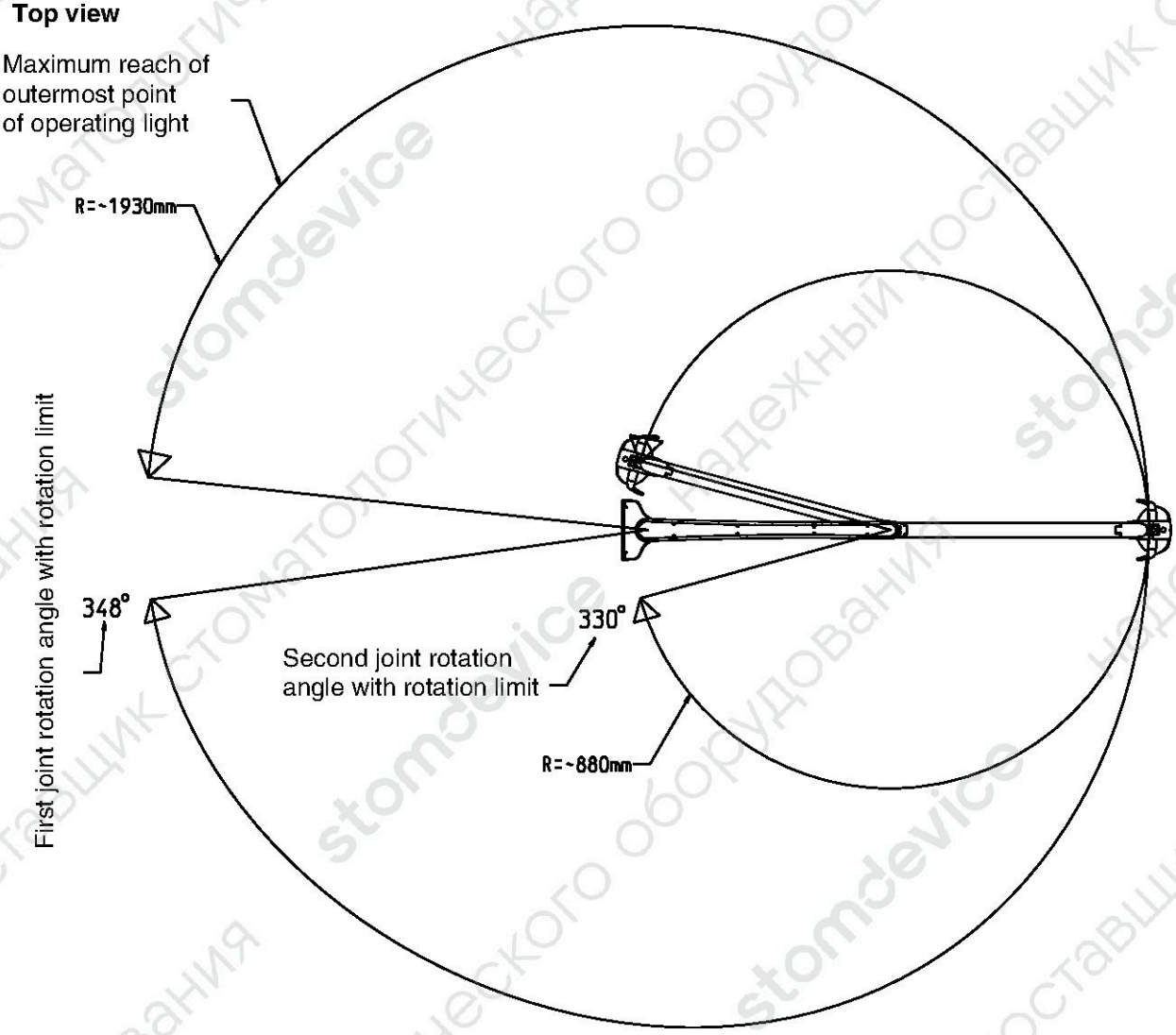
Wall installation

Side view

Recommended max. height from floor 1670 mm



Top view

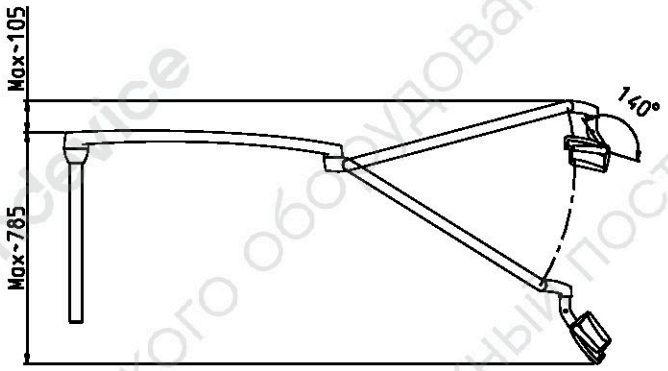


