

Ergonomic Lighting

Aarhus University Hospital

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The increase in laparoscopic surgical operations has resulted in an increased focus on the fact that the method can be tough for surgeons who now work in front of screens for hours. Therefore, more and more hospitals in Scandinavia are installing the special lighting solution Ergonomic Lighting, which reduces fatigue and strained eye, and ultimately improves patient safety and working environment.

At Aarhus University Hospital Ergonomic Lighting is installed in about 100 different rooms. One of the new rooms is an operating theater for gynecological operations – both minimal invasive and open surgery. The solution has the latest LED technology as well as interface with Karl Storz touch screen in the sterile field.

“We are in operation many hours in a row, so the light is very important. I get less tired in the new light and my eyes are less strained. I am very happy about it. It makes a big difference”

*Mikkel Seyer-Hansen,
surgeon*

Surgeon Mikkel Seyer-Hansen, who works at the operation room, tells about light:

“We are in operation many hours in a row, so the light is very important. I get less tired in the new light and my eyes are less strained. I am very happy about it. It makes a big difference. ”

The combination of green and red

Ergonomic Lighting is zoned, colored and white light for surgical and examination rooms with screen work. The lighting solution consists of the effective combination of the complementary colors green and red light.

“The contrasts are pleasant and very clear in the green and red lights. If the contrasts are not optimal, you start focusing and your eyes strain which is very tiring,” explains Mikkel Seyer-Hansen.

During keyhole surgery the room is divided into several light zones. Green light behind the screen to ensure high image quality, minimise reflection and get the eyes to relax. Red basic lighting reduces glare and ensures doctors and nurses good light to work, to collect equipment and documentation. At the same time the anesthesia have a white zone for observing the patient and finding medicine.

Long operation hours are demanding

“We operate around 400 patients a year. It is complicated keyhole surgery, and often an operation takes around 4 hours. During operation we are standing in various positions og doing very small, precise movements. Its is very exhausting,” says Mikkel Seyer-Hansen.

“Ergonomic Lighting is helpful. I get less tired during surgery and feel more fresh afterwards. It makes a big difference compared to when we had the lights off during surgery.”

User survey among 30 hospitals

Chromaviso have recently conducted a user survey of 330 users of Ergonomic Lighting – in 30 hospitals.

“We can see that Ergonomic Lighting makes a difference to the staff’s working environment and patient safety. For example, 92% of the surgeons points that their concentration is increased, and that the light ensures more quality in their work,“ explains co-founder of Chromaviso, Claus Puggaard.

The study also points out that the green and red light creates a great value for the users and the possibility of dividing the operating room in different light zones is important for 92% of users.

“I don’t notice the green light during surgery. It is obvious that I feel more energized when the operation has finished“

*Mikkel Seyer-Hansen,
surgeon*

Customized for each room

Chromaviso explains the high user satisfaction with the combination of an innovative lighting concept, quality products, a user-friendly control panel and a thorough implementation.

“We always analyse the needs of each room and engage in dialogue with the project team, medico-technical department and with users. When the solution is installed, we follow up with user training and fine-tuning, so every room gets exactly the light settings to suit their needs,“ explains Claus Puggaard.



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Mikkel Seyer-Hansen, surgeon



Better screen,
less fatigue,
fewer mistakes

Benefits of Ergonomic Lighting

Ergonomic Lighting is a zoned, coloured lighting for operating and examination rooms.

The lighting solution consists of an effective combination of green and red light that provides documented results with regard to working environment, quality and safety.

- Minimise reflections and glare on monitors and optimise image quality on monitors
- Less strain on the eyes and less tension
- Less fatigue and increased concentration
- Zoned lighting creates the right light for everyone at the same time
- A high level of user satisfaction and a user-friendly operating system
- Possibility of daylight simulation between procedures



Lighting settings

The lighting is adapted to the users' needs in the specific room and includes customized light settings for selected zones and activities before, during and after a procedure.

A specially designed operating system means that optimal lighting can always be achieved with just a simple push of a button.

Aarhus University Hospital have the following light settings:

- Cleaning
- Preparation
- Patient light
- Laparoscopic – right
- Laparoscopic – left
- Laparoscopic – upper
- Laparoscopic – lower
- Ultra sound
- Open surgery

About Chromaviso – experts in health-promoting lighting solutions

At Chromaviso, we have an ambition to lift the standard for lighting in the health sector. Our solutions are user-oriented and unite extensive insight into the users' needs with expert knowledge about the effect of light on people and intelligent control, operation and integration.

We are experts in health-promoting lighting solutions, and together with scientists, doctors and nurses, we continuously work on developing our products for the health sector of the future.

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