

Light without Compromise

CHROMOPHARE® F Generation
Surgical Lights

BERCHTOLD



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Pioneers in Lighting

In December 1967, Dr. Christiaan Barnard personally chose the CHROMOPHARE® lighting system for the very first heart transplant surgery. In the years since this remarkable moment in medical history, BERCHTOLD has become expert at designing and equipping complex life-saving environments that optimize patient care.

BERCHTOLD's latest innovation is the CHROMOPHARE F Generation, which combines the benefits of LED technology with precisely positioned reflectors to create the optimal surgical lighting experience. The system provides the best surgical environment for your team and overcomes the two main shortcomings of array-based LED lighting: shadow control and depth of field.

The interaction between technology and the OR team must be reliable, smooth and work without any time delays. Therefore, BERCHTOLD designed the control of its OR lights to be as simple as possible and created interfaces for other system connections. The F 628 and F 528 models offer the ideal work environment for surgical teams.



CHROMOPHARE® F Generation



Light without Compromise

Introducing CHROMOPHARE F Generation Surgical Lights

Now you can provide the best surgical environment for your team and patients with innovative technology from BERCHTOLD. Our optics research and development team has overcome the two main shortcomings of array-based LED lighting: shadow control and depth of field.

Superior Technology

The new CHROMOPHARE F Generation patented design combines the benefits of LED technology with precisely positioned reflectors to create the optimal surgical lighting experience.

- Patented light engine design utilizes 104 LEDs to deliver 650 overlapping beams of light (F628)
- Superior shadow control and depth of field
- Homogenous and uniform column of light
- 160,000 lux (F628)
- Better tissue discrimination with a CRI of 96
- Tight, focused spot for deep cavity penetration when needed
- Four color temperature settings: 3600K, 4000K, 4500K, 5000K to accommodate surgeon preference.





Improved Ease of Use

Our CHROMOPHARE® F Generation surgical lights offer new and improved maneuverability and practicality. Easy to set where you need them, and even easier to move out of the way when you don't.

- Limitless rotation at light head and spring arm eliminates light head lockup
- Lightweight design minimizes opportunity for drift
- Interactive touch panel allows intuitive control
- Durable, medical grade safety glass does not discolor over time
- Easy-to-clean, ergonomic design
- Endolite available in green for endoscopic applications or white for ambient lighting
- Screwless light head for more hygienic environment/design



Lifetime Value

The Chromophare F Generation features a scalable and customizable solution to meet your specific needs.

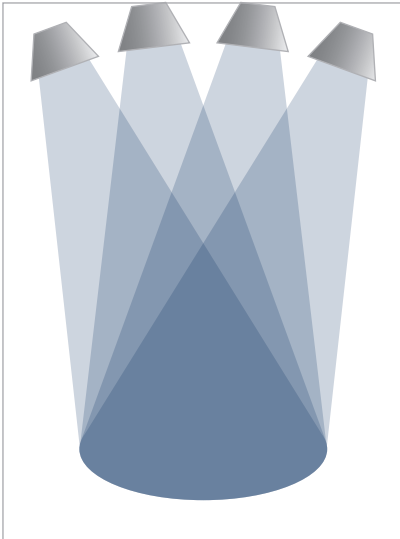
- Low energy consumption
- Up to 40,000 hours of service life
- Future proof suspension for easy upgradeability
- Maximum configurability
- Light and boom combinations available
- Camera-ready light heads



