

LED_Performance_Compare_2004.txt

Performance per cost is going up.

See page 8, 9, and 10 of a Nov. 2001 report.
<http://lumileds.com/pdfs/techpaperspres/MRS2001.pdf>

See page 5, 11 in the following this years report
<http://www.lumileds.com/pdfs/techpaperspres/SID-BA-Paolini.pdf>

See page 2, in the following this May 02 report.
http://www.lumileds.com/pdfs/techpaperspres/OIDA_28May2002.pdf

Note that current red LED's are similar in efficiency to Fluorescent lights at around 70 to 110 lumens/watt. White LED's fall down to 20-30 Lumens/watt and are equal to or slightly better than Halogen but not as good a Mercury Vapor. If one studies the rate of change of efficiency (doubles about every 5 years) and the cost (decreases by 10 x over the next 5 years). What this says is that in about 5 years the 1000 watt priced out in my example at \$6000.00 will be down to about \$300.

One good thing about these charts is that it shows the most efficient current lighting to be High pressure sodium (160 lumens/watt) then Fluorescent and Red LED at about (80 lumens/watt) then Mercury Vapor (60 lumens/watt), then Halogen (25 lumens/watt, and finally Tungsten (14 lumens/watt).

The real advantage to us of LED lighting is unbreakable, long lasting, and works well with DC power. Efficiency at this point of time is not a big enough factor. Although unlike filament bulbs at lower voltage LED become more efficient instead of less. For these reasons LED's work well for task lighting.

So the bottom line is if you can afford LED's go for it, if you can't then consider using Sodium or Florescent or a combination of both. These have the disadvantage of needing AC power. As a last resort one could always use Halogen, which will run on DC directly.

For other papers on the subject see:
<http://www.lumileds.com/pdfs/techpaperspres/>