

Company: Evena Medical
Industry: Medical
Instrumentation
Product: SpecBright
Linelight
Description: Near-infrared
illuminators for
vascular imaging
systems



Evena Medical, based in Los Altos, California, offers patented near-infrared (NIR) vascular imaging systems that shows vein location and patency in real time. These innovative systems arm hospitals and their clinician teams with systems in the critical issues around infusion therapy - vein identification, best vein selection, verification of flow, infiltration detection/extravasation and outcomes. Both patients and care givers benefit from the systems.

Requirement

To detect deoxygenated blood within veins, Evena Medical required a near- IR illuminator with a compact controller. The wavelength, intensity, uniformity and size of the illuminator & the controller were key challenges in the project

Solution

ProPhotonix Near-IR SpecBright Line Light in a back light configuration with a custom inline controller

When developing their vascular imaging system Evena medical chose ProPhotonix as their development partner for our ability to work with specific wavelengths and our partnership approach to providing custom solutions. Evena Medical worked closely with ProPhotonix' Applications Engineers to determine the most suitable light for this innovative application and to develop a custom controller helping to minimize the size of the system.

"In business today, unfortunately, too many companies say "This is our product line take it or leave it". ProPhotonix listened to us and offered a unique solution which optimized our systems"
Frank Ball, CEO, Evena Medical.



Wavelength

Evena Medical's imaging system requires a specific wavelength of light to improve the resolution of the image produced. Because ProPhotonix works with Chip-on-Board technology, (i.e. work with the bare LED chip), the company can design and manufacture compact, intense illumination in any available wavelength. ProPhotonix provided a number of sample products in the range of near- IR wavelengths allowing Evena Medical to test the products in their system and identify the best wavelength for their application. Identifying the correct wavelength allowed Evena to vastly improve the quality of image that they obtained.

"The result was an order of magnitude improvement in the image quality"

David Gruebele, CFO, Evena Medical

Even, Uniform, Intense Illumination

Evena Medical's system images the deoxygenated blood within veins. High intensity is required as the light must penetrate hair and skin etc., up to 1cm thick and return enough light for the image to be successful. ProPhotonix' use of Chip on-Board LED technology ensures intense, uniform illumination. ProPhotonix SpecBright Line Light allowed Evena Medical's system to see deeper than anyone else in their industry. As an added benefit Evena Medical found that the uniformity of light provided by the line light enabled them to get an enhanced, improved contrast image. With this more detailed image they can actually identify when there is IV fluid or blood product escaping from the veins providing care providers with more critical information for the benefit of the patient.

Size

The form factors of both the light and the controller were key considerations in determining the size of the enclosure used by Evena. ProPhotonix SpecBright products are extremely compact and this allowed Evena to utilize a compact enclosure. A custom compact, inline constant current controller was also designed not only enabling Evena Medical to reduce the size of their enclosure for the existing product but also providing the foundation for the design of a product line extension for the export market which will be launched in 2013.

On working with ProPhotonix, Frank Ball, CEO of Evena medical said "We take a partnership approach to business. ProPhotonix does too".