



Information Display Enhancements

**“Enhancing Your Point of View.”**

# LED Backlight



# Introduction

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IDE's Research & Development team developed the LED backlight to meet the growing demand for an effective and efficient alternative to the CCFL. LED delivers the solution for demanding and extreme environmental conditions while lowering cost of ownership.



# Fields of Application

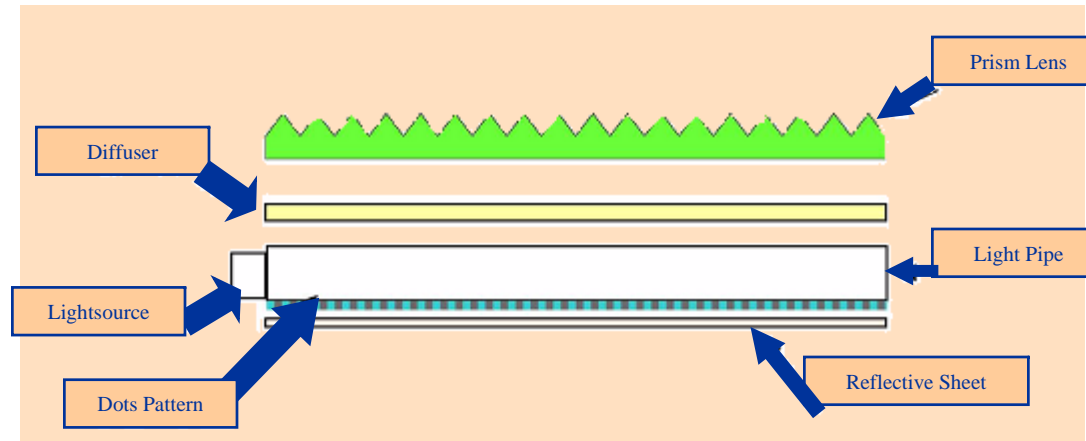
Fields of Application  
Enhancing Your Point of View.

- Flatscreen Monitors
- Notebook PCs
- Consumer Displays
- Kiosks
- Medical
- Military
- Avionics
- Equipment





# Construction Principle



- Light sources
- Light guide with micro structure / dots
- Reflector sheet or box
- Additional improvements



# Comparison: LED vs. CCFL

LED	Compare	CCFL
<b><u>ADVANTAGES</u></b> <ul style="list-style-type: none"><li>• <b>Life =100,000 hours</b></li><li>• High performance sufficient for all applications</li><li>• “Right-fit” LCD regardless of size &amp; thickness</li><li>• Simple driving circuit</li><li>• Low voltage compatible</li><li>• Fastest response time</li><li>• -40C no delay full brightness</li><li>• Full &amp; flicker-free dimming at all temps down to NVG</li><li>• Auto &amp; manual non-linear, programmable dimming control</li><li>• Programmable chromaticity adjustments</li><li>• Night vision solutions</li><li>• Ruggedization superior</li><li>• Mercury-free</li></ul>		<b><u>ADVANTAGES</u></b> <ul style="list-style-type: none"><li>• Life = 10,000-50,000 hours</li><li>• High brightness</li><li>• Less expensive</li></ul>
<b><u>DISADVANTAGES</u></b> <ul style="list-style-type: none"><li>• Expensive for large displays</li><li>• Requires efficient heat sinking</li></ul>		<b><u>DISADVANTAGES</u></b> <ul style="list-style-type: none"><li>• Expensive driver circuit</li><li>• High voltage power consumption</li><li>• Wavelength filtering for colored light</li><li>• Requires unreliable &amp; noisy inverter</li><li>• Dimming control extra cost</li><li>• Fixed chromaticity</li><li>• Requires expensive NVIS filters</li><li>• Requires efficient heat sinking</li></ul>



## Direct Backlight & Edge-lit

Direct and edge-lit backlight systems are available in LED configurations. Other value-add enhancements, services and customizations can be integrated to provide a total application solution.



# LCD Value-Adds

LCD Value-Adds  
Enhancing Your Point of View.

## Enhancement Options

- Passive
- Active
- Direct Backlight
- Anti-Reflection
- Anti-Glare
- Wide-View
- Restricted View
- Bonding
- Night Vision
- LED Backlight

## Additional Products & Services

- Research & Development
- Environmental Testing
- Supporting Documentation
- Design - Value-Add - Full Assemblage
- Shields
- Ruggedized
- Man-machine interface
- After-market value-adds
- Full logistic services
- Warranties



# 2004 - 2005 Schedule

- High-level schedule milestones for 3.8" – 10.4"

**Research & Development**  
1<sup>st</sup> Qtr. 2004

**Final Prototyping**  
2<sup>nd</sup> & 3<sup>rd</sup> Qtr 2004

 **Ship 3.8; 6.4; 8.4; 10.4**  
4<sup>th</sup> Qtr. 2004 – 1<sup>st</sup> Qtr. 2005



2004-2005 Schedule  
Enhancing Your Point of View.



# About IDE

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IDE is an LCD and systems value-add solution provider, offering a complete range of innovative products and services for industrial, government, aerospace, security and computer markets by improving standard attributes to meet demanding application designs.

IDE's A+ and ISCET certified technicians, supported by electrical and design engineers coupled with a complete research & development staff, can develop a single prototype or mass produced, ready-to-use turnkey units, achieving or exceeding price/performance goals.

If you have an LCD, IDE can

**“enhance your point of view.”**



# Contact Us

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