



# MEDICO

MEDICAL LUMINAIRE & DISTRIBUTION UNIT

Innovative design  
Functionality  
Modularity

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## MEDICO

Designer's note: Dušan Nešić

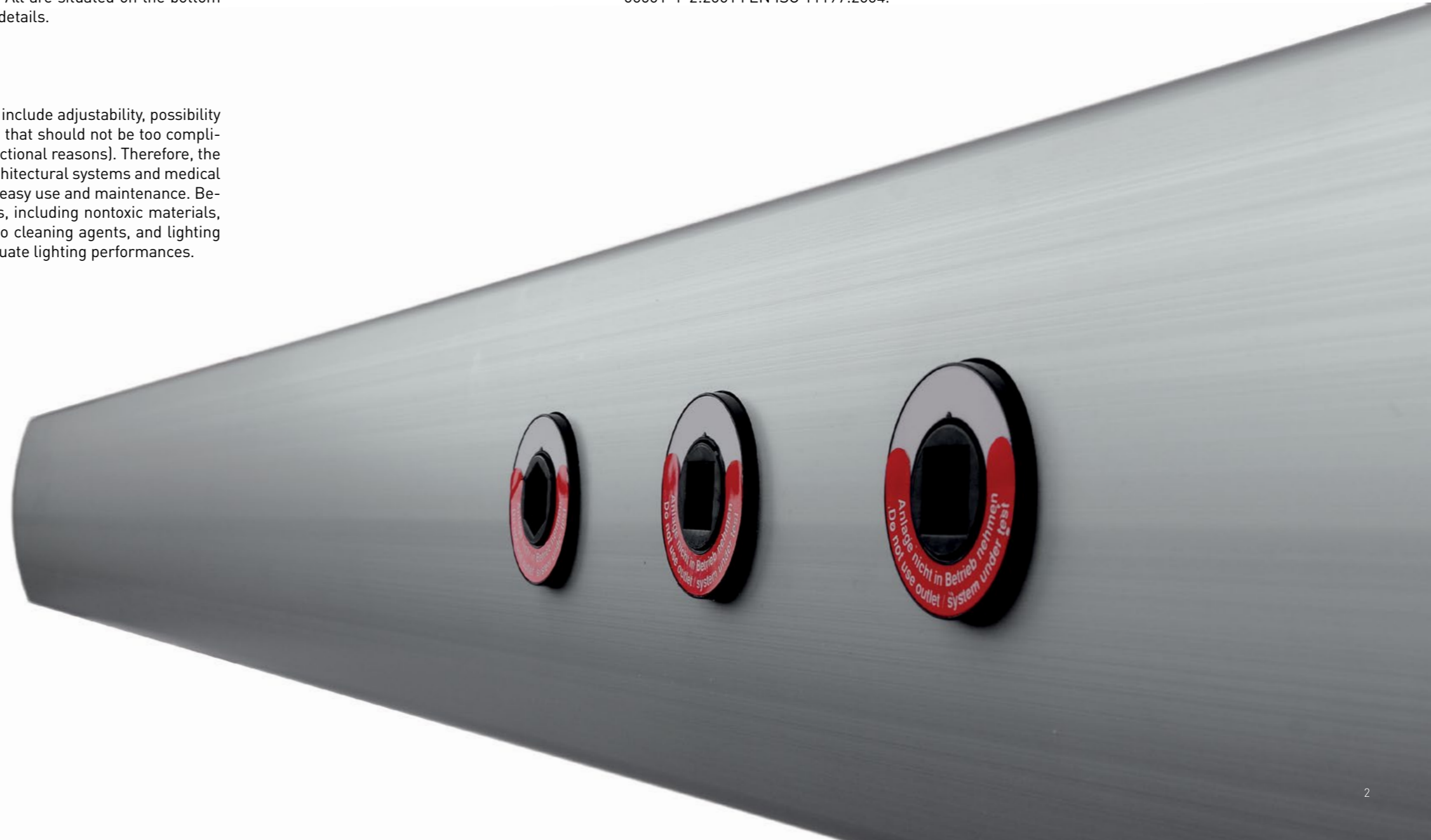
System MEDICO is a hospital lighting fitting and distribution unit which enables direct and indirect illumination of hospital rooms, as well as installations of electricity, communications, and medical gasses. It consists of three separate chambers: two for illumination and one for medical gasses. MEDICO can be equipped with many electrical and communication components: plugs and switches. All are situated on the bottom side, so the frontal panel is free of excessive technical details.

