SKYLUX® YAMADA SHADOWLESS LAMP CO.,LTD.

https://www.skylux.co.jp/english

Branch office Sendai, Northern Kanto, Kanto, Nagoya, Osaka, Hiroshima, Fukuoka
Factory Saitama Factory
Main office 2-3-16 Nishikanda, Chiyoda-ku, Tokyo 101-0065 Japan
TEL. +81-3-5212-6021 FAX. +81-3-5212-6022

2024.05.ecell

SKYLUX

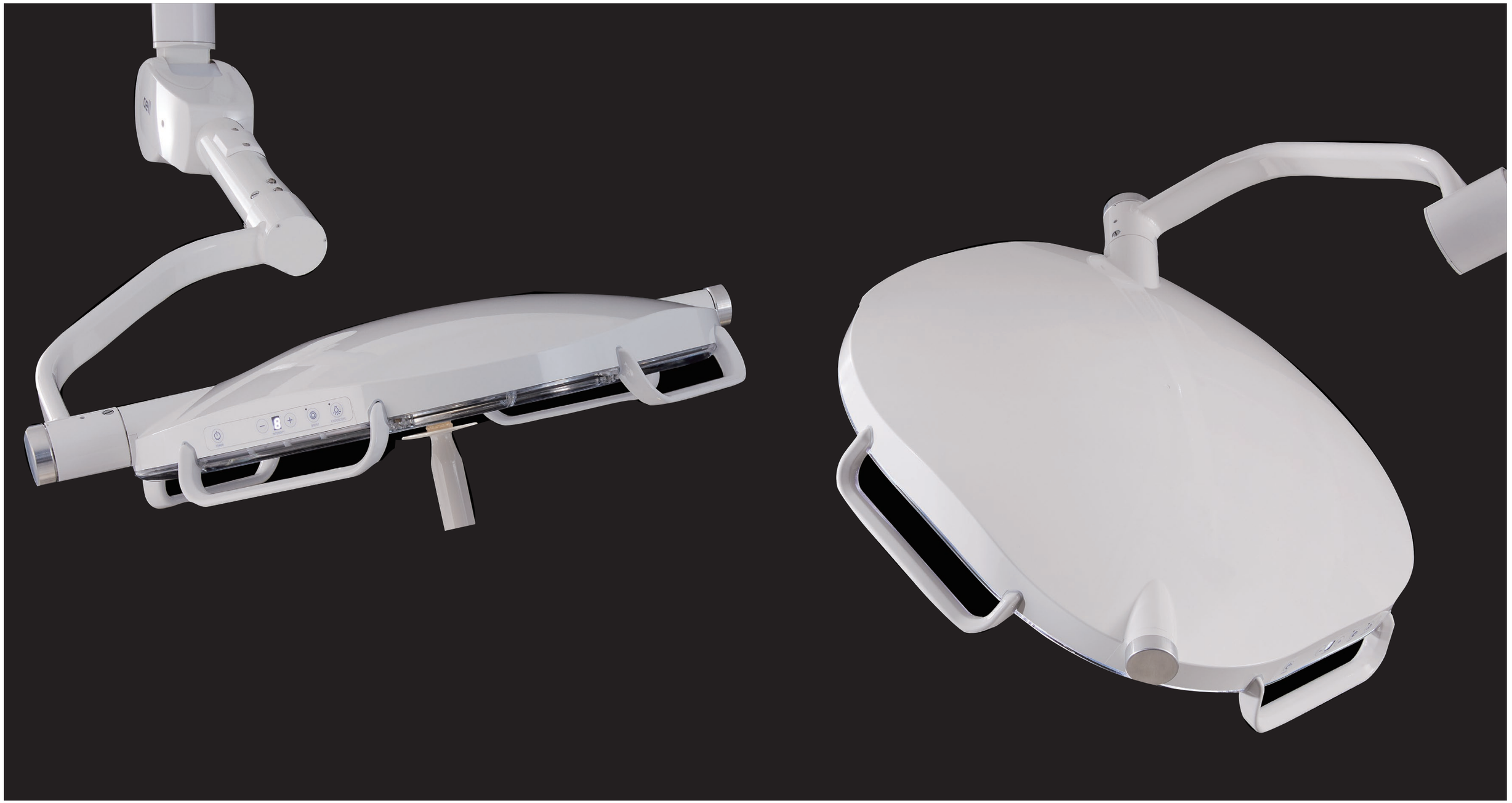
ecell

Providing an
Optimal Light Environment
to Every Medical Practice

cell Operation light

Protecting healthcare professionals and patients with gentle light

Equipped with high color rendering LEDs that approach the properties of natural light.

