LEDVISION® – OR lights from KARL STORZ

There is no compromise when human lives are at stake. LEDVISION® OR lights meet all of 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.
• Shadow-free lighting with sharp contours thanks to multiple LED light sources.
• Integrated in the KARL STORZ OR1™ system – with convenient control, even from the sterile field.
• Documentation of the surgical procedure under sterile conditions through a centrally integrated HD camera.
• Gesture control for maximum hygienic safety offered by the latest OR light, LEDVISION® 101.

LEDVISION® 101/101 with 32” monitor holder places the patient in the right light.
Benefits – ergonomic and well-designed

Support arm systems for any OR
With 3 model configurations and many combinable options, the LEDVISION® family of lights meets all lighting needs.
LEDVISION® 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 with up to 4 support arms, providing exceptional illumination, documentation, control, and display capabilities.
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 in all models 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 infection 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® 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.

**Preventive maintenance functions**

Intelligent software takes precautions to ensure a long, uninterrupted service life. Short-term lighting fluctuations as well as age-related degradation are permanently monitored and compensated through the LED light sources’ pulse-width modulation. In addition, the temperature of the light modules is monitored. If necessary, individual LEDs are preventively switched off before they are seriously damaged.

This novel LED lighting concept implements the fully electronic, variable adjustment of light field size. This means no more maintenance of movable mechanical light fixture components. With LEDVISION®, you are sure to have a fully functional medical device across all photometric values, even decades from now.
Advantages – unique and efficient

Variable light in its purest form – Constant Light Management is the answer

Conventional lighting systems lose intensity when the current light field is adapted to fit a larger surgical field. The patented CLM system keeps the central illuminance constant, regardless of the chosen light field size. The surgeon is always supplied with the same, pre-selected light quantity and quality, without having to make any adjustments. LEDVISION® lights solve this task in a unique way.

Even changes in distance do not require refocusing the light head.

160,000 lux at a small light field of 28 cm
160,000 lux at a large light field of 33 cm

Safety in power outages

Natural disasters or technical defects occasionally interrupt the power supply. We eliminate this risk with an optional off-grid uninterruptible battery backup that runs the lights for two hours to allow unproblematic completion of the surgical procedure.
LEDVISION® is another component of the KARL STORZ OR1™ integrated operating room system

Central control of the OR light

*Applies to types 203, 202, 101

Gesture control

Touchless control of illumination, color temperature and size of the illuminated field.

*Applies to type 101
Options – flexible and expandable

**Camera**
Documentation of the surgical procedure, live transmissions, or intraoperative consultation with a colleague are part of daily routine. For this purpose, KARL STORZ offers an integrated camera system with zoom telescope and image capture in the light’s sterile handle or alternatively on a separate additional arm. A converter allows the use of various video source formats and supplies multiple output signals. There is a choice between a fully wireless transmission of control and image signals or wired transmission.

The LEDVISION® FULL HD camera system plus OR light can be attached to any arm of the central axis and offers unlimited rotation. Handling and positioning are thus made easy.

**Control**
The infection risk for patients rises with the frequency of people approaching the sterile area during the procedure. The optional wall control unit can reduce this risk.

**Integration**
Central control of therapeutic medical devices in the OR via a sterile or non-sterile control unit provides effective utilization of surgical sources. The integration of the LEDVISION® lights and cameras in the KARL STORZ OR1™ integrated surgical system offers cutting-edge control options with greater flexibility.
LEDVISION® OR lights from KARL STORZ

Monitor support arms
KARL STORZ offers arms with mounts for monitors and touch screens of various sizes. A key advantage is the fact that our support and spring arms have an optimized inner diameter for power and data cables. Systems with fiberglass technology facilitate attachment and retrofitting of end devices and are part of the KARL STORZ OR1 FUSION® architecture.

Floorstand light
Various configurations
- Ceiling-mounted light with one support arm or lamp combination with up to four support arms for the main light, auxiliary lights, monitor support arm, or other end devices
- Mobile floorstand light, optionally also with battery backup that operates for 2 hours
Customer-specific room solutions
Every operating room looks different. Refurbishments of old buildings present the manufacturer with different challenges compared to new constructions. Low ceiling heights may require special supports. In cases of very high bare ceilings or statically inadequate ceilings, KARL STORZ will be happy to offer advice and suitable solutions.
## Technical data

<table>
<thead>
<tr>
<th></th>
<th>LEDVISION® 203</th>
<th>LEDVISION® 202</th>
<th>LEDVISION® 101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central illuminance at 1 m distance</td>
<td>lx</td>
<td>160,000</td>
<td>160,000</td>
</tr>
<tr>
<td>Central illuminance electronically dimmable from/to</td>
<td>%</td>
<td>31-100</td>
<td>31-100</td>
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<tr>
<td>Illuminated field</td>
<td>cm</td>
<td>28-33</td>
<td>27-31</td>
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<tr>
<td>Color rendering index $R_a$</td>
<td></td>
<td>98</td>
<td>98</td>
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<tr>
<td>Color temperature</td>
<td>K</td>
<td>3500-5000</td>
<td>3500-5000</td>
</tr>
<tr>
<td>Depth of illumination in accordance with EN 60601-2-41 (L1 + L2) at 20% $E_c$</td>
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<td>1300</td>
<td>1100</td>
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<tr>
<td>Depth of illumination in accordance with EN 60601-2-41 (L1 + L2) at 60% $E_c$</td>
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<tr>
<td>Endoscopy mode</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Fully cardanic suspension of light fixture</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Weight of individual light fixture</td>
<td>kg</td>
<td>15</td>
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<tr>
<td>Diameter of light fixture</td>
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<td>640</td>
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<tr>
<td>IP rating of light fixture</td>
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<tr>
<td>Classification in accordance with MDD</td>
<td></td>
<td>l</td>
<td>l</td>
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<td>Conformity</td>
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## HD camera integrated in the light head or separate arm

<table>
<thead>
<tr>
<th>Functionality</th>
<th>&quot;Wired&quot; Version</th>
<th>&quot;Wireless&quot; Version</th>
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</thead>
<tbody>
<tr>
<td>Transmission</td>
<td>Image signals wired</td>
<td>Image and control signals wireless</td>
</tr>
<tr>
<td></td>
<td>Control signals wireless</td>
<td></td>
</tr>
<tr>
<td>Image sensor</td>
<td>1/3'' CMOS</td>
<td>1/3'' CMOS</td>
</tr>
<tr>
<td>Number of pixels</td>
<td>2.4 megapixels</td>
<td>2.4 megapixels</td>
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<tr>
<td>Resolution</td>
<td>1080i</td>
<td>1080p60</td>
</tr>
<tr>
<td>Zoom factor</td>
<td>10 x optical, 32 x digital</td>
<td>10 x optical, 32 x digital</td>
</tr>
<tr>
<td>Focal length</td>
<td>$f = 5.1\text{-}51$ mm</td>
<td>$f = 5.1\text{-}51$ mm</td>
</tr>
</tbody>
</table>

It is recommended to check the suitability of the product for the intended procedure prior to use.