The demands of the modular system such as MEDICO include adjustability, possibility to create an optimal module for each space, a module that should not be too complicated (for cost savings reasons) nor too simple (for functional reasons). Therefore, the MEDICO system represents the synergy of modular architectural systems and medical program. Its' characteristics are simple mounting and easy use and maintenance. Besides respecting general standards for lighting fittings, including nontoxic materials, the materials and protection used must be resistant to cleaning agents, and lighting fittings, apart from the visual comfort, must have adequate lighting performances.

The standards for lighting fittings and medical appliances were respected as well, according to the directive of electromagnetic compatibility (instruments using low voltage) and directive for medical appliances. This lighting unit has the certificate of a renowned Swiss certification company SGS for conformance with the standards EN 60601-1-2:2001 i EN ISO 11197:2004.



reddot design award  
product design 2009

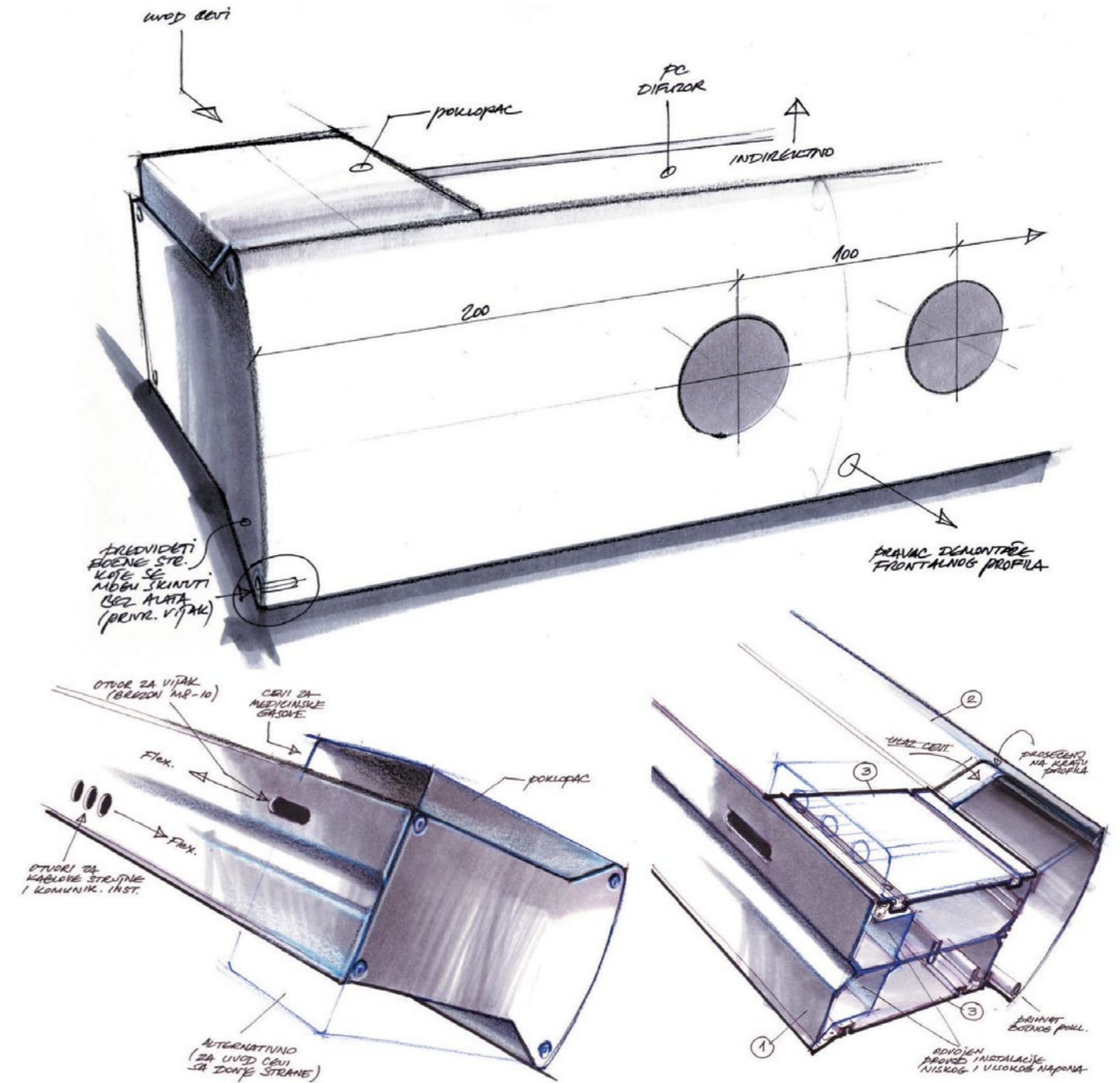




## DESIGN CONCEPT

'I had been thinking how to make MEDICO a pleasant, discrete part of the interior of a hospital room, how to make it look calming and harmless. I didn't want it to be another hospital appliance with many exaggerated buttons, plugs and cables, that would give the patients and visitors anxiety and unease which they usually have when seeing a medical appliance. This is of a particular importance, since the appliance is placed all day and night above the hospital bed.