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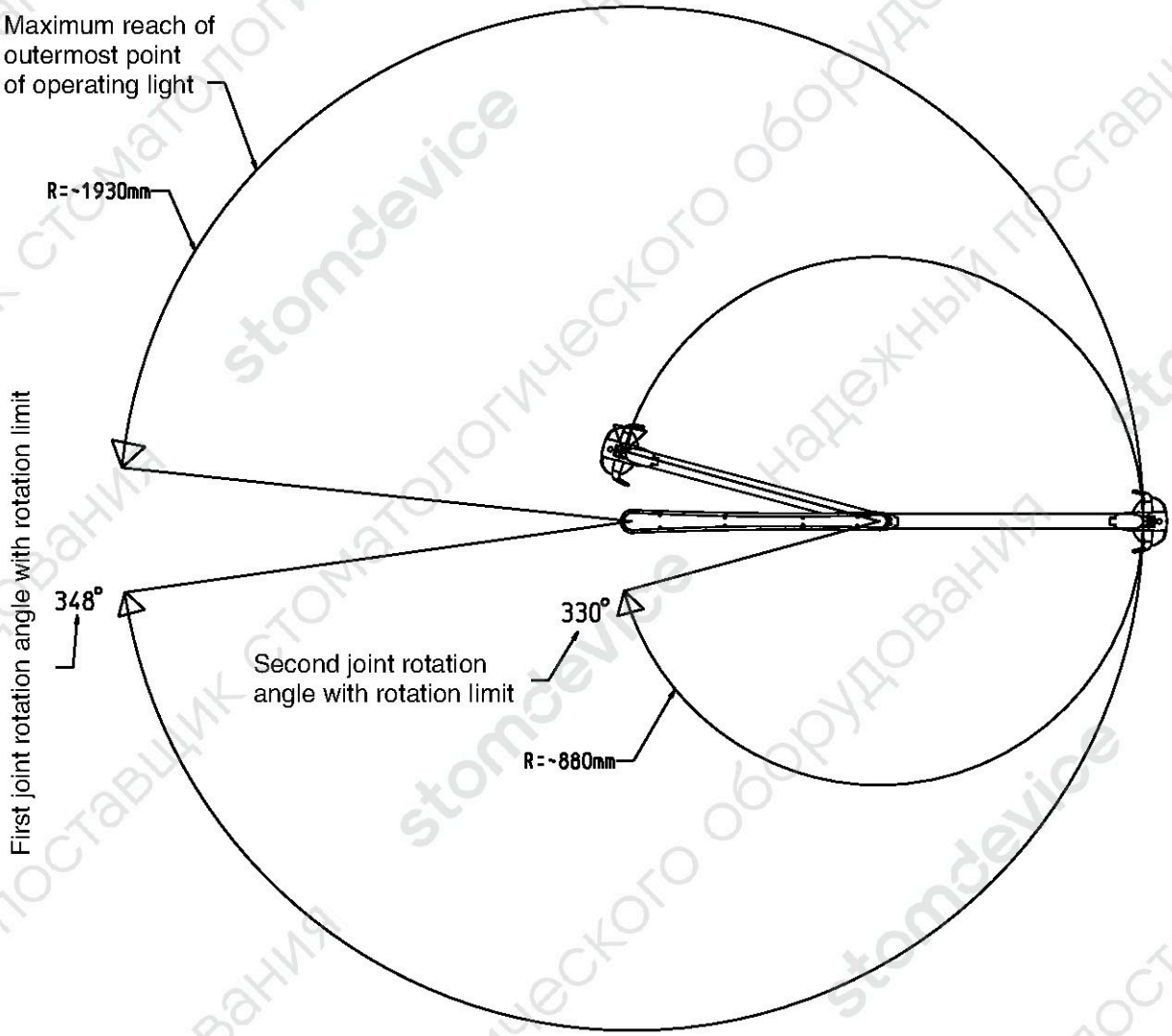
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Dental unit installation