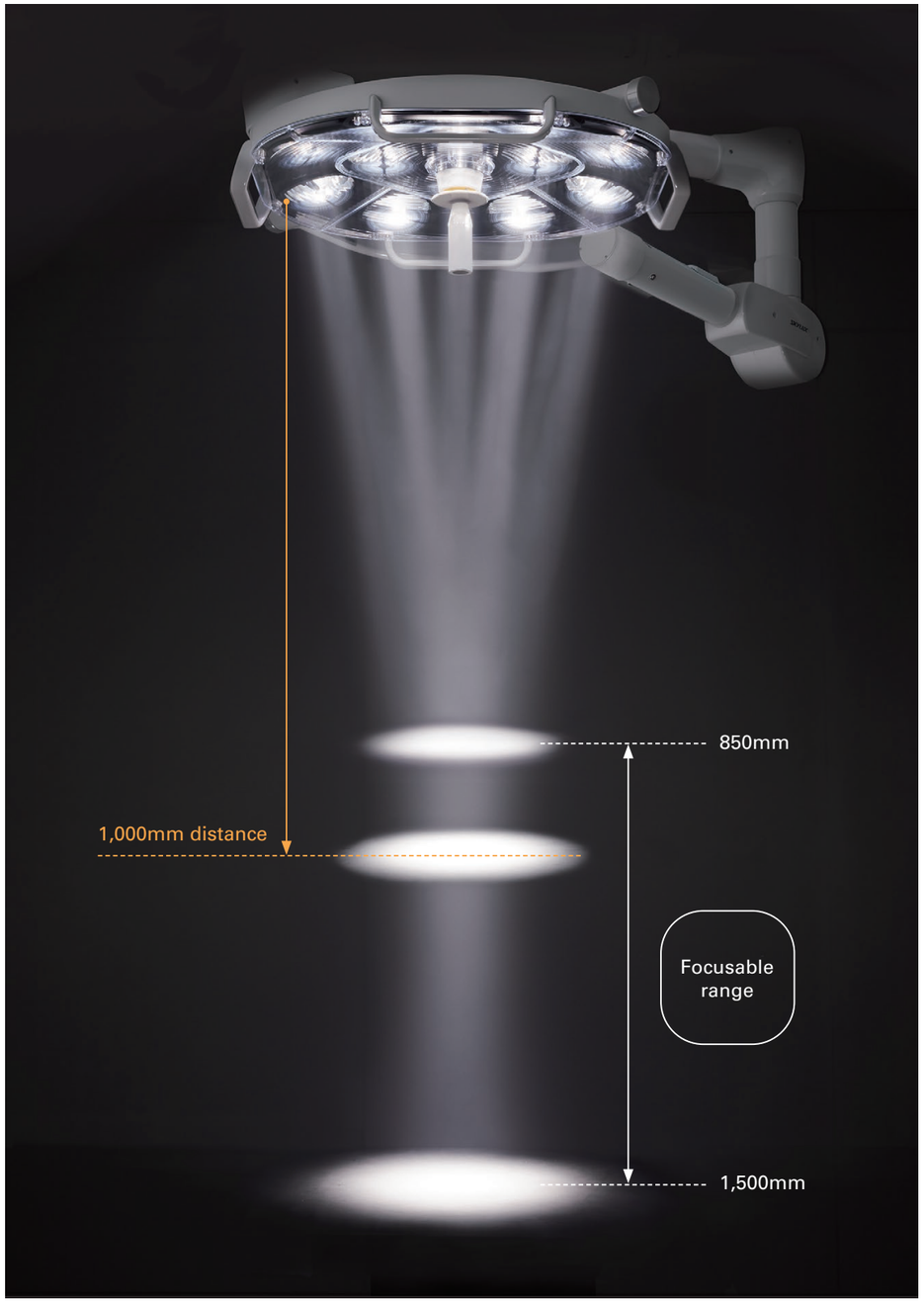


Functional and user-friendly design

Floating design to alleviate the tension of surgery.
Curved design gives patients a sense of security.