The form is frontally free of numerous details, with only the gas sockets remaining, and even they look more like the usual buttons on many appliances in everyday use than the important sockets 'waiting' to be used. All the other things have been moved to the bottom side of the luminaire's body, away from the eye, yet functionally accessible and neat. The shape of the frontal panel directs the light directly and indirectly, shading the light sources and preventing glare, while hiding the installations of medical gasses. At the end the result is a form which is dominantly long, narrow and convex, in order to look soft and light, as a thin shade of light spreading up and down the wall, and which, although very reduced by dimensions and shape, unites the functional, ergonomic and aesthetic components.'



## FUNCTION & MODULARITY

MEDICO, with its' innovative design, represents the system for illumination of hospital rooms, intended for mounting above the hospital bed. The system provides full visual comfort to the patient above whose head it is mounted, as well as to medical staff during examination. This is achieved by the double role of the frontal panel: glare prevention and separate chamber with gas installations. Such an approach ensures a pleasant stay in the hospital to the patients, and provides the necessary conditions for the work of the medical staff.

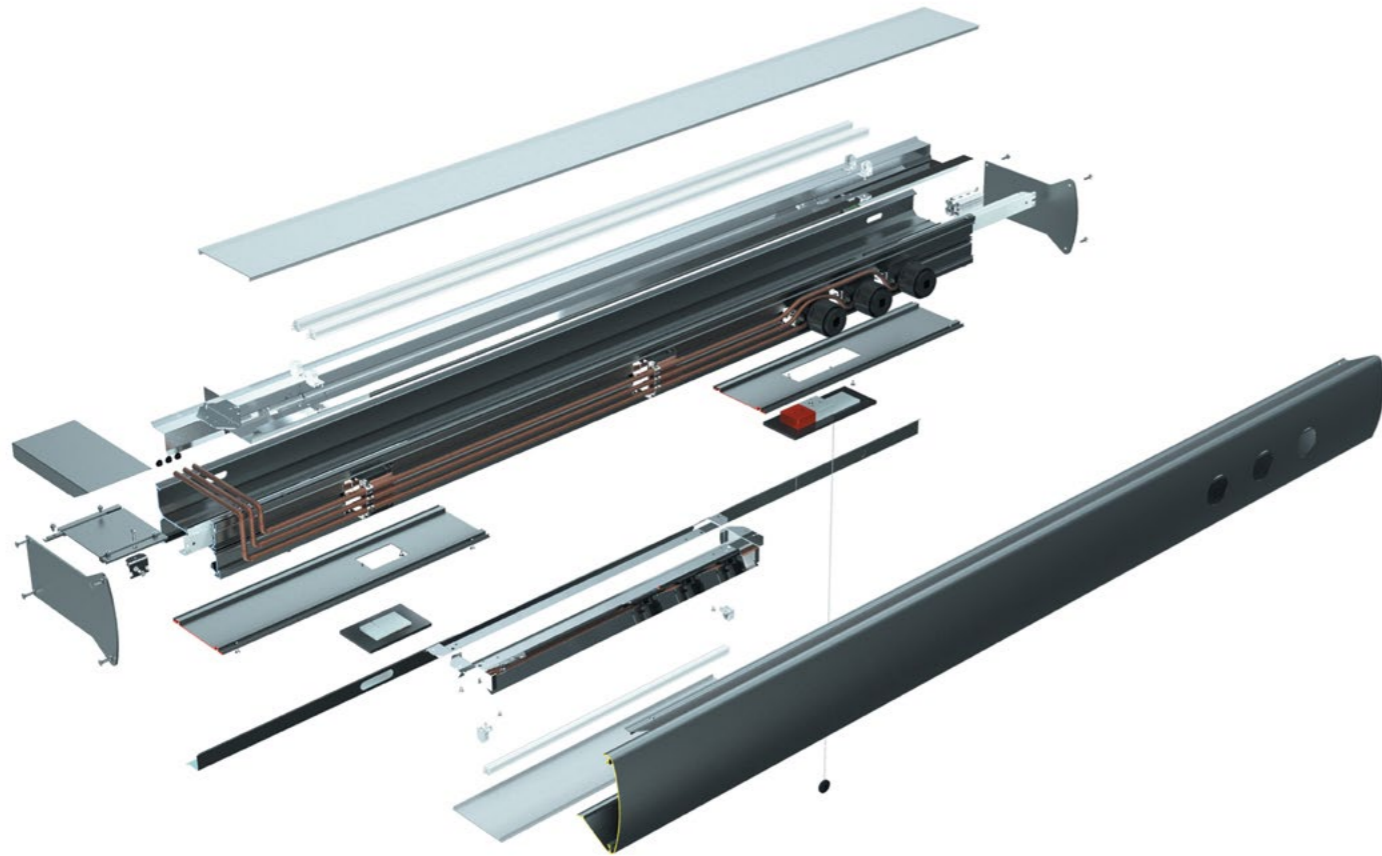
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The standard length of the luminaire MEDICO is 1.600 mm, but as the system is modular, it is possible to prolong it to 4.800mm by forming a three-module line. Thanks to the simple form, modularity and dimensional adjustability, MEDICO can be used in different hospital interiors.



