MARTIN lighting technology
ML series

www.martin-med.com
The sun gives us light, a great source of life. Our eyes absorb this light, which enables us to perceive our environment in all its vivid colors. The lower the brightness, the more limited our vision becomes. In the darkness, we are deprived of our most important sensory organ.

Light means life

The human eye enables us to "see" radiation in the range of 380 to 780 nm. Daylight is the measure by which we judge our artificial light sources. The essential parameter is "color temperature".

Martin operating lights generate a color temperature of approx. 4,200 K, which means practically daylight quality. This has the great advantage that the tissue surfaces and microstructures can be perceived in their natural colors.

The color temperature

Thanks to their quasi-daylight color temperature and the excellent lighting properties, the Martin operating lights provide optimum working conditions in the OR.

Heat is eliminated

In physical terms, light always implies heat, as the heat radiation occupies a place next to the visible light in the spectrum. But heat is disadvantageous from the surgical point of view because it dries out tissue and puts the surgeon under strain.

In Martin lights, the heat content of the light generated is eliminated with special filters and by dissipation through the light body/housing. It is a good thing in this connection that the Martin lights require such a low power input.

Consider for yourself:

When a light requires a relatively high amount of energy to generate a defined light output (say, 135,000 lx), it also means that the amount of heat produced is relatively high. As a result, both the light housing and the light itself are "hotter".

Martin luminaires reflect top-quality light

The reflector is the heart of the Martin operating lights. Its specific geometry ensures
- an extremely uniform light field
- excellent depth illumination
- the elimination of any deep shadows in the operating field

A principle inspired by the sun

Just like the sun, Martin lights are mono-reflector lights. The specially designed reflector generates thousands of "light layers" that combine into a uniform light cylinder providing a light quality similar to sunlight. The result is a tube-shaped light field with absolutely uniform illumination. Within this zone, no refocusing is required even when repositioning the patient.

However, the contour shadows that give the surgeon a high-contrast, three-dimensional view of the operating field are retained.

Thanks to the multitude of projection zones, the shadows cast by instruments or the surgeon’s hands hardly affect the quality of the operating-field illumination.
Martin operating lights – in a class of their own also in terms of economic efficiency

In terms of cost-effectiveness, too, the Martin mono-reflector light is simply unbeatable. As only one light source is used, the advantages of the Martin lighting technology in terms of power consumption and lamp replacement are obvious.

Double safety thanks to two main light sources

According to Murphy's law, lamps tend to fail at the most unfavorable moment, meaning during an operation. Martin ML operating lights outwit Mr. Murphy by providing two main light sources.

If the first main lamp fails, the operating light automatically switches over to the second main lamp instantly and without any light loss. The surgeon’s work is never interrupted.

The control panel – switch to the future!

The Martin operating lights are controlled either via the control buttons located on the light housing or via the central control panel. This depends on the model.

The lights of the R-series can be equipped with an additional dimmer module for brightness control.

The central control panel allows control of the following functions:

• Switching the light on/off
• Brightness control, infinitely adjustable through an electronic system (E-series)
• Light-field control, infinitely adjustable through a servomotor (E-series)
• Pilot laser beam ON/OFF switch (option) (E-series)

Precise positioning thanks to the cardanic suspension

Martin operating lights offer a wide range of movement thanks to their cardanic suspension. Even low positions, such as those required in gynecology, are easily available.

Easy cleaning and disinfecting

The smooth surfaces of the Martin lights, especially their easy-to-clean plastic coating, allow easy and safe cleaning and disinfecting.
Today, state-of-the-art lighting technology can no longer be imagined without discharge technology. Wherever an intensive and top-quality light is needed, this technology is used. The operating room is doubtlessly a place that makes the highest demands on light power and quality. As long as incandescent lamps are used, however, high output power is unavoidably linked with intensive heat radiation.

To eliminate this problem, Martin already started to employ the advanced and cost-effective discharge technology back in 1998. Although this technology requires a higher voltage, its power requirements are extremely low. As a result of this, the discharge lamp not only lowers costs but is also characterized by its very high power efficiency. Moreover, the emitted light is considerably brighter than that of an incandescent bulb and the life of the lamp is greatly extended, as its components are almost free from wear.

**Martin ML 702 HX – high tech for the OR**

The Martin ML 702 HX operating light is the only OR light in the world that uses a discharge lamp as a light source and a halogen lamp as a back-up light. Both light sources generate the brilliant light for which Martin operating lights are known. With this new lighting technology and the worldwide successful mono-reflector principle, the ML 702 HX achieves top values in terms of light-heat separation.

The benefits for the surgeon include:

- Significantly lower heat-up of the operating field, thanks to the low infrared content of the light
- No tissue dry-up during extended operations
- Low heat load for the operating staff
- Optimum view due to maximum light yield and an extremely uniform – i.e. Gaussian – light distribution

**Martin ML 702 HX – the economically convincing alternative**

Due to its long life of more than 5,000 operating hours, coupled with a power input of just 70 W, the Martin ML 702 HX is particularly attractive in terms of low operating costs. As the lamp has a five to ten times longer life than conventional halogen lamps, servicing costs are dramatically reduced.

**Martin ML 702 HX – the lighting concept of the future**

With the Martin ML 702 HX operating light, Martin takes the lead in the operating-field illumination sector. Owing to our rich expertise, acquired over decades of experience in this field, and our readiness to give life to new ideas, we believe we can rightly say that:

The lighting concept of the future has arrived!

