

## LEDVISION® 101 Operating Light from KARL STORZ

There is no compromise when human lives are at stake. LEDVISION™ 101 Operating light meets all the surgical team's requirements regarding state-of-the-art lighting within the surgical field.

### Key Features:

- ✓ Abundant light for large or small surgical fields, for critical cases and even deep body cavities.
- ✓ True-color light for an accurate display of even the tiniest nerve and vessel structures.
- ✓ Cool light that is gentle on the patient during longer procedures and provides the surgeon with a comfortable work environment.

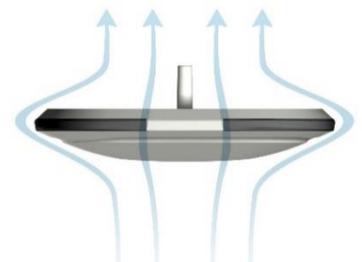


Utilizing efficient and advanced LED technology, LEDVISION™ 101 operating light meets the highest professional requirements. It is a concentrate of design and innovation with an excellent value for money, making innovation accessible to all.

Each copula consists of eight modules of 4 LEDs. Endowed with exclusive innovations, LEDVISION™ 101 becomes a cutting-edge lighting to satisfy the surgical requirements.

LEDVISION™ 101 places the patient in the right light. It grows with your medical requirements and surgical workflows – whether it is used as a single light in a treatment room, for endoscopic procedures, in major open surgeries, or in a hybrid operating room.

The mounting of a central ceiling pendant system via support arms or outside the laminar airflow field provides options that work for any room.



### Highly efficient LED technology

The newest-generation, energy-efficient system consumes little power, produces less heat than conventional systems, and ensures shadow-free illumination of the surgical field. The LEDs have a lifespan of more than 60,000 hours, corresponding to ten years of operation in the OR. Thanks to their low weight, the light fixtures are very mobile.

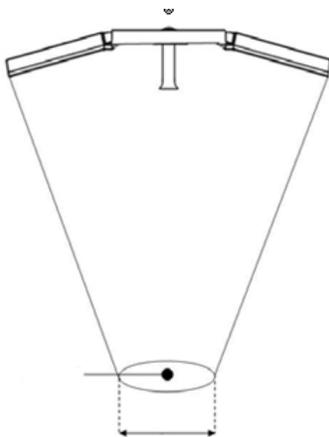
### Obvious user advantages

Highly efficient LEDs offer outstanding color rendering. Variable color temperature permits better adaptation to the various tissue types and their reflection properties. For example, in endoscopic procedure rooms, the Endo mode supports the operator with indirect ambient light. The absence of infrared radiation prevents tissue dehydration.

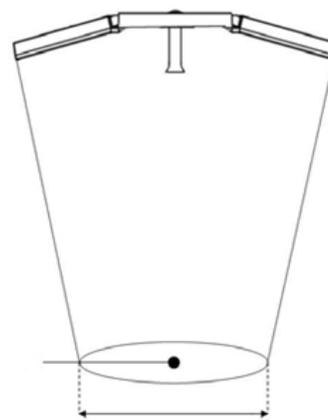


### Designed to optimize sterility

Postoperative infections is a particularly important issue in extended procedures near the bone or involving implants. Operation under laminar flow ceilings with germ-free air flow presents special challenges for light fixture design. LEDVISION™ 101 meets these requirements with its open housing concept with optimized air flow design, smooth surfaces, and an energy-efficient lighting concept with moderate heat development. It thereby supports the sterility of the surgical site.



**1,60,000 lux at a 22 cm light field**



**1,60,000 lux at a 26 cm light field**

## Gesture control

At the LEDVISION™ 101 illuminance, colour temperature and light field diameter can be controlled directly at the light head via gesture control. Thereby the control of these parameters is contactless and therefore sterile. To do this, drive over the sensor in approx. 5cm distance with your hand.

- ✓ **contactless** (gesture control only)
- ✓ via wireless remote control



Adjust colour temperature



3 500K	● ○ ○ ○ ○ ○
4 000K	● ● ○ ○ ○ ○
4 500K	● ● ● ● ● ●

Adjust illuminance



50 000 lux	● ○ ○ ○ ○ ○
72 000 lux	● ● ○ ○ ○ ○
94 000 lux	● ● ● ○ ○ ○
116 000 lux	● ● ● ● ○ ○
138 000 lux	● ● ● ● ● ○
160 000 lux	● ● ● ● ● ●

Adjust light field diameter



22 cm	● ○ ○ ○ ○ ○
24 cm	● ● ○ ○ ○ ○
26 cm	● ● ● ● ● ●

## Mechanical setup

Ceiling-mounted operating light, consisting of electronic power supply, ceiling tube, central axis, horizontal swivel arm, spring arm, cardanic suspension and light head. The system is mounted either by using an anchor plate, or by an intermediate ceiling construction, depending on the situation on-site. LEDVISION™ 101 can be installed wall-mounted and mobile, too.

