

Operating Lights



marLux® with centriXbeam®
LIGHT OF THE NEXT GENERATION

KLS martin
GROUP



Ideal by itself, perfect in combination – KLS Martin is the only source where you can get the X8 and X6 combination lights, both with gas discharge technology.

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marLux® – the clear light for cool heads.

It should be bright, but not hot. High definition yes, but no shadows please. Focusing on the one hand, “wrapping“ objects in light on the other hand. The demands made on the “ideal” operating light are not only stringent, but contradictory as well. To satisfy them, the best available know-how is required – and decades of experience. Exactly what KLS Martin brings into play. We have set standards with operating lights using advanced gas discharge technology. We now introduce the light of the next generation: marLux®.



Clear advantages.
For clear productivity gains.

- **Quasi-daylight surgical field illumination** – with a constant color temperature guaranteed.
- **Minimal heat development** – the cool light prevents tissue desiccation.
- **Much higher luminous efficiency**, compared with halogen light – thanks to long-life discharge lamps.
- **Color fidelity** – for safe identification of tissue changes.
- **High color temperature** – for more power of concentration. It is a fact.

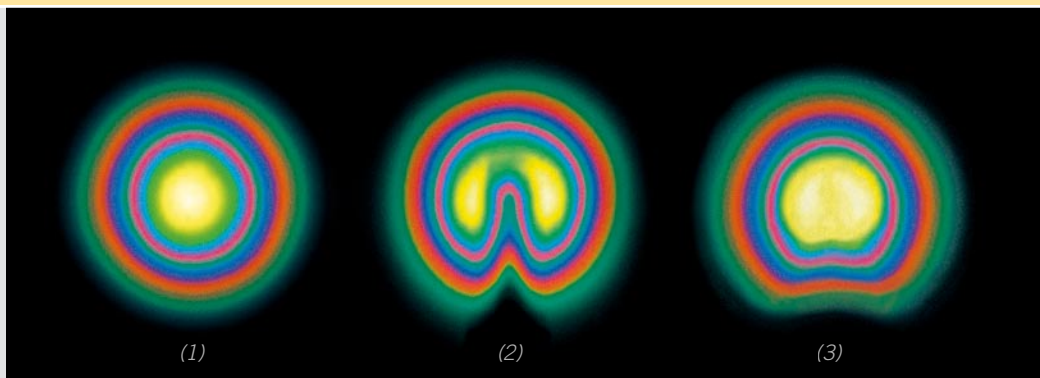
A wide range.
The marLux® product line.

All models at a glance:

- **marLux® X8** – operating light with gas discharge light and centriXbeam® or, alternatively, optical dimming.
- **marLux® X6 centriXbeam®** – the only OR satellite light with gas discharge technology. Therefore, KLS Martin is currently the only manufacturer offering a large and a small gas discharge light in combination.
- **marLux® H8** – operating light with IRC halogen lamps and centriXbeam®.
- **marLux® H6** – operating light with IRC halogen lamps and centriXbeam®.
- **marLux® H5 PLUS** and **H5** – with time-tested halogen lamps.

centriXbeam® and the 540 facets of light.

No operation is identical, and light is not always the same, either. Not at the start of an intervention, and even less so as it proceeds, when the illumination of deeper tissue structures is of particular importance. Every surgeon routinely needs light of different quality during an operation, switching between higher and lower intensity, high-contrast and shadow-reducing illumination of the surgical field. Thanks to their centriXbeam® offering variable deep-cavity illumination, marLux® operating lights provide excellent support and flexibility in any surgical situation.



marLux® under test (isointensity lines): (1) No hindrance – uniform light field. (2) Obstacle, with mid-reflector centriXbeam® activated – strong cast shadow. (3) Obstacle, with mid-reflector deactivated – cast shadow significantly reduced.

The monoreflector.
With central reflector on demand.

With marLux®, KLS Martin has brought a totally new dimension to the classical monoreflector lighting concept. The polyspherical monoreflector incorporates a central reflector that can be switched on and off as needed. This means:

- **Altogether 540 reflectors** optimally arranged on the basis of computer calculations, channeling the light exactly to the surgical field – the place where it is actually needed.
- **Uniform, vertical light tube** with absolutely homogeneous light distribution (see picture on the right).
- **No refocusing required** after light adjustments or patient repositioning.
- **Shadowless illumination** – the light is directed around the surgeon.

More flexibility.
With centriXbeam®.