Side view



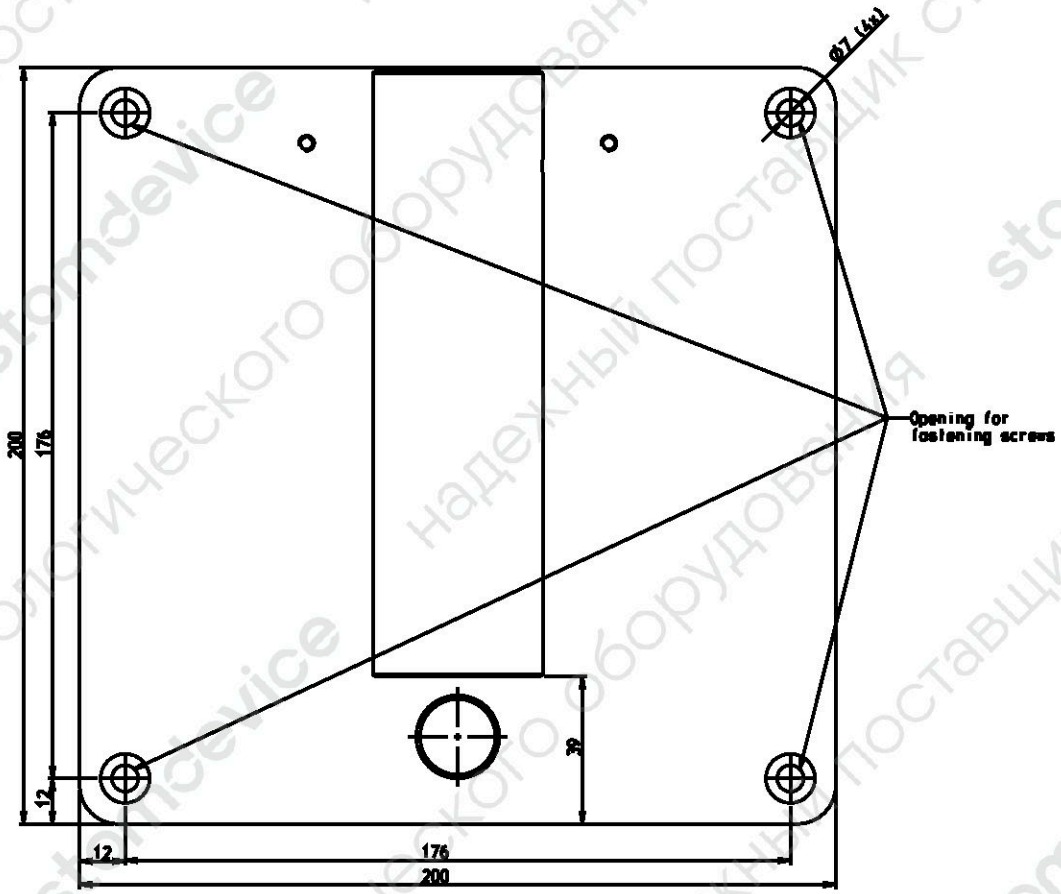
Top view



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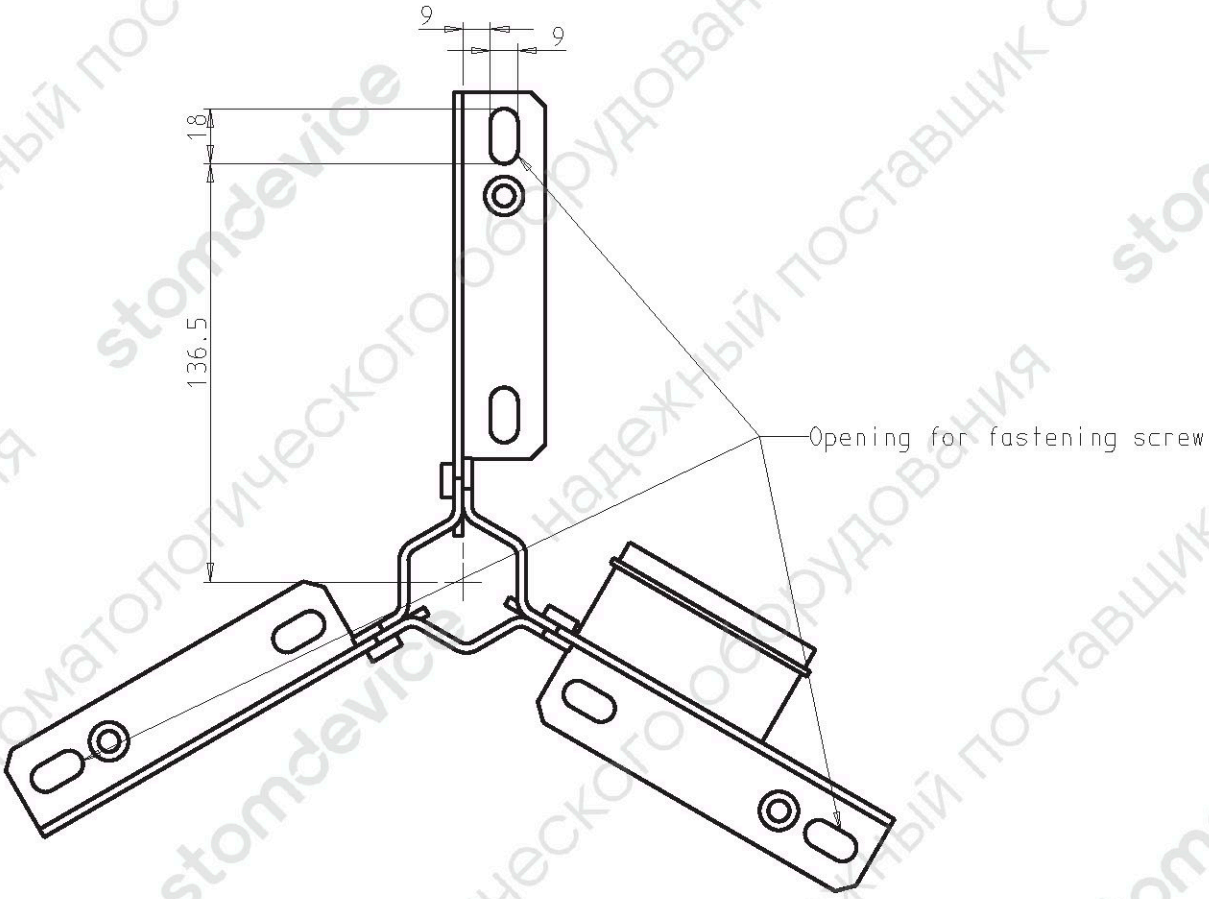
Dimensions of the wall plate (in mm)



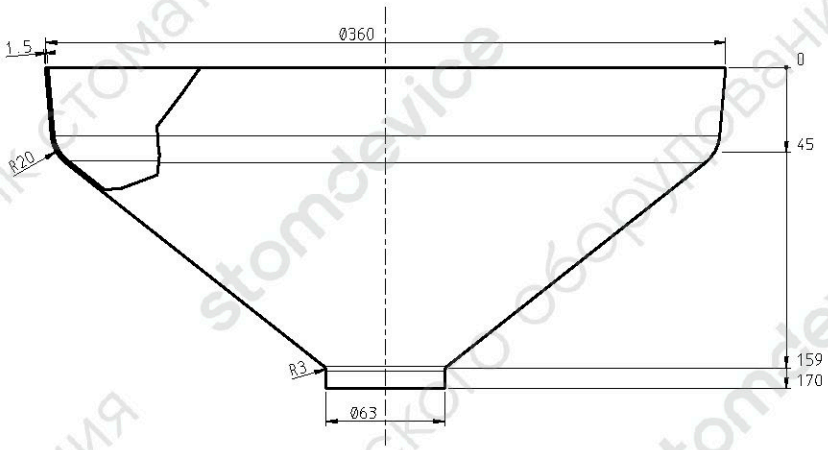
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Dimensions of the ceiling adapter (in mm)



Dimensions of ceiling adapter cover (in mm)



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10 MAINTENANCE PARTS

Part	Part number
Power supply MENB1030A2402F01 24V DC, (100-240VAC)	10017273
Handle	10020763

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