



## Professional Medical Illumination



from DENTIS Co., LTD

DENTIS is a company specialized in medical devices that started from dental implants and provides professional medical devices, equipment and service such as medical LED Light. LUVIS is flagship brand of DENTIS.

In 2011, Medical LED Lighting industry relied on imports. However, DENTIS successfully localized dental LED Lights for the first time in Korea. In 2012, launching medical LED Lights, DENTIS has been supplying LED Lights to diversified medical field such as plastic surgery, dermatology, obstetrics and gynecology, ophthalmology as well as dental. With strong power on engineering and Quality Control System, all of LED lighting products are being provided as high quality products in the domestic market and will lead the global medical market.

Ultimate goal of Luvis is providing optimal environment that protects the doctor's eyes and patient's health at the same time by utilizing high CRI technology. As providing optimal environment, DENTIS is not going to neglect to get customer's needs, and we promise to do our best to deliver valuable products and service to our client with all of our wisdom and passion.



## PROFESSIONAL LED LIGHT SYSTEM

Operating Light

# Luvis-M/L200



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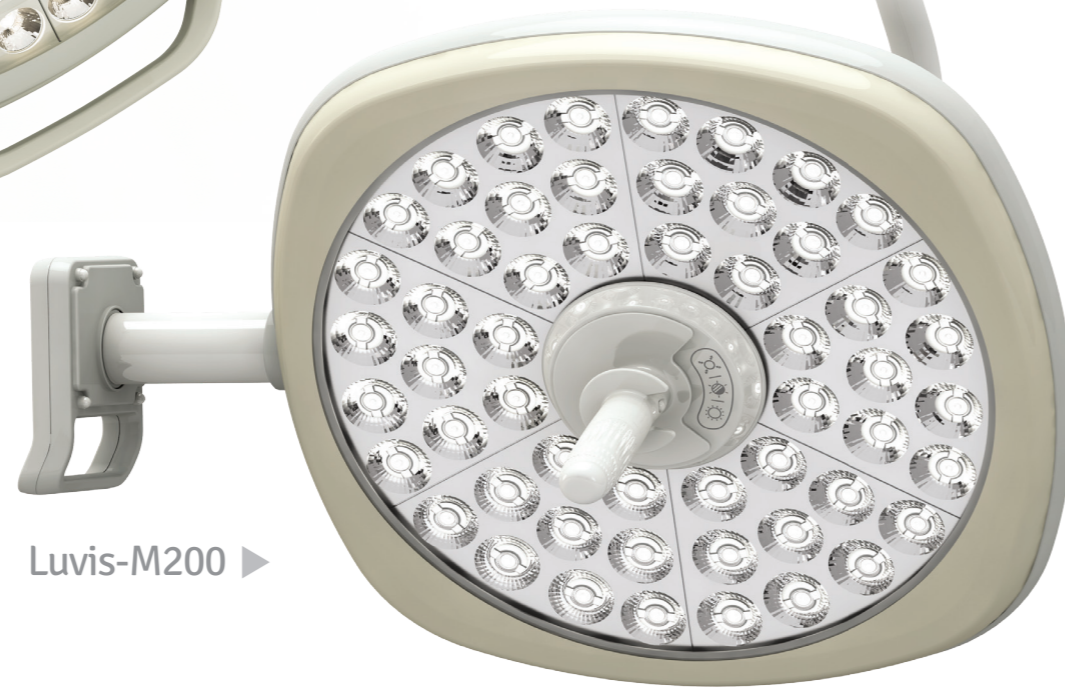
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▲ Luvis-L200