Focus function

By adjusting the sterilizable center handle (for the physician) or the side focus knob (for the support staff), users can adjust the illumination based on the distance to the surgical site.



Hand grip

Hand grip on the side of the lighthead used in adjusting the position of the light.
Its shape is easy to grip and use, helping staffs moving during operation.

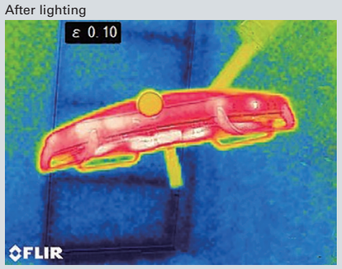
Heat dissipation via hand grip

Excess heat, which can affect internal electronics, is released through the aluminum hand grip.

*It does not become hot.

Before lighting

After lighting



ENDOSCOPE mode

A touch of a button dims light intensity to 1%. Functions as an auxiliary light during endoscopic surgery.

Lighthead operation control switch

Operation control switch on the side of lighthead. Turn the power on or off, adjust the brightness (from 1 to 8), or turn on or off BOOST mode and ENDOSCOPE mode.

Characteristics of cell

Specialty for Light and Color : We are using suitable LEDs for medical

"Ultra-high color rendering LEDs" achieve reliable visibility and distinguishability

We used "Ultra-high color rendering LEDs" to achieve a high index of 95 for the R9 value. This corresponds to red (blood) in the special color rendering index (Ri), an index that includes colors close to the human body. This makes the colors of blood, organs, and tissue in the surgical field more visible and distinguishable, helping improve the prceision of operations.

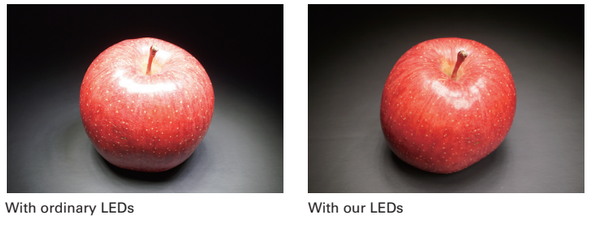
Average color rendering index (No.1 to 8)

Special color rendering index (No.9 to 15)

Light which brings out an object's true color and quality

Compared to ordinary LEDs, our LEDs have a spectrum closer to that of sunlight, and can bring out an object's true color and quality. Human eyes see the light reflected off an object to recognize that object. Our LEDs can express that reflection more accurately and illuminate more true.