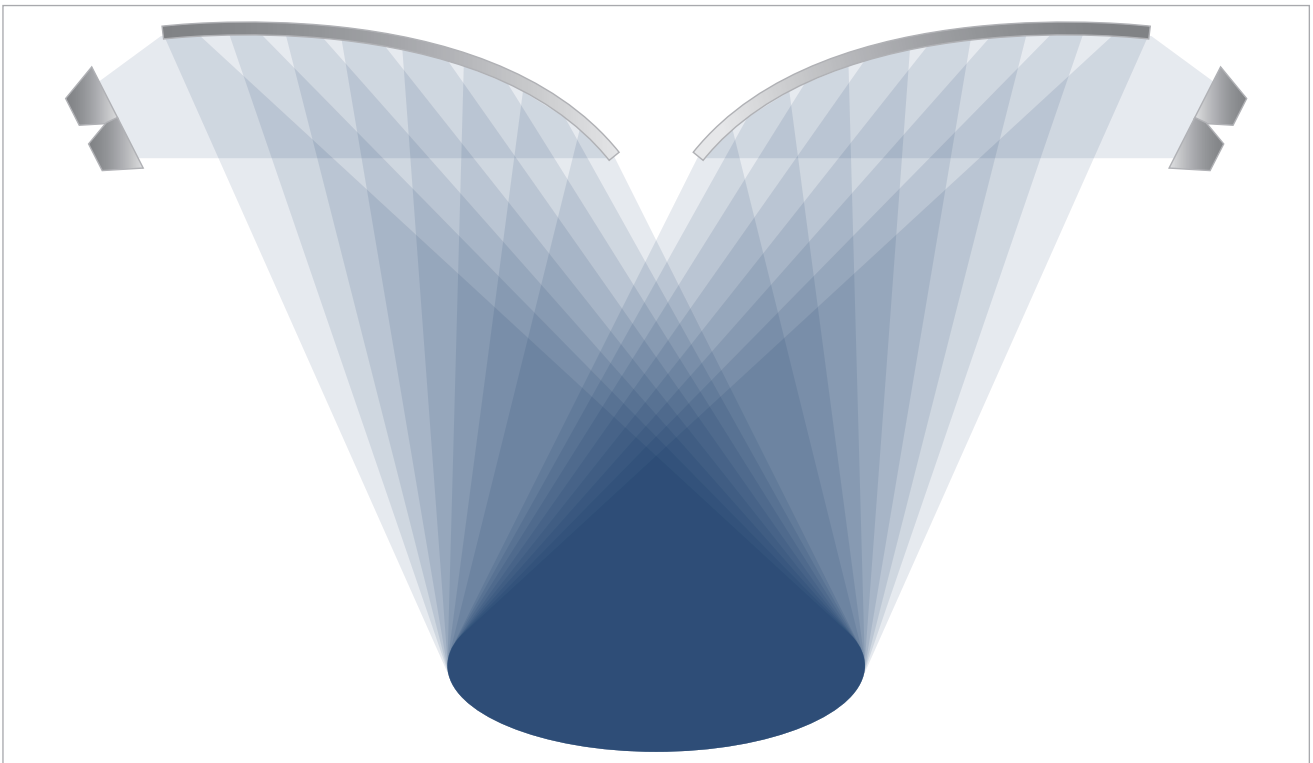
First class surgical field lighting



Homogenous Column of Light with Reflector Technology



Conventional array based LED lighting



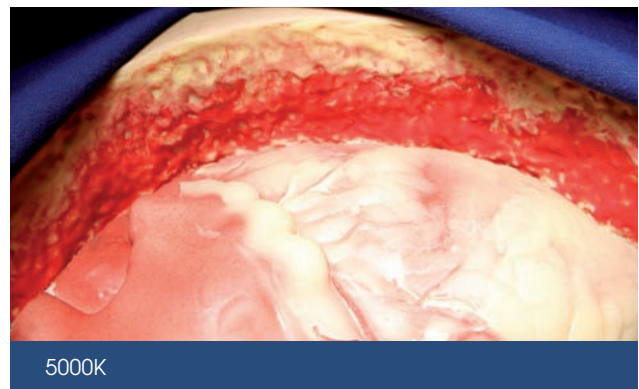
The Chromophare® F Generation utilizes reflector technology to create an intense light column with over 650 overlapping light beams, which provides excellent shadow control and depth of field.