Additionally, the X8/X6 and H8/H6 marLux® operating lights offer you a completely novel technology: centriXbeam®. It allows you to focus the light exactly on the tissue region where it is most needed. This gives you, in fact, two options:

- **Improved depth illumination:** The light provided by the central reflector is channeled into the deeper regions of the surgical field. This gives the surgeon a better view of the deeper structures (see photo on the right).
- **High-contrast illumination:** By simply switching off the central reflector, it is possible to reduce cast shadows significantly (see items (2) and (3) above).



*centriXbeam® for deep cavity illumination:
mid-reflector off (left) and on (right). Significantly
more light when the central reflector is on.*



sensoGrip, substiLite, backLite and the unfailing feel for light.

Nothing could be more important than safety. marLux® gives you just that. With a well-thought-out set of features that ensures optimal lighting conditions at any time. Through flexible adjustment of the illumination level or the size of the light field, for example. Through easy lamp replacement with a single movement of the hand – no tools required. Through the additional halogen lamp that guarantees immediate as well as reserve light. And last but not least, the LED light that comes on automatically to provide just the right background lighting during endoscopic interventions.



backLite – for endoscopic interventions



sensoGrip – the multifunction tool



substiLite – the light source that is replaced within seconds

Everything is at your fingertips.
sensoGrip.

This handle is much more than it looks like. It takes just a “double click” to turn the plain, sterilizable central handle sleeve into a multifunctional instrument:

- **Normal operation** – the handle allows you to adjust the light head in any direction.
- **Turn the handle** clock- or counterclockwise for flexible adjustment of the light field diameter, matching it perfectly to the size of the surgical site.
- **Pull or push** – for continuous illuminance adjustment without influencing effect on color rendition or color temperature or – depending on the model – for activation of centriXbeam®.
- **Ideal for integration** – the surgiCam camera system inside the sensoGrip handle. Simply done by the light head.

The light in the background.
backLite.

During endoscopic interventions, the OR illumination should be reduced to a minimum in order to prevent glare. Therefore, marLux® is optionally available with backLite:

- **LED module** – integrated into the articulated arm system.
- **Background light** – indirect lighting, directed upwards.
- **Automatic activation** – the light comes on as soon as the ambient illumination level drops below a predefined threshold.
- **High-contrast viewing conditions** – ideal for the surgeon and surgical team members tracking the intervention via the monitor.



Playing it safe.
Immediate plus backup light.

Either/or, as well as both – if one lamp fails,
the other one takes over.

- **Powerful standby lamp** – a safety feature of any marLux® light.
- **100% light** – in the start-up phase and during short-term interruptions of currency.
- **Automatic positioning** – the currently active bulb is automatically moved into the optical center of the reflector system.

Replacement made easy.
Thanks to substiLite.

What happens if the light source has
become defective? Don't panic – the
bulb can be changed easily with a few
movements of the hand:

- **Fast** – you just replace the light source.
- **Easy** – no tools needed.
- **Effective** – no additional servicing required.
- **Efficient** – saves you time and money.

surgiCam for digital documentation.

Nowadays, it is even no longer necessary for the surgeon to be “on-site” for giving the right directions. But wherever he or she is, a clear view of things is indispensable. With the focus on the surgical site, of course. This is exactly what KLS Martin’s digital camera system has been designed for: teleconsulting live, via camera. At the same time, the recorded interventions can be used as illustration material for training purposes as well as for comprehensive patient documentation.



The separate surgiCam control unit



surgiCam operation via the operating light’s “double-function”, integrated control panel

360-degree focus.
300x zoom.

Whatever its position – surgiCam delivers a detailed, vertical, laterally correct image by a mere touch of the button:

- **Rotatable** – the whole camera can be completely rotated around its optical axis if required.
- **Suspension** – the entire arm system is perfectly easy to handle. No stops in the tracking arm and cardanic joints.
- **Powerful** – the 300x zoom.
- **Perfect control** – via the monitor, covering every detail to give you the total picture.

Modular design.
For individual requirements.

surgiCam is a total system from a single source, allowing modular, flexible configuration in accordance with personal needs:

- **The economy version** can be conveniently controlled via the operating light’s control panel.
- **The basic version** comes with a separate control unit offering additional options.
- **The advanced version** offers everything needed for connecting the system to any commonly used network, including digital compression in the MPEG-4 format.
- **Installation** – surgiCam can be optionally integrated into the light’s central handle or mounted on an arm of its own.