Comparison of ordinary and our LEDs

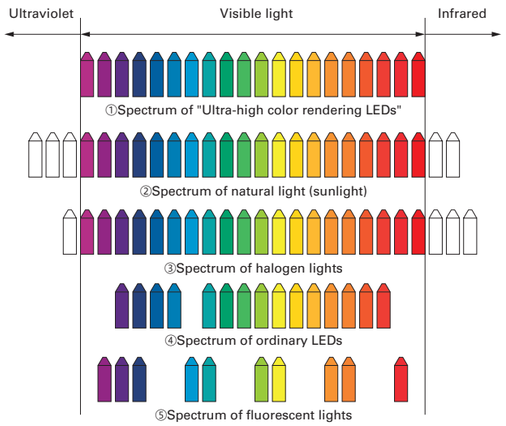


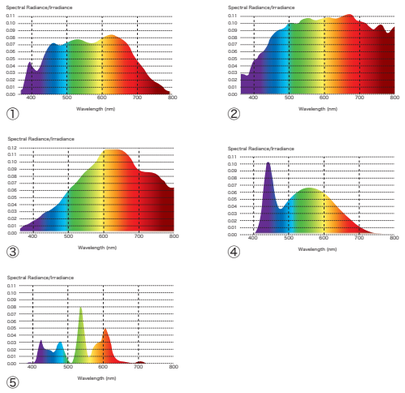
With ordinary LEDs　　With our LEDs

Spectral wavelength range close to sunlight

For example, you can't draw a colorful picture with one or two colored crayons. If you don't have a light orange crayon, you have to use the next closest color, yellow, and the picture ends up different from what you imagined. In the same way, by illuminating light with a spectrum that covers all wavelengths onto an object, that object's true, natural colors become visible.

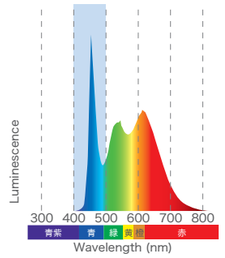
If we imagine the spectrum of light as crayons...



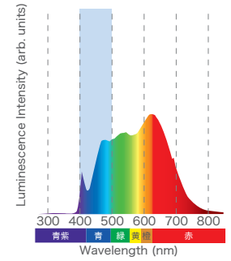


Light that is gentle on your eyes with reduced risk of blue light

Doctors who continue to look at a surgical site under an abnormally bright light experience tired eyes due to blue light. Our LEDs reduce the blue light risk and achieve a spctrum that does not strain the eyes.



Spectrum of ordinary white LEDs



Spectrum of our LEDs (cell)

Low-glare light

The unique optical design prevents glare when illuminated on the operation site. This significantly reduces eye strain and discomfort for doctors, who must continue to look at the operation site over a long period of time.

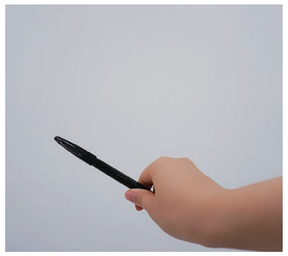
Ordinary LEDs : Light with "glare"

cell : Light with reduced "glare"

Light with "zero flickering"

Commonly-used lights adjust their brightness by repeatedly turning on and off in an extremely short interval (AC lighting, PWM control). However, the minute "flickering" strains your eyes, even if you're not aware of it. This also applies to the light environment of the operation room. With our DC lighting, the light can be constantly "ON", providing a light that does not flicker and is easy on your eyes.

Afterimage occurs easily



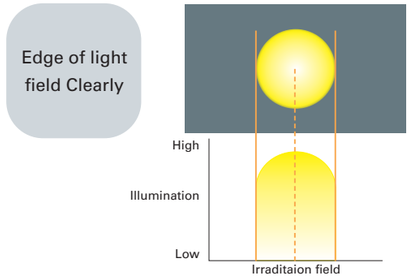
Afterimage is prevented

Characteristics of cell

Specialty for Light, Comfortable for Eyes

Illuminating with soft edge of lgith field

A strong light gives a surgeon's eyes stress due to a brightness when a surgical field is illuminated by operation light. This strong light makes a contrast for an edge of light fields (see right comparison).



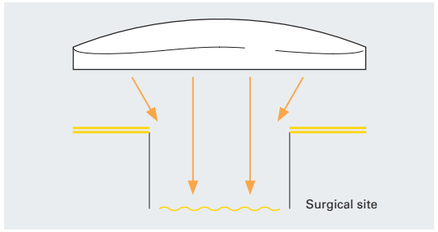
Turning on/off a light gradually

Sudden lighting makes eye blind. However, Gentle lighting on/off system of cell reduces eye strain.

Specialty for illuminace and safety

Boost function illuminates a cavity of body deeply

Press the BOOST button to turn only the center 4 units to maximum brightness. You can use this if you want to illuminate light deep into the surgical site.



