Lamp Sub-Assemblies

For the best economical solution, LCD Lighting offers our customers a unique and comfortable “one-stop-shopping” experience. On site we can fully produce assembled Lamp Sub-Assembly (LSA) units to your specific design drawings and specifications. The LSA includes the lamp, wiring harnesses, connectors, heaters, sensors and reflective backplate or cavity.

Our new isolated clean room assembly area features state-of-the-art ESD equipment and workstations for electrostatic discharge free assembly. The addition of key experienced personnel underwrites our investment to better serve our customers.

If we are already producing the fluorescent lamp for you, then consider taking advantage of our experience, assembly acumen, lower labor rates, reduced shrinkage, lower material inventories and improved cycle times by having LCD Lighting assemble your LSA modules per your drawings and specifications. Instead of receiving and handling the fragile fluorescent lamp, we will deliver a fully tested module to “plug-and-play” into your system.

Any, or all, of the following value added services could be performed by us at lower costs and faster turn-around times for you:

- Lamp Heater
- Temperature Sensor
- Optical Sensor
- Thermoelectric Cooler (TEC)
- Wire Harness Assembly with or without Connector
- Reflective Backplate or Lamp Cavity
- Full LSA Acceptance Test Procedure (ATP)

Technical and Performance Specifications

Sizes:

- 4:3 aspect ratio such as:
  - 3×4 (5” diag), 4×5 (6.4” diag), 8.4” diag, 10.4” diag, 12.1” diag, 13.3” diag, 14” diag, 15” diag, 15.4” diag, 18” diag, 20.1” diag, 21” diag, 24” diag
- 1:1 aspect ratio such as:
  - 3×4 3ATI (2.3×2.3), 5ATI (4×4), 5×5, 6.25×6.25, 6.7×6.7, 8×8, 10×10
- Custom sizes available

Lamp Technology:

- Cold-Cathode Fluorescent Lamp (CCFL)
- Hot-Cathode Fluorescent Lamp (HCFL)
- Diameters (mm): 2.0, 2.2, 2.4, 2.6, 3.0, 3.8, 4.8, 6.0, 6.5, 7.0, 8.0, 9.0, 10.0, 11.0, 11.7, 12.0, 12.6, 12.7 (T-4), 13.0, 14.3, 15.0, 15.9 (T-5), 18.0, 19.0, 20.0, 24.5, 25, 25.4 (T-8), 38.1 (T-12)
- Configurations: Straight, L-shape, C-shape, U-shape, M-shape, W-shape, Multi-leg Serpentine, Cathodes Bent 90 or 180 degrees out-of-plane

Lamp Only Performance:
• 15,000 to 35,000 cd/m² Luminance
• Uniformity \( \frac{(L_{\text{max}}-L_{\text{min}})}{(L_{\text{max}} + L_{\text{min}})} \leq 30\% \)
• Wide Range Chromaticities \((x, y \text{ or } u', v')\) \(r < 0.030\)

**Backlight System Performance:**

• Wide or Narrow Viewing Angle
• Vertically Biased Viewing Angle
• 500 to 1500 cd/m² Luminance
• Luminance Uniformity \( \frac{(L_{\text{max}}-L_{\text{min}})}{(L_{\text{max}} + L_{\text{min}})} \leq 30\% \)
• Wide Range Chromaticities \((x, y \text{ or } u', v')\) \(r < 0.030\)
• Power Range of 2-100 Watts

**Inverters:**

• Both CCFL and HCFL Products
• Various Input Voltages and Interface Signals
• Optional Feedback Techniques
• COTS or Custom Designs Available

**Capabilities:**

• Lamp
• Lamp + Reflective Plate or Cavity
• Lamp + Reflective Plate or Cavity + Filters/Diffusers
• Lamp + Reflective Plate or Cavity + Filters/Diffusers + Inverter

**Additional Functions:**

• Lamp Heaters
• Temperature Sensors
• Optical Sensors
• Thermal Management

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**Downloads**

No matter which size or shape of miniature and sub-miniature fluorescent lamp you need – we can engineer, design and manufacture the lamps that will fit your unique application requirements. In over 27 years of manufacturing experience the Light Sources group and LCD Lighting have custom-designed for virtually every market application you can think of.

[Download the design requirements data sheet](#) today and send us your requirements to info@lcdl.com.