Improved ease of use

Four Color Temperature Options

All of us perceive light in slightly different ways. Surgeons are no exception and demand the flexibility of choice. Multiple color temperatures options grant them exactly that. Whether a clinical procedure calls for a warmer, yellowish light or that which mimics noontime sun, the F Generation accommodates. The surgeon chooses the color temperature according to individual requirements and preferences, while maintaining 160K lux.

- **3600K**
 - Diminishes reflection and glare from surgical instruments
 - Emulates historical surgical lighting technology
- **4000K/4500K**
 - Neutral setting that easily differentiates the various colors in the color spectrum
 - May lead to visibility of perfusion
- **5000K**
 - Pairs easily with head lamps
 - May be effective for deeper lying tissues



Clearly distinguishes tissue structures based on settings of 3,600-5,000K.

Multiple Lighting Options

EndoLite® for indirect environment lighting

Improves the work conditions for surgeons for endoscopy procedures in darkened rooms. EndoLite is integrated into the suspension and is purposed for either green endoscopic applications or white ambient lighting.

GuideLite™ for light dimming

The normal light beam of the OR light can be dimmed by the push of a button to five or ten percent light intensity. The light pointed down illuminates the OR field or the instrument table, in order to safely manipulate endoscopy instruments.



EndoLite increases the visual comfort for endoscopy procedures.



Use the GuideLite for secure manipulation of endoscopy instruments.

Modern operating concept

Intuitive, Sterile and Without Limits

Interactive touch panel for visual operation

For an optimum interaction between light and operator, the touch screen displays all functions clearly with integrated visual feedback.

The interactive touch-panel can be fastened to the wall and/or the light suspension, which allows the following functions to be controlled quickly and intuitively:

- Switching on and off
- Light intensity
- Light field size
- Color Select
- EndoLite®
- Guidelite™

Synchronization for higher comfort

If several light heads are used, then these can be controlled together from any light head, saving time.

Integrated light handle controls with audible feedback

The F Generation enables easy, sterile positioning of lighting during surgical procedures. Surgeons can easily switch between large or small light fields as desired. As the surgeon adjusts the handle, audible beeps sound to indicate a tighter or more open spot. Integrated control from the light handle eliminates unnecessary handling by non-sterile OR personnel.



New spaces to move

The limitless joint allows unrestricted rotation of the light head around its own axis and offers greater freedom of movement in rooms with low ceilings. The new and improved suspension offers unrestricted positioning.

Superior positioning

The surgical team positions the light inside and outside of the sterile surgery area using a rail that goes around the light. This allows unlimited access to the OR lights from different locations and ensures efficient workflows. The rail is designed for ergonomic gripping and easy cleaning.

Optimum environmental conditions

The F 628 & F 528 are manufactured from robust and resistant materials (meeting protection type IP 53). The F Generation is a hygienic option in an environment that demands just that.



Ergonomic and Hygienic Design

The CHROMOPHARE® F Generation fulfills the highest demands for design and functionality. Closed forms with smooth, seamless surfaces simplify cleaning and maintenance. Flow turbulences are specifically reduced according to SWKI Class 5 and DIN 1946-4. Medical grade safety glass is used as the light emission surface, making it easier to clean and less sensitive to harsh cleaning agents in comparison to plastic. Furthermore, the glass lens is an anti-reflective, more durable alternative to a plastic lens.



Choose your own configuration

CHROMOPHARE® F 628

Main light with 160,000 Lux intensity and 29.53 inch diameter.

Seamless dimming from 10-100%.

Provides superior shadow control and depth of field for today's intense open cases.



CHROMOPHARE F 528

Satellite light with 125,000 Lux intensity and 25.59 inch diameter.

Seamless dimming from 10-100%.

Additional applications include trauma, ER, cath lab or as a satellite light positioned either as a second or third light.





Mobile surgical lighting

As a pioneer in OR field lighting, BERCHTOLD is the first to offer a mobile surgical light with 160,000 Lux light intensity and color temperature selection.