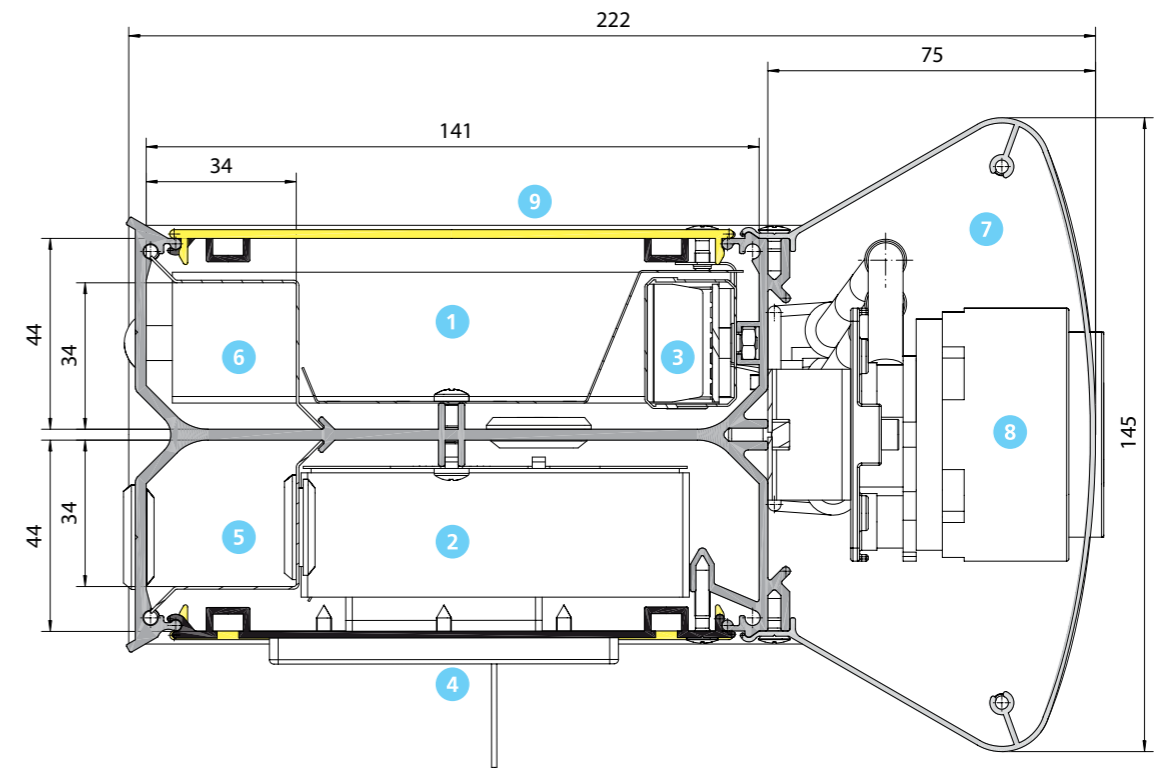
## CONSTRUCTION DETAILS

**MEDICO** has been made according to highest standards of safety and quality in EU: Certification of conformance SGS with standard EN 60601-1-2:2001 and standard EN ISO 11197: 2004.



