



MB-Series Tactical Cockpit Displays

Touch & Wide Screen Displays
CUSTOMIZED to meet YOUR Specifications!

MB-Series Tactical Displays

are slimmer, lightweight, low power consumption, passively cooled, high brightness and contrast for direct sunlight visibility. The MB-Series offer the same quality optics and robust design found in the MA-Series such as superior lighting & optics, full vibrant colors for day and wide gray scale range for

NVIS. Touch screen is Multi-Touch P-CAP, multi-touch projective capacitance allows one to zoom in/out or rescale the display, using three or more activation points; works well with gloves and tolerates moisture. There are several mounting options: panel mount, side mount, VESA mount 75 x 75 mm and RAM mount. A quality tactical display designed to perform per mission requirements.



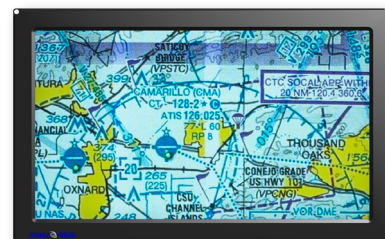
MB-10



MB-12W



MB-15



MB-15W

SUPERIOR LIGHTING & OPTICS

PICTURE-IN-PICTURE AND OVERLAY

The MB-Series contains advanced video processing that allows two images to be displayed at the same time, either as a window within the background screen or as a transparent overlay. The amount of transparency is adjustable. The overlay image can be scaled from a small window to full screen. Windows can be placed anywhere on the screen. The two images can be swapped with a single switch operation. This allows such features as transparent graphics overlaid on live video, or viewing live video with an interactive map simultaneously displayed on one screen as either PnP or side by side.



WORLD CLASS SUNLIGHT READABILITY

Combining proprietary optical cover glass coatings, index matched bonding, optimal LCD pixel patterns and 1400 to 1500nit back-light, the MB-Series exceed MIL-L-85762A sunlight contrast standards. MIL standards call for a minimum sunlight contrast of 4.6. The MB-Series typically exceeds sunlight contrast far exceeding this stringent standard. Most competitive displays advertising 1500nits and sunlight readability only achieve contrast ratios of 1.5 to 2.5 when put to the test.

SUPER FINE BRIGHTNESS CONTROL

The MB-Series provide over 3000 brightness levels in either Day or Night modes. This gives the operator the ultimate control with super fine control and wide adjustment range. Most competitive displays only provide 256 brightness levels and much less adjustment range.



MULTIPLE CONTROL OPTIONS

1 PUSH BUTTON



2 MIL-STYLE KNOB CONTROL



3 TOUCH SCREEN + PUSH BUTTON



4 TOUCH SCREEN + MIL-STYLE KNOB



MB-Series monitors can be configured by your choice of push button, MIL-Style knobs, touch screen (TS); or a combination of TS + push button controller, or TS + military style knob controller. These external controllers can be mounted anywhere in the vicinity of the display, maximizing the use of valuable panel space and accomodating the preferences of the Pilot or TFO.

DUAL MODE NVIS (OPTIONAL)

The NVIS option on the MB-Series uses an independent lighting system for NVIS that is separate from the DAY MODE lighting system. Thus, day mode provides astounding vibrant color and full chromacity without interference from an NVIS filter. Other display manufacturers that use standard NVIS filtering methods cannot display the full color range. Reds shift to orange. The MB-Series only filters color during NVIS operation which provides a desirable wide gray-scale range for NVG operation. MB-Series meet and exceed NVIS requirements of MIL-STD-3009 and each unit is fully tested.

CONTROL LIGHTING

The controls are NVIS Green A manufactured and tested in accordance with MIL-C-675 and MIL-C-14806A.

NVIS

MB-Series units meet and exceed all the requirements of MIL-STD-3009. Every unit is fully tested.

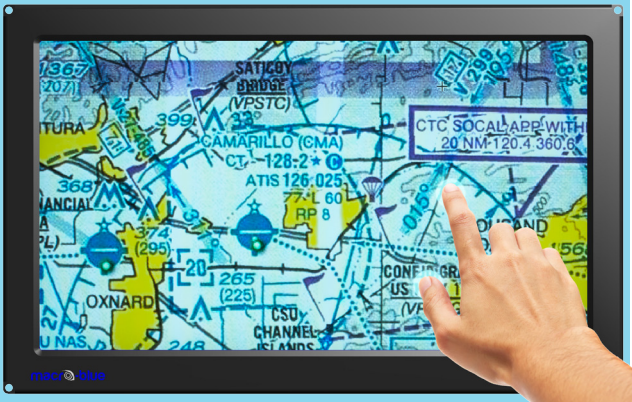
NVIS AUTOMATIC DIMMER

The NVIS backlit controls automatically dim with the brightness and mode of the display, further easing operator workload.