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**Conventional lights**

- Power input: 350 Watts
- Waste heat: 320 Watts
- 135,000 Lux

**Martin ML 702 HX**

- Power input: 70 Watts
- Waste heat: 35 Watts
- 160,000 Lux
The Martin pilot laser beam

A precise alignment of the light field is of utmost importance especially when treating deeper seated operating fields.

With the Martin laser light beam, the Martin operating lights incorporate a special feature that provides a simply ideal solution to this problem. The built-in pilot laser marks exactly the center of the light field, making it easy for the user to adjust the light with pinpoint accuracy even when aiming at small zones.

Martin MedTV Pro – the universal medical color TV system

"Camera!" is a command often echoed nowadays in operating rooms. Video cameras are used to record the full course of an operation down to the smallest detail. These videos are then used for educational and training purposes (for transmitting the sequence of images “live” into a lecture hall, for example). Such images are also made available on CDs or on the Net for the purpose of distributing and promoting a specific surgical technique.

The medical TV system Martin MedTV Pro is an excellent tool for such purposes. The camera can either be installed on a separate arm or on the light housing. All functions of the system can be conveniently accessed via remote control.

Martin device support GTP 14

In daily OR routine work, one hears again and again the following question: Where can we put all those units from the growing stock of technical systems?

The Martin device support arm offers an ideal solution for the space-saving installation of frequently used systems such as HF units, cold-light sources and the like.

The integrated power supply and height adjustability enable the task-oriented positioning of the units. Dangerously entangled cables are now a thing of the past.

The device support GTP 14 offers you a space-saving, safe and cost-effective solution for the provision of technical devices in daily OR work.
Furnishing an operating room requires detailed pre-planning. Thanks to the experience our experts have accumulated over decades, they are exactly the right partners for tackling any planning job.

Our experts will be glad to provide you with the necessary professional and decision-making support. A CD is available for you with tender texts, dimension drawings and a detailed overview of all the technical data associated with our entire range of operating lights.

Needless to say, our planning team is always ready to visit you in person should there be a need to clarify specific issues.

Ask for our planning CD 90-865-35

Ask for our planning CD 90-865-35

Te il nostro CD di progetti

Te il nostro CD di progetti
## Technical Specifications Martin Operation Theatre Lights

<table>
<thead>
<tr>
<th>Power supply Data:</th>
<th>ML 1001 E</th>
<th>ML 1001 R</th>
<th>ML 701 E</th>
<th>ML 701 R</th>
<th>ML 501 E</th>
<th>ML 501 R</th>
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<tbody>
<tr>
<td>Area of voltage adjustable</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Transformer</td>
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<td>220 VA</td>
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<td>220 VA</td>
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<td>Transformer</td>
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<td>Man. light output measured at a working distance of 1 m</td>
<td>145 kLux</td>
<td>140 kLux</td>
<td>90 kLux</td>
<td>145 kLux</td>
<td>140 kLux</td>
<td>90 kLux</td>
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<tr>
<td>Diameter</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Small illuminated field</td>
<td>350 mm</td>
<td>250 mm</td>
<td>200 mm</td>
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<tr>
<td>Large illuminated field</td>
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<td>700 mm</td>
<td>500 mm</td>
<td>600 mm</td>
<td>400 mm</td>
<td>400 mm</td>
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<td>Effective light surface</td>
<td>5132 cm²</td>
<td>2354 cm²</td>
<td>1196 cm²</td>
<td>5132 cm²</td>
<td>2354 cm²</td>
<td>1196 cm²</td>
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<tr>
<td>Light field adjustment</td>
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<td>R</td>
<td>✔</td>
<td>R</td>
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<tr>
<td>Light field by turning sterilizable handle</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>Depth illumination</td>
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<td>1040 mm</td>
<td>1380 mm</td>
<td>1230 mm</td>
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<td>Main bulb</td>
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<td>Automatic changeover to 2nd light source on bulb failure, with optical indicator</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>Average life of halogen bulb</td>
<td>600 to 1000 h*</td>
<td>600 to 1000 h*</td>
<td>600 to 1000 h*</td>
<td>600 to 1000 h*</td>
<td>600 to 1000 h*</td>
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<tr>
<td>Swivel radius of light</td>
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<td>1660 mm</td>
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<tr>
<td>Vertical adjustment of the light</td>
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<td>1190 mm</td>
<td>1150 mm</td>
<td>1190 mm</td>
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<td>Minimum height</td>
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<td>2500 mm</td>
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<td>2650 mm</td>
<td>2500 mm</td>
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<td>Controls on a control panel</td>
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<td>on cardanic suspension</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
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<tr>
<td>on light head</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>Vertical adjustment of the light</td>
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<td>1190 mm</td>
<td>1150 mm</td>
<td>1190 mm</td>
<td>1190 mm</td>
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<tr>
<td>Weights (total incl. ceiling tube and transformer)</td>
<td>115 kg</td>
<td>60 kg</td>
<td>30 kg</td>
<td>115 kg</td>
<td>60 kg</td>
<td>30 kg</td>
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<td>Martin Anti-Drift-System</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Finish</td>
<td>RAL 9002</td>
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<td>✔</td>
<td>✔</td>
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<td>✔</td>
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</tbody>
</table>

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* depending on supply voltage and activation cycles
** Standard version
*** according to DIN EN 601-2-41

 conforms with 93/42/EEC

1 single light
2 single light complete with ceiling tube 200 mm