## CROSS SECTION:

- 1. Section of indirect light
- 2. Section of direct light
- 3. LED driver / electronic ballasts
- 4. Electric and communication components
- 5. High voltage duct
- 6. Low voltage duct
- 7. Medical gasses duct
- 8. Gas sockets
- 9. Polycarbonate diffuser

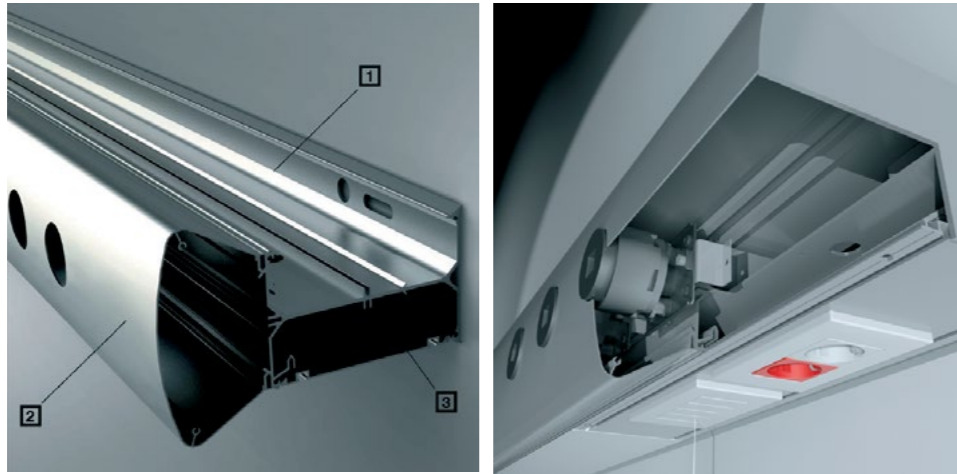




## CONSTRUCTION DISPOSITION

The structure of the lighting fitting is made of extruded aluminium profiles:

1. Body of the luminaire
2. Frontal cap
3. Panel for mounting electrical and communication components



The unit provides direct and indirect illumination. It consists of three completely separate chambers, out of which two are for illumination and additional components, while the third one is completely separate, forming at the same time the shield for glare prevention and a gas chamber.

The luminaires are intended for wall mounting above patients' beds.



**ELECTRICAL COMPONENTS** The luminaire MEDICO gives the option of installation of electrical components which correspond to different national standards: safety plugs, SOS call buttons (for nurse or doctor in attendance), dimmer buttons and other equipment, according to the specific requests. Installation of the components, positioning of the cables and testing are performed according to the relevant standards. The cables of electrical components are installed in a special duct. All the components installed are connected to the central distributor of mini-clamps, with possibility to attach the cables of cross section of max. 2,5 mm<sup>2</sup>.



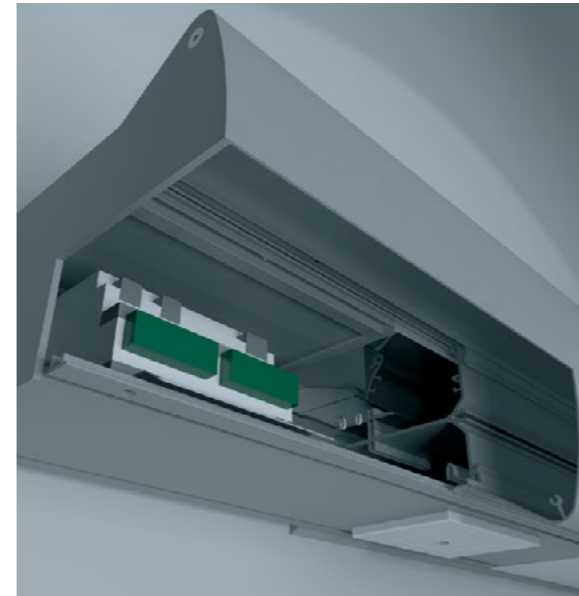
**EMERGENCY MODULE** The emergency module has the function of spare power supply of the lighting fitting, in case of power shortage. Provides necessary illumination of 1 or 3 hours.

**REMOTE SUPERVISION** The remote supervision module is the accessory enabling monitoring of the patient's state. Automatic or manual call of the medical staff, as well as lighting management system, are centralized for the department or the particular unit.