*This illustration is just an image

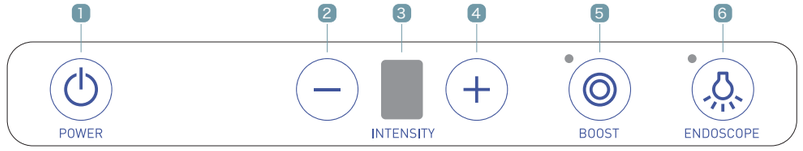
Wide adjusting range of illuminance

The adjusting range of illuminace of our lights was from 30 to 100% but this range was expanded from 10 to 100%. cell provides a suitable light for every procedure.

Consideration for safety

Luminous radiation of cell complies with Clause 201.10 Protection against unwanted and excessive radiation hazards under IEC60601-2-41. Surgeons, Surgical staffs, Patients can use our cell, operation light safely.

Operation control switch



1 Illuminating light ON/OFF switch

2 Dimming - (LOW) switch

3 Dimming level display (8 levels)

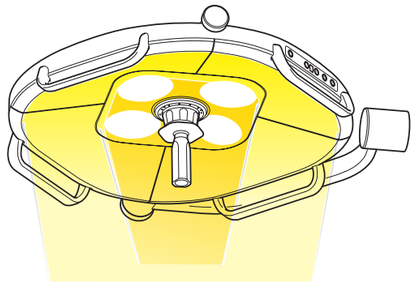
4 Dimming + (Hi) switch

5 BOOST switch

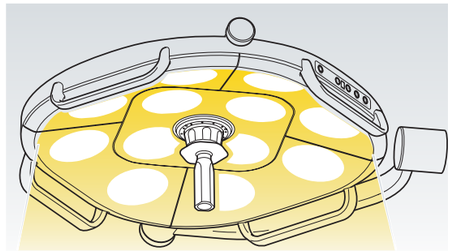
Press the BOOST switch to turn only the center 4 units to maximum brightness. You can use this if you want to illuminate light deep into the surgical site.

6 ENDOSCOPE switch

A touch of a switch dims light intensity to approximately 1% for all lighting units.



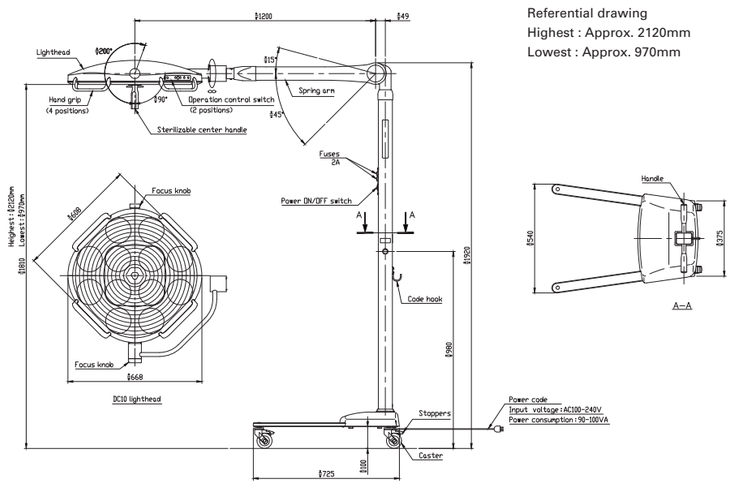
5 Illustration with the BOOST switch pressed



6 Illustration with the ENDOSCOPE switch pressed

Mobile Stand

The mobile stand type is available as auxiliary light for a surgery, the light for emergency procedure, etc..