Technical Specifications



	X8	X6	H8	H6	H5 PLUS	H5
Max. illuminance at a distance of 1 m (in lux)	160,000	150,000	155,000	145,000	130,000	85,000
Light field diameter, d10 (in cm)	20 – 32	19 – 30	17 – 30	16 – 29	15 – 28	16 – 26
Color temperature in Kelvin (K)	4,300	4,300	4,300	4,300	4,300	4,300
Color rendering index CRI	95	95	93	93	93	93
Luminous efficacy in lumen per watt (lm/W)	291	291	285	285	285	285
Average radiant energy: total radiant power/illuminance (mW/m ² x lx)	3.4	3.4	3.5	3.5	3.5	3.5
Working range (illumination depth) without refocusing, L1/L2 (in cm)	45/90	45/65	45/90	45/65	45/65	45/65
Illuminance guaranteed by standby lamp (in %)	100%	100%	100%	100%	100%	100%
Automatic changeover to standby lamp (2nd light source)	yes	yes	yes	yes	yes	yes
Nominal output, light source 1 (in W)	70	70	150 IRC*	150 IRC*	150	120
Nominal output, light source 2 (in W)	150 IRC*	150 IRC*	150 IRC*	150 IRC*	150	120
Lamp life, discharge/halogen lamp (in h)	5,000/600 – 1,000	5,000/600 – 1,000	600 – 1,000	600 – 1,000	600 – 1,000	600 – 1,000
Light emission surface (in cm ²)	max. 3512	1963	max. 3512	1963	1963	1963
Light head diameter (in cm)	82	65	82	65	65	65
Shadow dilution with tube and 1 mask	57%	37%	57%	32%	32%	32%
Shadow dilution with tube and 2 masks	51%	41%	51%	41%	41%	41%
Handling	sterile/ non-sterile	sterile/ non-sterile	sterile/ non-sterile	sterile/ non-sterile	sterile/ non-sterile	sterile/ non-sterile
Continuously adjustable light field diameter	yes	yes	yes	yes	yes	yes
Continuously adjustable illuminance	yes	yes	yes	yes	yes (optional)	yes (optional)



Wide range of products, lots of options – marLux® is available as a single light, multi-light set-up, wall-mounted light or mobile light.

Item No.	Popular Configurations	Item No.	Accessories
89-008-09	marLux® X8 centriXbeam®	89-902-24	Power module for all marLux® lights
89-008-07	marLux® X8 Vario	89-900-00	Emergency power changeover relay for marLux® lights
89-006-09	marLux® X6 centriXbeam®	89-620-00	Ceiling anchor plate
89-006-07	marLux® H6 Vario	89-960-XX	Intermediate ceiling construction (in 100-mm steps)
89-008-05	marLux® H8 centriXbeam®	89-907-02	Spare lamp set for X8 and X6
89-006-05	marLux® H6 centriXbeam®	89-907-01	Spare lamp set for H8 and H6
89-005-25	marLux® H5 PLUS	89-907-04	Spare lamp set for H5
89-005-15	marLux® H5	89-907-05	Spare lamp set for H5 PLUS
89-086-09	marLux® combination X8 centriXbeam® / X6 centriXbeam®	89-930-00	Sterilizable handle (standard)
89-086-05	marLux® combination H8 centriXbeam® / H6 centriXbeam®	89-930-02	Sterilizable handle for pilot laser
89-066-09	marLux® combination X6 centriXbeam® / X6 centriXbeam®	89-930-04	Sterilizable handle for surgiCam camera system
89-066-07	marLux® combination X6 Vario / X6 Vario	89-940-10	Handle unit for sterile sleeves
89-066-05	marLux® combination H6 centriXbeam® / H6 centriXbeam®	89-940-20	Sterile sleeves for 89-940-10, 50 pieces
89-055-25	marLux® combination H5 PLUS / H5 PLUS		
89-866-07	marLux® combination Vario X8 / X6 / X6 Vario		
89-866-09	marLux® combination centriXbeam® X8 / X6 / X6		

Vario = Optical dimming without color shifts.

- Options:
- Pilot laser for all marLux® models
 - centriXbeam® for X8/X6 and H8/H6 models
 - surgiCam modular digital camera system integrated in all light models or with separate suspension arm.

- H5 PLUS and H5 with cardanic suspension system
- LC versions for low ceilings
- backLite background lighting for endoscopy
- Wall-mounted switch box (surface- or flush-type) with wall-mounted control panel
- Electronic dimming for H5 PLUS and H5 models

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