**COMMUNICATION** Standard communication components can be installed, such as telephone sockets, LAN/INTERNET, radio, SAT-TV, as well as systems for monitoring and transfer of the information regarding the state of the patient's vital functions. Different types and classes of signal cables needed for connecting communication equipment are installed in a separate duct, provided for low voltage net, and correspond to the relevant specifications.

**MEDICAL GASSES** The integrated distribution of medical gasses contains maximally three types of gasses and a socket for vacuum per one hospital bed. The distribution of gasses is made of copper tubes Ø8mm and connects the gas sockets with the central gas distribution of the hospital facility. The installation of the copper tubes fulfills the necessary specifications of the quality of medical equipment, as well as relative standards. The accessible dismantling of the frontal panel of the MEDICO enables easy maintenance.





**NIGHT LIGHT** Night light integrated in MEDICO system is a discrete indirect lighting component on the wall above patient's head. Thanks to this light, one can easily see the contours of all the objects in the room, so it enables to the patients and medical staff easy orientation in the room.

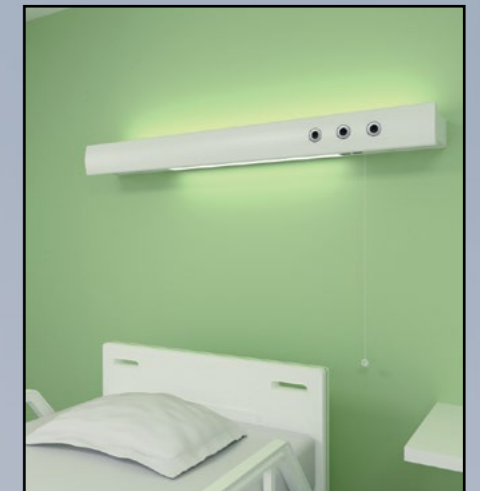
**READING LIGHT** The reading light is independent from other illumination in the room, and is switched on by a separate button. It is flexible and maneuverable, with LED light source. The light beam is directed in the desired direction, without distracting the visual comfort of the other patients. These are all the characteristics why it can be used as examination light as well.

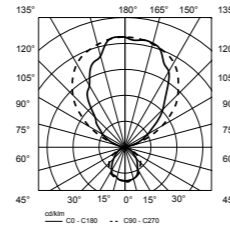
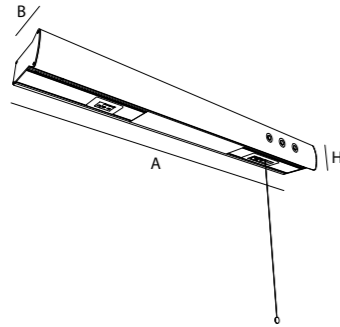


**INSTALLATION OF MEDICO** The luminaire MEDICO is easily and quickly installed to the electric current in the hospital facility. The central point of connecting to the current is by mini clamps for fast connection, situated in the bottom right side. The network sockets, communication components, medical gas sockets have all been separated by groups and connected with the hospital facility system, according to the relevant standards.









<b>Dimensions A / B / H</b>	1200, 1600 / 220 / 150 mm
<b>Ingress protection rating</b>	IP20
<b>Finish</b>	white, gray, anodised
<b>Weight</b>	8 kg, 11kg
<b>Luminaire luminous flux (t<sub>a</sub>=25°)</b>	1760 lm-5760 lm
<b>Total power</b>	16 W, 53 W
<b>Luminaire efficiency</b>	109,110 lm/W
<b>Light colour temperature / CRI</b>	4000K / 80
<b>LED service life</b>	65.000h L70B10 / SDCM 3
<b>Power supply</b>	220-240V, 50-60Hz
<b>Control gear</b>	ECG, DALI

**HOUSING** is made of extruded aluminum profiles, anodised and with polyester powder coating.

**LIGHT SOURCES** Luminaires are delivered with LED modules, of appropriate colour temperature, that provide adequate illumination and energy efficiency.

**OPTICS** Both direct and indirect light components have PC diffuser for a soft light.

**ELECTRICAL COMPONENTS** LED drivers, clamps are specified for conductors with cross section max. 2.5 mm<sup>2</sup>.

**LIGHTING MANAGEMENT** is enabled by choice of the adequate control gear.

- ADDITIONAL** Upon request, the system can integrate:
- separate ignition of direct and indirect light components;
  - integrated distribution of medical gases;
  - additional sockets, reading light, button for nurse, shade and volume control etc.
  - other light colour temperatures available.



**GENERAL** Bedhead lighting and distribution unit. Intended for hospital rooms, but can also be used in rooms such as laboratories and production of fine appliances.



