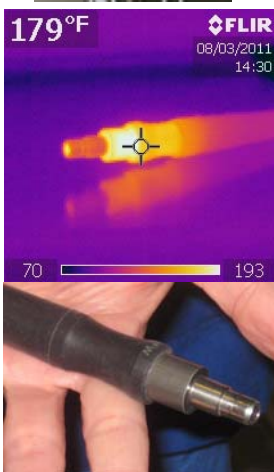


WORKING SAFELY WITH XENON SURGICAL HEADLIGHTS



Hot Hand Reversible Temperature Monitor label warning appears at 157°F

XENON HEADLIGHT SYSTEM FACTS

- Surgical headlights connected to a light source containing a xenon lamp provide surgical illumination similar to sunlight, providing true white light with excellent color definition.
- Surgical headlight systems are widely used in the Duke University Health System. They typically consist of a surgical headlight connected to a high intensity xenon light source (300 watts) with a fiber optic cable (see picture left).
- Xenon lamps are filled with xenon gas under very high pressure.
- Xenon lamps produce high intensity visible and ultraviolet (UV) radiation.
- The cable tips that connect to the light source become extremely hot.
- The Occupational and Environmental Safety Office (OESO) measured surface temperatures (using a FLIR BCAM SD Infrared camera) of fiber optic cable tips at upwards to 256°F.

HAZARDS OF XENON LIGHT SYSTEMS

- Potential burns to the skin from touching the hot cable tip surfaces. At 140°F, five seconds of contact time can result in 2nd degree burns.
- Potential explosion if used in the presence of flammable gases.
- Potential lamp explosion if fractured by mechanical forces or rough handling.
- Trip hazard from dangling cords.

SAFE WORK PRACTICES

- Allow the metal tip to cool before handling. Once removed from the port, the tips can take longer than five minutes to reach temperatures that no longer pose a burn hazard upon contact (<140°F).
- Place warning labels or tags on the tip handles. Reusable, self adhesive Hot Hand Reversible Temperature Monitor labels (see picture left) are one option.
- Do not use the light source in the presence of flammable anesthetics or other flammable gases.
- Communicate hazards to all affected employees. A presentation titled "Surgical Headlight Safety for the Duke Operating Room" is available from OESO.
- Call OESO at 684-5996 with questions.

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