Referential drawing
Highest : Approx. 2120mm
Lowest : Approx. 970mm

Configuration

DC10

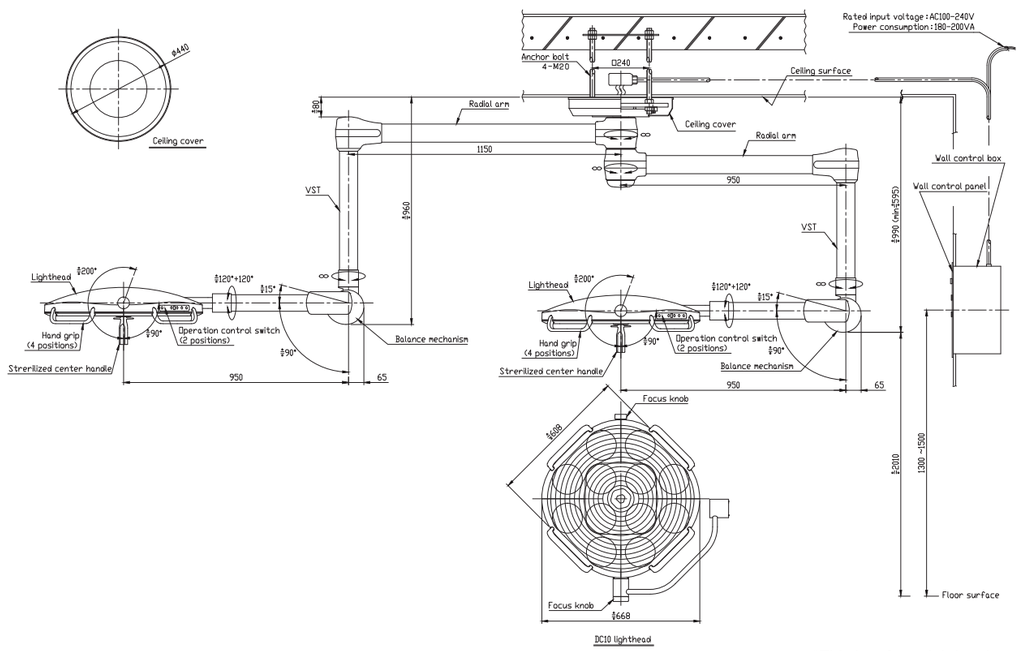
DC1010

DC10-MH

DC10-CM

* Other configurations can be arranged to meet your installation plan. Please feel free to contact us.
* For details about the TV camera mounted arm or monitor mounted arm, please refer to the separate information.

Product drawing



*This is referential drawing

Wall control panel

"cell" operation light is controlled by a wall control panel.
Use the wall control panel for turning the power on or off, adjusting the brightness (from 1 to 8), and turning the BOOST switch, the ENDOSCOPE switch on or off.

*Box type is available

Wall control panel

Dimension

Standard size : W280mm x H280mm x t1.5mm
or : W300mm x H400mm x t1.5mm

DCV series

Use operation control switches on the side of the lighthead to make several adjustments without a wall control panel.

Specifications

Items	cell	
Model Number	DC10	DC10SC
General Name (PMDA)	Surgical lighting equipment	Mobile examination lighting equipment
Composition	Wall control panel + Support arms + Lighthead	Support arm/stand/base + Lighthead
Lighthead diameter	670mm	
Light source	Ultra high color rendering LED	
Illumination method	Reflector method	
Number of LED units	Number of units / LEDs : 12	
Center illuminance at 1m (irrandiance)	About 130,000lux (529W/m^2)	
Maximum illuminance (irrandiance)	About 160,000lux (650W/m^2)	
Light field diameter (d10)	About 215mm / 300mm	
Color temperature	About 4,250K	
Color rendering index	Ra：99 R9：95	
Illuminace adjustment	10 to 100% (8steps) Approx. 1% (ENDOSCOPE mode) by wall control panel / operation control switch	
Focus adjustment	850 to 1,500mm by sterilizable center handle / Focus knob (2 locations)	
LED expected life	40,000 hours (time to 70% illumination) *1*2	
Recommended operating evironment	Temperature : 5 to 35°, Humidity : 30 to 70%, Air pressure : 800 to 1,060hPa	
Input rated voltage	AC 100-240V 50/60Hz	
Power consumption	90-100VA	
Fuse rating	2A	

*1 : It is not a guaranteed value because it depends on the use status and condtions.
*2 : When the initial illuminance is lower than 70%. It is the life of the LED used and not the life of the product.
* Please note in advance that partial changes in the design and specifications may be made without prior notice for reasons such as improvements.
* Comply with IEC60601-1, IEC60601-1-2 and IEC60601-2-41