THE STRONGEST DANA 44 EVER MADE

Off-Road

...D. PERFORMANCE

FULLSIZE TRUCK BUILDING

- ★ TURBO & TUNER MODS
- ★ BUMPER BUILDING
- ★ AXLE BUILDING
- ★ SUSPENSION UPGRADES

PLUS!

- ★ OFF-ROAD DISSECTION: SEATS
- ★ 4X4 TRANSMISSION TUNING
- ★ MILITARY-ISSUE LED LIGHTS
- ★ SELF-LEARNING FUEL INJECTION FOR YOUR V-8

15 MONTHS OF 47-INCH TIRES

off-roadweb.com
A SOURCE INTERLINK MEDIA PUBLICATION

05
$5.99US $6.99CAN
MAY 2011
VOLUME 45, NO.5

BADASS BULBS

LOOKING AT THE FUTURE OF LED LIGHTS

BY JERROD JONES
PHOTOGRAPHY: JERROD JONES

IF YOU HAVEN'T NOTICED BY NOW, WE'RE PRETTY EXCITED ABOUT LED LIGHT TECHNOLOGY AND HOW FAST IT IS GROWING. EVENTUALLY, THERE WILL BE AN OPTION (IF NOT A STANDARD) OF LED LIGHTING FOR ALL YOUR ILLUMINATION NEEDS. THE DROPPING COST OF LIGHT-EMITTING DIODES AND THE IMPROVING PERFORMANCE IS STARTING TO MAKE THEM A GREAT OPTION FOR MANY OFF-ROAD ENTHUSIASTS.

KC HiLites seems to be leading the pack with applied LED technology in the off-road aftermarket right now. This particular LED design was initially developed for the military (under patent U.S. #7,824,076). It has been in testing more than four years for aerospace applications in accordance to DO160F requirements. The design utilizes two single, large-die LEDs in the construction and uses the latest optical, CAD /CAM and thermal software.

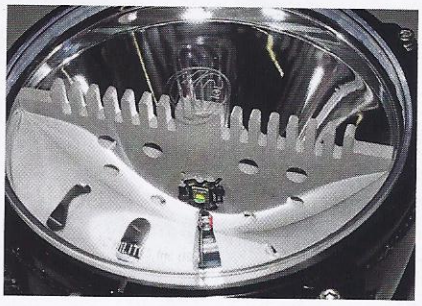
The reflector is hydroformed using a complex surface to direct the light exactly where it is wanted.

Right about now, you may be asking yourself, "What makes them better than a multi-LED light?" And we asked KC that very same question.

This is the answer we received: "A reduction in the number of LEDs results in more reliability and an increase in MTBF (Mean Time Between Failure). MTBF is a calculation used for all military designs. This light has an MTBF of more than 20,000 hours. Compare that to a 1,000-hour halogen or a 2,000-hour HID. The optical coupling of the reflector and the two LED bulbs result in more downfield light while using less power, making less heat, and being lighter in weight."

We know your next question, too: "Is it brighter than an HID yet?"

KC Hilites replies: "It will be a while before we can match the point source of an HID burner with that of an LED. This LED design utilizes less components, making it more reliable, and the burner does not devitrify as fast as an HID would (requiring replacement). It will also exceed the HID under vibration conditions." **OR**



▶ KC HiLites has been able to use two LED bulbs in place of many (in a single light) utilizing a combination of technologies. The optical software, LEDs, and the lighting science field are evolving at a very rapid rate these days. Researchers are developing new materials for the emitters, thermal cooling, and optical efficiency.

The amperage draw is a simple function of the total watts. These two LEDs are producing 35 watts, which equates to 2.9 amps per light. They are currently being used on aircraft for landing and taxi lights.

▶ Mounting is done with either a single large bolt through a light tab, or using two smaller bolts spread over a larger base area. The LED lights use KC's top-shelf, carbon-fiber housing and give an unparalleled look and feel.

KC LED LIGHT VS. KC HALOGEN

The images speak for themselves. The LED light does not bleed like the halogen beam does. While not quite as effective as HID lighting yet, LEDs are quickly taking over. LED lights are more durable than and almost as bright as an HID–while giving world's better light over the halogen bulbs.