Highlights at a glance:

- High degree of mobility
- Large light emission surface by utilizing the F 628 light head
- New, ergonomic stand design
- Innovative castors with integrated kick pedal brakes for easy release
- Optional battery power supply lasting up to six hours



Multiple mounting options

The Right System for Every Need

CHROMOPHARE® OR lights feature a scalable and customizable solution to meet your specific needs.

The F Generation can be mounted on one of two distinct suspensions. The ceiling height of a given OR often dictates a classic suspension or a flat suspension. Either way, the F Generation introduces new and improved options for both methods, giving hospitals an extremely maneuverable light that is there when you need it, and easy to get out of the way when you don't.

Classic Suspension Ideal for Standard OR Ceiling Heights



F 528 / F 628



Monitor / F 528 / F 628 with camera

Flat Suspension Ideal for Low Ceiling Heights



Monitor / F 528 with camera / F 628



Wall light F 528

Technical data

| | F 628 | F 528 |
|---|--|--|
| Light head diameter | 29.53 inches | 25.59 inches |
| Light intensity | 160,000 lx | 125,000 lx |
| Brightness control | 10-100% | 10-100% |
| Light field diameter | 6.3-11.42 inches | 7.48-11.81 inches |
| Depth of Illumination (L1+L2) | 31.49-47.24 inches | 35.43-59.05 inches |
| Color rendering index (Ra) | 96 | 96 |
| Color temperature (Standard) | 4,500 K | 4,500 K |
| Color temperature options | 3,600-5,000 K | 3,600-5,000 K |
| Number of LEDs | 104 | 88 |
| LED service life | up to 40,000 h | up to 40,000 h |
| Total radiant power at max. light intensity | 594 W/m ² | 460 W/m ² |
| Power consumption light head | 95 W 24-28 V DC | 85 W 24-28 V DC |
| Electricity | 100/120/127 V(AC) 220/230/240 V(AC) | 100/120/127 V(AC) 220/230/240 V(AC) |
| Radiant energy | 3.7 mW/m ² lx | 3.7 mW/m ² lx |
| Temperature increase at head area | < 2°C | < 2°C |
| Degree of protection according to DIN 1946 | 5 | 5 |
| Mounting options | Ceiling, Wall, Mobil | Ceiling, Wall, Mobil |
| Certificates | CE, UL | CE, UL |

Measurements according to EN 60 601-2-41; All light technical data max. +/- 10% tolerance

| Equipment | Ceiling | Wall | Mobile |
|---------------------------------|----------|----------|----------|
| Rotation | 360° | 360° | 360° |
| Full-circumference rail | 360° | 360° | 360° |
| Sterilizable handle | Standard | Standard | Standard |
| Interactive touch panel control | Optional | Optional | Optional |
| Keypad control at wall | Standard | Standard | n/a |
| Keypad control at light head | Optional | Optional | Standard |
| EndoLite® | Optional | - | - |
| GuideLite™ | Standard | Standard | Standard |
| Classic suspension | Optional | Optional | - |
| Flat suspension | Optional | Optional | Standard |
| Synchronization | Optional | - | - |
| RS232 | Optional | - | - |

* Only in combination with the keypad control panel

Everything in view

ChromoView™ Monitor Suspension Systems

ChromoView monitor suspension systems enable flexible medical monitor positioning

- Compatible with all monitor sizes up to 42" screen diagonal
- Monitor support arms for larger screen diagonals available on request
- Point of rotation at the center of gravity provides feather-light positioning
- Wide cable opening for multiple video signal cables
- Mountings of one or two flat-screen monitors with wide swivel and tilt ranges
- Double monitor support available with either freely movable or fixed monitor position
- Weight range spanning from the standard 22 lbs. (10 kg.) to 57 lbs. (26 kg.)

The ChromoView line offers a wide array of monitor mounting solutions, including hybrid room configurations. Our highly skilled consultants will work with customers to give them a solution tailored to their specific environments.