Luvis-M200 ▶

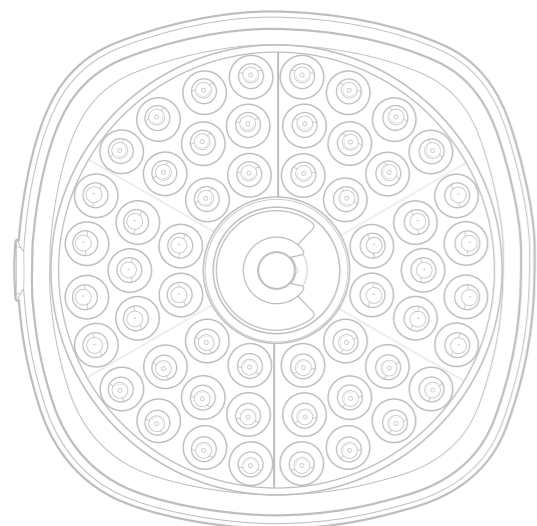


- Dual Ceiling -



Operating Light

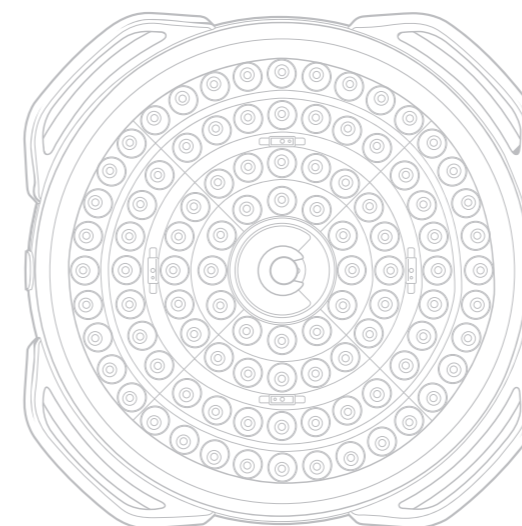
## Luvis-M200



- ❑ Max 120,000LUX INTENSITY
- ❑ Optional 3 Steps of color Temperature selectable (3,800K/4,300K/4,800K)
- ❑ Excellent Depth of Volume of Light (L1+L2 125cm)
- ❑ 95Ra of Highest Level of CRI
- ❑ R9 90 of red color rendering ability
- ❑ Adjustable Focus Size (Dia.20cm ~ Dia.30cm)
- ❑ Excellent Dilution Effect with 54 LED units (50% ~ 100%)
- ❑ Dentis Patent Channel Illuminating Technology
- ❑ No UV emission & Lowest level of heat emission
- ❑ Intuitive control with one touch panel
- ❑ Detachable & Autoclavable Hand Grip
- ❑ Ergonomic & friendly design
- ❑ HD Camera Option (Internal & External)

Operating Light

## Luvis-L200

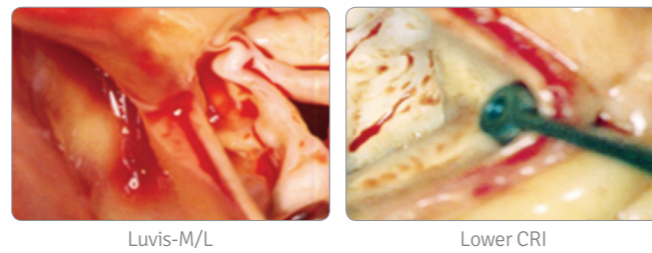


- ❑ Max 160,000LUX INTENSITY
- ❑ 3 Steps of color Temperature selectable (3,800K/4,300K/4,800K)
- ❑ Excellent Depth of Volume of Light (L1+L2 150cm)
- ❑ 95Ra of Highest Level of CRI
- ❑ R9 90 of red color rendering ability
- ❑ Selectable Focal Size (Dia.20cm ~ Dia.30cm)
- ❑ Excellent Dilution Effect with 96 LED units (75% ~ 100%)
- ❑ 4 Smart Sensors for maintaining intensity
- ❑ Dentis Patent Channel Illuminating Technology
- ❑ Intuitive control with one touch panel
- ❑ No UV emission & Lowest level of heat emission
- ❑ Detachable & Autoclavable Hand Grip
- ❑ Ergonomic & friendly design
- ❑ HD Camera Option (Internal & External)