MULTI-TOUCH SCREEN (OPTIONAL)

An optional Touch Screen is available on the MB-Series. The screen is a Multi-touch, P-CAP, projective capacitance that works well with gloves and tolerates moisture.



ROTARY SWITCHES & DIALS (OPTIONAL)



All functions can be controlled via the front panel military style knobs. Common functions are only one click away. This avoids the “press and hold” style of settings often found with pushbutton control displays. Less often used advanced setup and adjustments are available via a 5 way rocker control. The MIL style knobs are easy to operate in turbulence. There is excellent tactile feedback even with gloved operation. Brightness control is smooth and non-linearly tapered to appear linear to the human eye. This provides the ultimate wide adjustment range; 3000:1.

INTERFACE CONFIGURATION OPTIONS



Order the interface combination that suits your mission requirements.

Examples of common configurations and total available interface types.

	Configuration 1	Configuration 2	Configuration 3	Maximum Available
Composite Video	2		4	4
SDI		2	1	2
Loop Thrus	2	2	1	2
DVID/HDMI			1	2
VGA	1	1	2	2

RUGGED & RELIABLE



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DESIGNED TO PASS THE FOLLOWING STANDARDS

- DO-160F
- MIL-STD-3009
- MIL-C-675
- MIL-C-14806A

LONG LIFE LED LIGHTING

LED backlighting is rated for 100,000 hours. We do not overdrive our LEDs.

THERMAL PROTECTION

LEDs incur permanent damage when operated at temperatures above 100C (212F). The MB-Series LEDs are conductively thermal cooled. Under rated operating conditions they do not reach these damaging temperatures. However, if operated in extreme hot conditions, the MB-Series contain thermal sensors and circuitry that automatically reduce LED currents, preventing damage.

WIDE OPERATING CONDITIONS

The MB-Series is built with special wide temperature LCD chemistry. Operation is rated for -20C (-4F) to 70C (+158F). Many competitive monitors can only operate from 0C (+32F) to 50C (+122F). They may need heaters to operate below freezing. MB-Series Internal electronics are rated for the same range, -20C (-4F) to 70C (+158F).

REVERSE BATTERY PROTECTION

MB-Series power circuits contain extra protection circuits. In addition to overvoltage protection, should a battery or ground power unit be hooked up to the airship with reversed polarity; the MB-Series will protect itself.

INDEPENDENTLY DRIVEN LED STRINGS

Each string of LEDs is provided an independent precision current source. Many competitors wire their LEDs into a combination a parallel and series current paths. Over time and due to tiny differences in each LED, some paths will draw too much or too little current causing irregular lighting and reduced LED life. Macro-Blue avoids this by precisely controlling the current to each LED. This ensures the longest life and uniform lighting.

POWER EFFICIENT

Excluding LED lighting, the MB-Series only consumes 13W of energy. Both the LEDs and electronics are conductively cooled to the aluminum bezel and chassis. The MB-Series runs so cool, that no fan is required. This avoids contamination of internal circuitry, especially around salt air or dust environments. Most competitive monitors require a fan and cooling vents.

