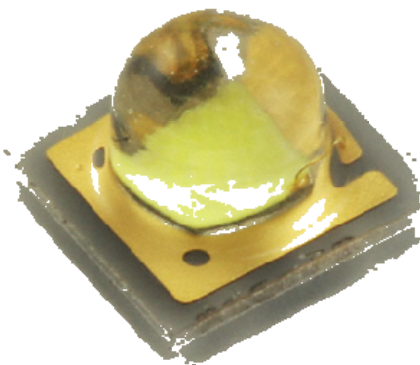


Endoscope with Distal LED for Illumination

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Presently, external cold light sources with Xenon or Halogen lamps are used as illuminators for minimally invasive surgery. The produced light has to be transported by a light conducting cable to the endoscope, leading to a cumbersome handling of the device. Next to that, the poor efficiency of the system is a main disadvantage.

An endoscope with an integrated light source consisting of an LED at the distal end is able to overcome all these problems. Today's high-power-LEDs produce enough light to substitute the external cold light source. However, a heat transfer system consisting of heat pipes and copper connectors is necessary to transport the thermal energy, caused by the LED, to the handle of the device.



**This talk will be presented by Daniel Brüggemann at the
World Congress 2012 of Medical Physics and
Biomedical Engineering in Beijing, China, PRC**