

Press Release

TRUMPF Medizin Systeme
Press/Public Relations

LED light from TRUMPF with camera system:

The first sterile operating lamp camera with SDI output and still picture storage function

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Puchheim, November 15, 2006. The iLED from TRUMPF, the first LED surgical light worldwide, now comes with an integrated CCD-color camera – a refinement of the TRUMPF “TruVidia” camera system. As a result, broadcasts with a quality equaling that of digital video can be sent live from the operating room, and still shots can be quickly and directly archived for documentation purposes, for example. Moreover, the camera is integrated into the light’s sterile operating concept, which allows the surgical team to work more ergonomically. And last but not least, the new version of TruVidia supports a feature that has never been seen before in operating lamps – the color temperature of the iLED is adjustable for color optimization of the light. The new camera system is being presented for the first time at **Medica 2006.**

In the future, the new 1/6-in. super CCD color camera used in conjunction with the iLED surgical light will assist hospitals in the teaching, research and documentation of all telemedical applications. For this reason, TRUMPF Medizin System specially equipped its surgical light camera with the latest technical and user-friendly features. One of the innovations is the “Serial Digital Interface” (SDI). TRUMPF is the first manufacturer to offer this interface as a video output option for a light camera. SDI is currently considered the best available technology for extremely high quality digital video transmission. It is the first choice for

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virtual surgical training using live broadcasts. The live images broadcast by SDI from the OR are razor-sharp with all details true to the original and can be magnified up to 25 times with TruVidia. The video images can also be broadcast from the OR to all auditoriums and seminar rooms connected by cable. It is even possible to span large distances without expensive image amplifiers. The image output on high-quality TFT flat screens, available as an option from TRUMPF, also benefits from the SDI broadcast. But these monitors can only perform to their highest potential if the data supplied meet the high quality standards. Moreover, the SDI technology supports high-quality digital imaging and archiving in the operating room.

Convenient documentation during surgery

To facilitate archiving for the surgical team, TRUMPF outfitted the new version of TruVidia with a still picture storage function never before seen in surgical light cameras. It is now possible to store video still shots directly and easily on a USB memory stick. For example, the surgical team can generate snapshots at any time during the operation, save them on the memory stick and print the images out quickly and simply. Images can also be sent by e-mail or exchanged with compatible systems. This increases not only the quality but also the mobility of electronic patient files. All diagnostic and surgical data and images can be quickly sent via the Internet to doctors providing further treatment, regardless of the hospital or country in which they are located. This spares the patient the hassle of undergoing stressful and expensive second or third-round examinations.

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Sending both sound and image on their way

The new iLED camera also makes it possible to broadcast video images live from the operating room using existing digital networks and across long distances, for example for teleconsultations between surgeons at various hospitals around the world. For these and similar applications, TRUMPF offers an optional, new integrated system for the camera that enables MPEG-2 and 4 quality video streaming. MPEG is a format that compresses extensive video data into transmissible data packets. The data can then be transmitted through any LAN networking or over the Internet. Since the system also supports bidirectional acoustic telecommunications – the reciprocal transmitting of sound signals and language – surgeons can use a single system to have a look at each other's work in addition to discussing issues and providing advice.

The camera's eye following the surgeon's eye

Another highlight involves the uniform, modular interfaces of all camera models. The same camera module can be mounted on the separate support arm or directly in the sterile handle in the center of the light – either the iLED 5 with five modules or the iLED 3 with three modules. As a result, the hospital can arrange as many lights and support arms with adapters and interfaces as it wants for the camera, setting them up as needed and as cost effectively as possible for all operating rooms.

Here is the advantage of the integrated version: If the surgeon uses the sterile exchangeable handle of the lamp to position it for the best illumination, in the process he or she is automatically

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putting the camera where it will have the best “view” of the operation. An electromotive image adjuster prevents images on the monitor from being turned upside down after a couple of turns of the light or from being tilted to the side.

The benefit of the separately mounted version becomes evident as soon as the surgeon has to bend over and his or her head comes between the lamp and camera and the operating site. While an integrated camera at this point would stop “seeing,” the separately mounted camera can be positioned independently from the lamp so that its line of vision to the operation would remain clear. An obstacle between the operation field and iLED can do nothing to change the light field anyway – 184 diodes ensures that the illumination maintains its uniform strength with almost no shadows.

The camera is conveniently controlled, meaning the zoom, image adjust and still shot functions can be activated through the external ECU, PC or the sterile lamp panel regardless of the installation version. This offers an additional advantage in terms of the ergonomics of operating rooms. Anyone on the sterile surgery team can use the panel to independently adjust any light and camera function to any new situation. Additional unsterile staff are no longer needed to perform this task, saving the hospital time and money.

Live broadcast – true to the original with exact color matches like never before

A unique selling point of the LED lamp that the new camera supports is its adjustable color temperature. This allows the



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surgeon to adjust the light to the specific OR situation between 3,500 and 5,000 Kelvin. The brighter light supports depth illumination with additional blue portions. Light with additional red portions reduces the reflection of skin and bright areas of tissue while maintaining a good, uniform contrast. When the surgeon adjusts the color temperature, the light notifies the camera of the change, which in turn adjusts itself, transmitting the images in the original color of the operating field to monitors both inside and outside the operating room.

Employing these new features for telemonitoring, teaching and consultation, iLED and TruVidia will be instrumental in improving training for surgeons worldwide, caring for patients in the best manner possible, shortening waiting times and preventing cumbersome transports. These are benefits that will reduce costs in the long term not only for hospitals but for health care systems.

TRUMPF

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