

# 12mm Monochrome

## Specifications & Physical Characteristics

Module	12mm Monochrome
Display Pitch	12.7mm
Display Type	Monochrome Video Graphics & Text
Colors Available	Red, Amber, Blue, Green, & White (choose one)
LEDs per Physical Pixel	1
Expected Display Lifetime	Up to 100,000 hours
Avg. Brightness @ 6300K	4000 to 7500 nits (depends on color and LED lot)
Min. Character Height	3.6" (Based on 7 pixel high characters)
Module Pixel Configuration	16h x 32w
Module dimensions	8"h x 16"w
Pixels sq ft	976
Horizontal Viewing Angle	110 degrees (to half brightness)
Vertical Viewing Angle	70 degrees (to half brightness)
Ventilation	Forced Air or Sealed System, using Heat Exchangers or Air Conditioning
Cabinet Material	Aluminum Extrusion
Colors	256 Shades
Communication Options	RS-485 Serial, Ethernet, RF-Wireless
Service Access	Front, Rear, or Front & Rear
File Type Compatibility	JPG, BMP, & AVI (also compatible w/2Mpro MME files)
Input Source Options	Standard DVI, up to 192 different inputs (configurable based on your needs and expandable as needs change); optional NTSC/PAL, S-Video, SDI, HDSDI, etc. via best-in-class external scaler/switcher hardware.
Controller Requirements	Coldfire on-board controller (max height of 64 pixels & max width of 256 pixels) or eVidia system with IOI Controller (non-proprietary and open system)
Player Software	Multimedia provides standard software or clients can provide any player software of choice.

**Five LED Colors to Choose from including: Red, Amber, Blue, Green and White, each with 256 Color Shades**



12mm Mono Module 8"H x 16" W



White LED Module + Cabinet  
pixels: 64h x 128w  
dimension: 32"h x 64"w

### Hand Picked Diodes

We use only hand selected, top quality single bin diodes that are color matched. Each diode lot is separately selected and purchased. And, we build spare parts out of the same diode lot and store them for future use so that the diodes will still match in color.

### High Contrast

A poly carbonate face plate material was specially developed to absorb light and reduce reflective interference caused by sunlight. This fade-resistant coating material reduces glare and provides a high contrast ratio of up to 1000:1.

### Color Control

Monochrome systems produce 256 shades of color.

### Energy Efficient

Power is distributed at the correct voltage for each component without the use of energy robbing resistors and inefficient linear power supplies. We also use the highest efficiency diodes available on the market. This leads to the most efficient LED displays you can buy.

## Monolithic

We fuse all face materials to a single mono-bloc element leaving no fasteners exposed to the elements. The modules are fastened to the structural enclosure via quarter-turn latches and they attach accurately and securely to the face, so that it is virtually impossible to see grid lines.

## Energy Efficient

Power is distributed at the correct voltage for each component without the use of energy robbing resistors and inefficient linear power supplies. We also use the highest efficiency diodes available on the market. This leads to the most efficient LED displays you can buy.

**Feature | Benefit:** Unique Louver design places the louver over each row of LEDs | Smaller Louvers mean better shading and greater viewing angle.

**Feature | Benefit:** The darkest flat black surface finish | Gives amazing contrast and image clarity in conjunction with high brightness LEDs

**Feature | Benefit:** No exposed hardware | Eliminates the small points of glare that can distract from the black background

**Feature | Benefit:** Top quality LEDs | Power efficiency and high brightness from the industry leaders in LEDs



**Feature | Benefit:** Custom molded gasket | Creates a watertight seal, ensuring a long display life and maximum up-time

**Feature | Benefit:** Conformal coated circuit board and potted module | Protects the electronics from the elements and ensures a long display life and maximum up-time

**Feature | Benefit:** Non-conductive silicone lubricant in all connectors | Keeps water and dust out of the critical connection points

**Feature | Benefit:** Molded water dam | Added protection in the event of water in the display, this will keep water away from the connectors

**Feature | Benefit:** One standard power and data connector per module | Quick service in the field reduces the total cost of ownership

**Feature | Benefit:** Two quarter turn latches to remove the module | Quick service in the field from either the front or the back of the display (display configuration choice) reduces the total cost of ownership



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