# Fundamental Lighting Technology for Medical Field

## Color Rendering Index

A measuring value, the color rendering index Ra, is used in order to describe the color rendering properties of light sources. This index indicates how the colors will be reflected under the respective light source in comparison with the color reproduction in natural daylight. The highest Ra value is identified with the number 100 - Ra 100 means that all the colors of an object are perceived as in natural daylight. These then appear to the viewer as "natural". The more the color reproduction index Ra deviates from 100, the worse the colors on the illuminated objects are rendered. Especially R9(Red Test color) plays an especially important role in medicine, since the differentiation of various shades of red with tissues and blood is extremely difficult.

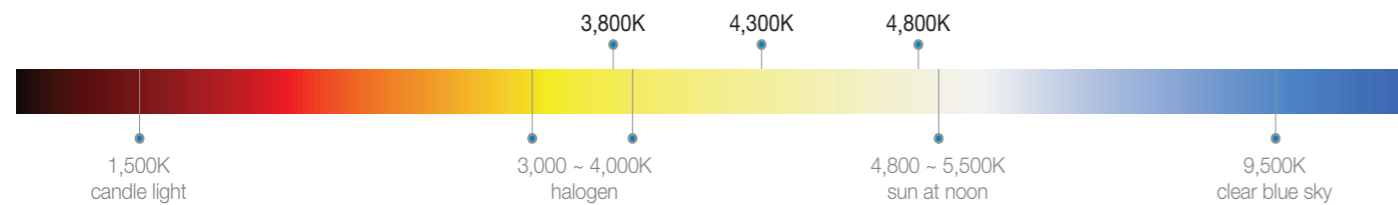


Luvis-M200/L200 deliver the highest level of CRI (Ra=95, R9=90)

## Color Temperature

The color of a lamp is characterised by its color temperature. The object of comparison is the "black body" (made of platinum) which, when it is heated, takes very precise colors at determined temperatures. At the beginning it is dark red, then red, after that orange, then yellow, finally white, and at very

hot temperatures light blue. A specific color is thus defined with an indication of the temperature in K (Kelvin) of the "black body". The Kelvin temperature scale begins at the absolute zero point (-459,67 °F / -273 °C).



## Eye-Comforting : Protect doctors and patients' eyes

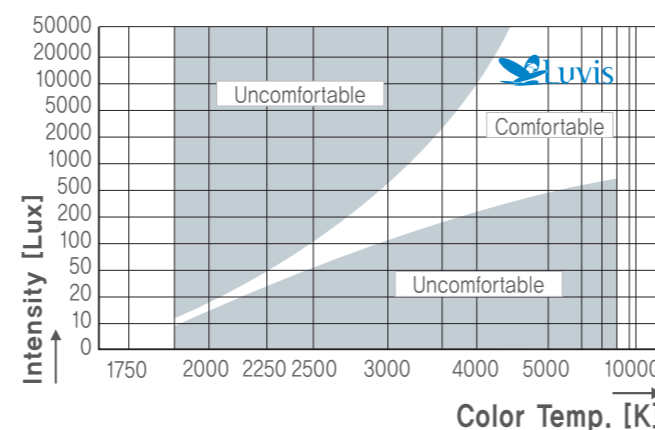
In case of lower color temperature with high light intensity, eye dazzling effect occurs. At the same light intensity, high color temperature gives much brighter light field.

Given that comfort light should consider the balance between intensity (brightness) and color temperature, users easily know the merit of LUVIS-S200 as it allows to control both index. Surgeon may set adequate eye comfort circumstance by customizing intensity and color temperature.

## Long-lasting and Energy-Saving

LED is an environmental friendly light source comparing to conventional light. It doesn't contain heavy metal and it last long with the minimum electric power consumption.

Luvis-M200/L200 gurantes 50,000 hours life time with lowest electric power consumption.