Highest imaging capacity

ChromoVision® HD Wireless Solutions

This is the first wireless in-light camera for the OR to offer native HD signal quality. Unlike conventional light suspensions which are prone to signal interruptions, BERCHTOLD'S true HD Wireless system produces continual 1080i image quality. From the source, the 2-megapixel camera, to the destination, the digital system signal output, the data stream is never degraded or converted, providing an image that is consistent with the best HD endoscopic cameras.

Reliable Wireless Technology

- Uninterrupted native 1080i Full HD resolution
- Secure wireless signal transmission
- 256-bit encryption
- Intuitive user interface with optional IR remote control
- Compatible with all CHROMOPHARE® LED surgical lights

CHROMOPHARE Compatible

BERCHTOLD'S HD Wireless system is compatible with any CHROMOPHARE LED light. Upgrading to wireless from your existing system is plug and play. Simply attach the wireless camera optics to the light head, then attach the control box to your in-room routing system and you're ready to start seeing and recording the highest quality native 1080 images and video.



| True HD Wireless Specifications | |
|--|--|
| Resolution | Native 1080i |
| Lens | 10X Optical Zoom (.20-2.00 inches) |
| Signal to Noise Ratio | >50 DB |
| Sensor | 1/3" CMOS, 2 megapixels |
| Transmission from Camera to Controller | Wireless, N Band (WLAN IEEE802.11n, 5ghz., MPEG-4 encoded) |
| | Camera: 24VDC from light power supply, Controller: 100-240 VAC, 30 VA, 50/60Hz |
| White Balance | 3000-7500k |
| Image Rotation | 360 degrees |
| Focus | Auto or Manual Adjustment |
| Control Unit Dimensions | 17.4 x 3.4 x 13.5 inch (rack mount compatible) |
| Standard Outputs | DVI x 1. HD-SDI x 2 |
| Remote Protocol | RS-232C/9600 baud 8N1 |
| Electrical | 100/120/127v AC |

SUPERSUITE™ OR solutions

We're Here for You During the Entire Life Cycle of Our Products

BERCHTOLD is expert at designing and equipping complex clinical environments that enable the staff to focus on patient care.

Our dedicated consultants, utilizing our SUPERSUITE methodology and support team, lead all stakeholders through a defined process from concept to user acceptance that consistently produces highly efficient, customized clinical environments.

BERCHTOLD supports clinicians, architects and industry partners by seeking to understand unmet needs and facilitating a cross functional team to tailor the finest details of the room design, equipment location, product configuration and data support to maximize the clinical vision for each and every room. Our goal is to achieve high levels of customer satisfaction throughout the project.

Planning & Design

We plan and design to the specific needs of your operating room with our ByDesign™ 3D software, including:

- Support team that reviews all design recommendations and provides one point of contact for architects and equipment planners
- Workflow analysis including detailed space assessment
- 2D room drawings
- 3D visualization

Fully Customized OR Solutions:

- 90 years of healthcare experience
- Insights from installations at many of the top US hospitals
- German-engineered, leading technology suite of products

- Ergonomically & hygienically designed
- Offering turnkey oversight and management of the entire project

Installation & Initial Set-up

- On-site project management
- On-site training of your staff

After Sales Support

- Quick response times
- Qualified support using specially trained personnel
- Spare parts service
- Service hotline: 800-243-5135, option 2



BERCHTOLD



For over 90 years, BERCHTOLD has been a world leader in the design and manufacture of quality medical equipment. With our focus on improving patient outcomes, we deliver best-in-class products, experienced planning and project management and service with a personal touch. We measure our success by the quality of our customer and employee relationships.

Our products and services include:

- CHROMOPHARE® surgical and examination lights
- ChromoVision® video and camera systems
- ChromoView™ monitor arms
- TELETOM® equipment management systems
- OPERON® surgical tables including a full range of accessories
- SUPERSUITE® custom surgical environments
- ByDesign™ surgical room design software
- Design, consulting, project management and customer support
- Factory trained service and installation support
- IntegraMount™ construction mounting solution

We invite your inquiry and the next opportunity to assist in the planning, design and installation of your next clinical environment.



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