

Cost-effective 4x5-inch display module offers high reliability in a compact LRU

The KDM640S display module features a high-resolution 640x480 AMLCD and life-of-the-aircraft LED backlight designed for standard avionics ambient-lighting applications. Display module specifications are provided on the back of this sheet. Advantages include:

- Cost effectiveness
- Very high reliability
- Life-of-the-aircraft, solid-state LED light source with low cost of ownership
- LED array with built-in redundancy
- Low weight
- Compact packaging for additional LRU features
- Low operating temperature
- Very low power consumption for increased LRU power budget
- No high voltage in drive circuitry, eliminating the risk of shock
- Virtually instant warm-up
- Full night-vision compliance optional (NVIS Class B)
- Vivid primary colors
- Very wide viewing angle



In addition to the KDM640S 4x5 module above, Esterline offers other KDM products in a range of standard sizes: 3AT1, 6x8, 6.25x6.25, and 8x13 inches.

KDM640S standard-performance AMLCD module with LED backlight

Specifications

Available with optional NVIS lighting

General

AMLCD	TN-TFT with heater
Active area (H x V)	5.216 x 3.912 inches (132.5 x 99.4 mm)
Pixel arrangement	RGB stripe
Pixel format (H x V)	640 x 480
Resolution	>122 color groups per inch
Outline dimensions (max.)	6.02 x 4.84 x 1.50 inches (153 x 123 x 38 mm)
Weight (max.)	1.5 pounds (680 g)

Optical

Backlight	RGB LED (NVIS Class B Option)
Display mode	Normally white
Gray shades (colors)	262,144
Luminance (max.)	240 fL (820 cd/m ²)
Luminance (min.)	0.04 fL (.14 cd/m ²)
Viewing envelope (CR>8:1)	±60° H, ±45° V
Contrast ratio: dark ambient	>200:1 @ 0H/0V
Contrast ratio: high ambient	>10:1 @ 0H/0V
Reflectance: specular	0.79% typical
Reflectance: diffuse	0.07% typical

Interface

Display interface	6 bit RGB
Voltage (backlight)	16.0 – 31.5 VDC
Power	Backlight: 28 VDC: 9 W AMLCD: 5 VDC: 0.85 W
Response time	($t_{on} + t_{off}$) 25ms @ 35°C

Environmental

Environmental	DO-160E, MIL-STD-810E
MTBF (MIL-STD-217)	37,000 hours, 35°C AIC
Operating temperature	-55°C to +55°C continuous +71°C reduced luminance +85°C emergency
Warm up from -40°C	< 1 minute functional < 5 min. full performance

Performance

Altitude	+55,000 ft (+16,900 m)
Vibration	0.04 g ² /Hz 15 – 1000 Hz
Clearing point	>95°C
Storage temperature	-55°C to +85°C
Life (min.)	20,000 hours AIC

For more information about Korry displays,
visit www.esterline.com/controlsystems.

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