# User Friendly Technology

## Synchronized Intuitive Control

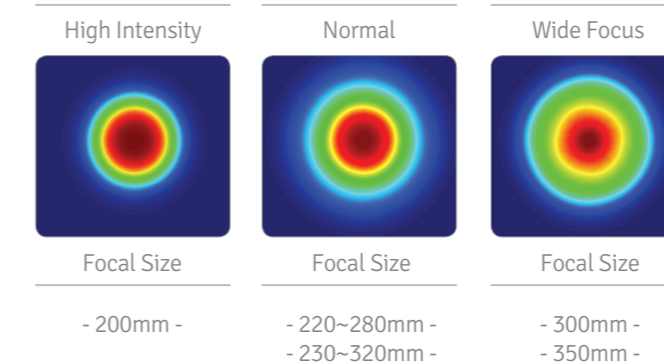
Luvis-M200/L200 adopt touch sensor control panel which surgeon can control the light intensity, focus size and color temperature with only finger touch. The control panel is synchronized with sub-handle for the user to approach the control panel easily during the surgery. Also quick controller on central grip will help surgeons to concentrate on surgery.



## Focus Adjustment

Adjust the focus size to suit your working area to eliminate peripheral distraction.

- ▶ Max. 30cm /Min. 20cm
- ▶ 6 Steps adjustment



## Smart Sensor

Smart sensor will detect the obstacle and increase the intensity automatically. So LUVIS-L200 can deliver more stabilized illumination.



## Dilution Effect

All Medical lights have tested the dilution test to ensure the proper dilution performance which is highly crucial for performance of medical surgery.

Luvis-M200/L200 have excellent dilution effect comparing to any other existing medical illuminations.

- ▶ Luvis-M200 : 50~100%
- ▶ Luvis-L200 : 75%~100%



## Color Temperature Adjustment

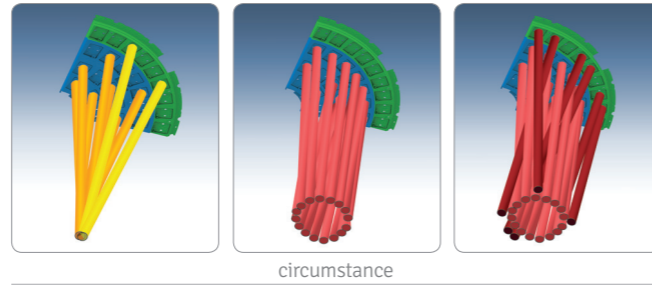
3 steps of color temperature (3,800K / 4,300K / 4,800K) adjustment will help Surgeons to find more suitable and comfortable light color



# Core Technology

## CIS (Channel Illumination System)

- ▶ Channel illumination technology helps to prevent large falling of intensity as enlarging the pattern size.
- ▶ Only 5% of difference will come as the pattern size enlarged while many others show 50% of intensity falling.
- ▶ Channel illumination technology will help the surgeon to have stable well-lit



## Hybrid LED System

Hybrid optical system delivers energy saving performance which directly link to lower heat emission.

Hybrid optical system enables more various function such as color temperature change and focal size change even with less consumption of energy and heat.

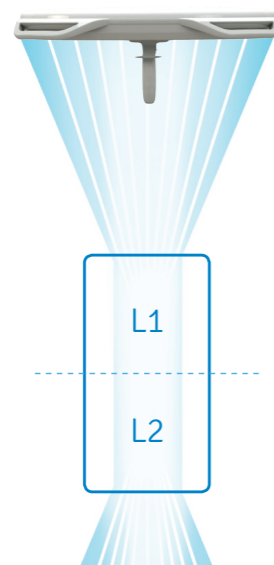


30% higher efficiency comparing to normal reflector and less weighted solution comparing to lens system

## Depth of Illumination

The distance between the point of maximum intensity of illumination at the center of the illuminated field (1 meter from the surface emission of light) and the detection of the value of 20% of the maximum intensity of illumination, measuring in the direction of the emission surface (L1) that in the opposite direction (L2). These values, added together (L1 + L2), gives the depth of illumination without the need to refocus.