The ceiling-mounted suspension system can carry 2 light heads, which can be shifted or rotated horizontally or vertically. Each light has its own sterile and non-sterile handle for positioning as well as a control panel. Design and technology take the hygienic requirements for efficient disinfection and operation with Laminar Air Flow ceilings into account.

The swivel arms can be free rotated for all lights.

### Lighting technology and optical system

Combined with optical lenses, high-performance LEDs ensure a shadow-free illumination of the operating field and provide a deep-cavity illumination. The light is free of infrared radiation and the beam is variable in colour temperature, both in the size of the field and in light intensity. The unique CLM technology (Constant Light Management) can maintain the illuminance on a constant level independent from the diameter of the illuminated pattern. The utilized LEDs feature an extremely long service life with highest colour rendition properties.

### Preventive regulator circuits and maintenance functions

- Constant light output during short- and long-term usage
- Permanent temperature control of each LED section.
- Compensation of LED degradation through pulse width modulation (PWM).
- Compensation of colour drifts throughout the entire LED service life
- Protection against overheating including power control of each LED section.



Illuminance, colour temperature and light field diameter can be controlled directly at light head via gesture control. Thereby the control is contactless

### Equipment options

- Wireless wall panel with all operating functions
- Special semi-cardanic suspension for low ceiling heights

### Electrical data

Supply voltage		100–240V AC
Dimensions of electronic power supply (l x w x h)	mm	178x98x38
Primary voltage of electronic power supply	V	100 – 240 50/60 Hz
Max. input power of electronic power supply at 24 V	W	225
Output voltage	V DC	27.3
Nominal power of light at max. illuminance + smallest field diameter	W	<75
Nominal power of light at max. illuminance + largest field diameter	W	75
Effective service life of LEDs	h	>60000
Electronics fulfil the requirements of VDE and IEC		Yes
Classification acc to MDD		I
IP class of suspension system		IP 30
IP class of light head Conformity		IP 54
Conformity		CE

### Mechanical data

### Photometric Data

Minimum room height	mm	2700, pass height 2.15m	Central illuminance dimmable from / to	%	30 – 100
Minimum room height for low ceiling version	mm	appr. 2400	Max. central illuminance $E_c$ in 1 m distance at minimal or maximal light field diameter	lx	160,000
Fully cardanic suspension of light head		yes	Min. field diameter (d10, distance 1 m)	mm	220
Swivel radius (1- /2- arms)	mm	1604/1754	Min. field diameter (d50, distance 1 m)	mm	180
Height adjustment of spring arm	mm	1188	Max. field diameter (d10, distance 1 m)	mm	260
Highest position of light head at 2.20 m pass height	mm	> 2000	Illuminance in endoscopy mode (1m)	lx	3000
Dimensions of anchor plate	mm	470 x 523	Illuminance in endoscopy mode (2m)	lx	appr. 750
Lowest position of light head at 2.20 m pass height	mm	966	Colour temperature	K	3500 – 4500
Rotation stop in standard/camera mode		no/no	Colour rendition index Ra (1 – 8)		96
Force to lift or lower the light head	N	≈ 2	Red colour rendering index R9		96
Force to swivel the light head	N	≈ 20	Endoscopy mode		yes
Max. perpendicular weight	N	730	Total irradiance at max. illuminance	W/m <sup>2</sup>	545
Total weight of single/double light without intermediate ceiling construction	kg	74.5/111.5	Luminous efficacy (≈ Luminaire's efficiency)	lm/W	275
Approx. weight (standard ceiling tube)	kg/m	10	Depth of illumination acc. to EN 60601-2-41 L1+ L2 (20% $E_c$ )	mm	1280
Approx. weight (swivel arm, central axis, spring arm)	kg	20	Depth of illumination acc. to EN 60601-2-41 L1+ L2 (60% $E_c$ )	mm	770
Approx. weight (electronic power supply)	kg	0.75	Shadow dilution factor with one mask	%	40

### Mechanical data

### Photometric Data

Approx. weight (light head)	kg	13	Shadow dilution factor with two masks	%	44
Torque bending moment of single/double light	Nm	350/736	Shadow dilution factor with tube	%	100
Permissible ambient temperature during operation	°C	+5 to +40	Shadow dilution factor with tube and one mask	%	41
Storage temperature	°C	-10 to +50	Shadow dilution factor with tube and two masks	%	47
Shock/impact resistance		8g / 10ms	UV-irradiance for wavelengths < 400 nm	W/m <sup>2</sup>	<1
Vibro stability		10–180Hz / 0.15 mm/2g	Irradiance E <sub>e</sub> / Illuminance E <sub>c</sub>	mW/m <sup>2</sup> lx	3.6
Dimensions of canopy	mm	Ø 600 x 150	No. of LEDs		32
Diameter of light head	mm	685			



## Perfecting SURGICAL Outcomes

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