A higher level of illumination depth is very important especially in cases of narrow and deep wound channels

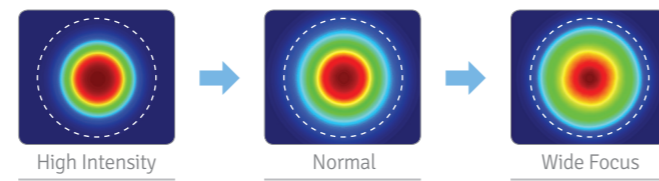


Luvix-L200 delivers excellent depth of illumination

- ▶ Ec x 60% : 85cm
- ▶ Ec x 20% : 150cm

## Light Uniformity

The uniformity is an important feature of the lighting. It is also called by value of 'D50 / D10'. D50 and D10 is the Diameter of light field around the light field center, ending where the illuminance reaches 10% and 50%. Higher level of uniformity can maintain the uniformity of illumination pattern regardless of focus size. Therefore, it can optimize the performance for wider area of surgery.



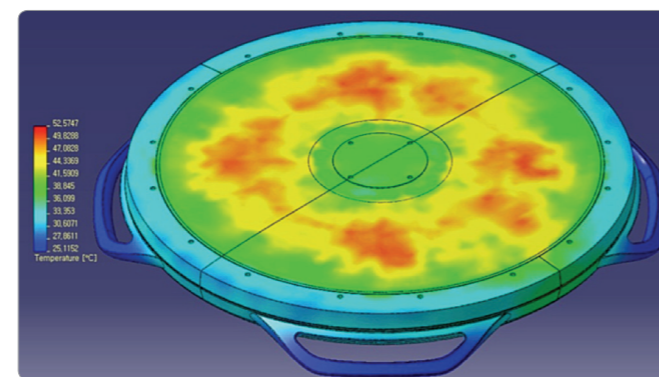
Luvix-M200/L200 deliver excellent uniformity : over 60% (much higher than standard of surgical light)

## Cool Light

LED technology lets Luvix-M200 and L200 keep cool.

Operating theatre light should detain the irradiation of light as the heat dry up the affected part.

Standard recommends not to exceed 1000W/m2 but all of LUVIS surgery lights irradiate far less than the standard requests Minimum heat emission will protect patients' wounds during the surgery.



# Technical Information



Model No.		M200	L200
Number of LED		54 EA	96EA
Head Size		Dia. 50cm	Dia. 67cm
Illumination EC at 1m working distance	Max.	120,000 Lux	160,000 Lux
	Min.	40,000 Lux	40,000 Lux
Color Rendering Index	Ra	95	95
	R9	90	90
Color Temperature		4,300 K	3,800K / 4,300K / 4,800K
Focus Field Size	Max	Max. 30cm	Max. 30cm
	Min	Min. 20cm	Min. 20cm
Depth of Illumination (L1 + L2)	Ec 60%	65	85
	Ec 20%	125	150
Radiant Energy		3.2 mW/m2-lx	3.2 mW/m2-lx
Irradiance		384 W/mw	512 W/m2
Dilution Effect	With Tube	100%	100%
	1 mask	50%	75%
	2 mask	40%	60%
	1 mask + Tube	50%	70%
	2 mask + Tube	48%	56%
Smart Sensor		-	4 EA
Power Consumption		≤100	≤150
Life Span		50,000 hours	50,000 hours
Option		1) Color Temperature (3,800 / 4,300/ 4,800) 2) 2 Mega Pixel Camera (Internal & External)	2 Mega Pixel Camera (Internal & External)
Installation		Single Ceiling / Dual Ceiling	Single Ceiling / Dual Ceiling