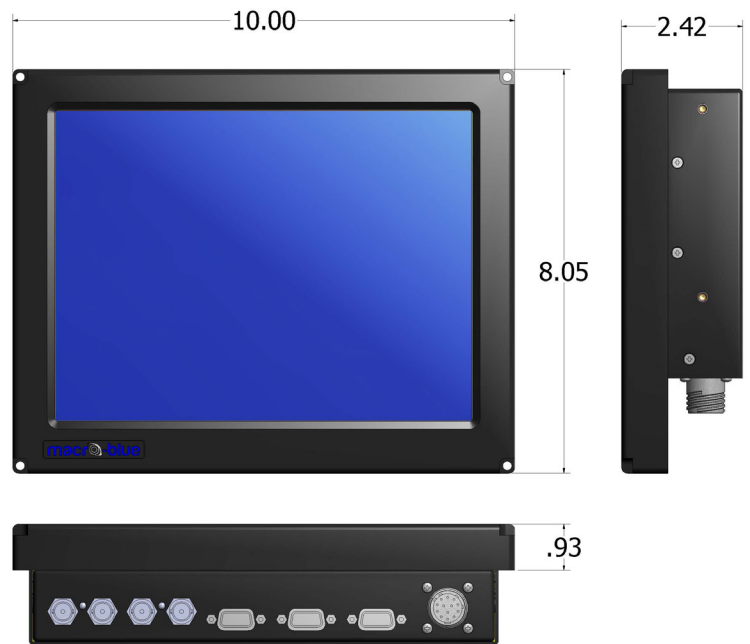
RESILIENT TO ABNORMAL CONDITIONS

While optimized for 24-28 volt operation, the MB-Series can run continuous anywhere from 10 volts up to 38 volts DC. Additionally, it continues to operate for limited periods up to 80V per DO-160 and withstands 600V power spikes. The MB-Series continues to operate without blinking during cold engine starts and severe load dumps, where others fail. If operated outside rated limits, circuitry will protect the unit during excursions from -80V to +100V.

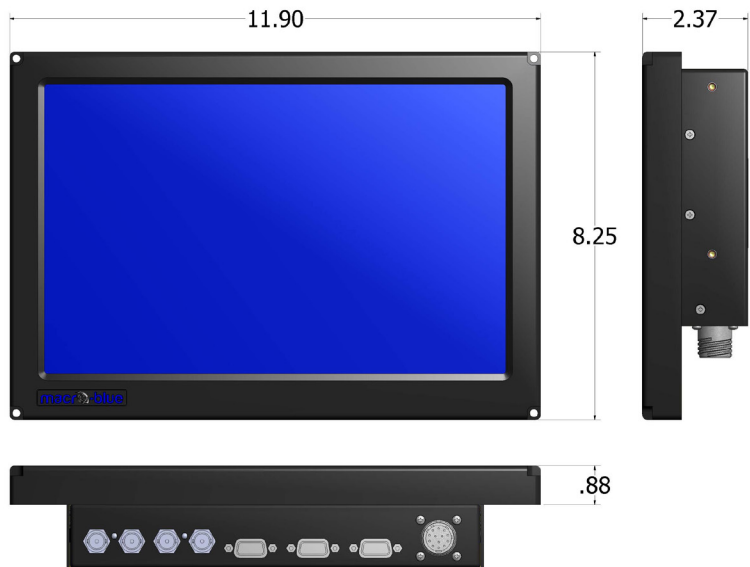
QUALITY MATERIALS

Bezel is constructed from machined billet aluminum. Chassis is all aluminum. Bezel surfaces are an extremely durable powder-coated finish.

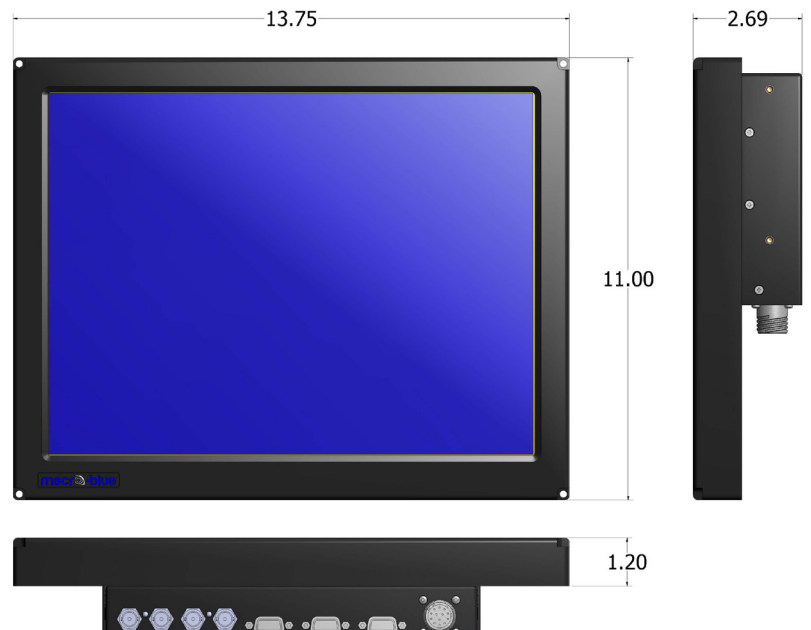
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*Macro-Blue Tactical Displays are used world-wide.
Contact us for the Macro-Blue representative in your Country.*



Represented by: **Trace Worldwide**
(United States, South America, Central America)
www.traceww.com/contact-us/

Designed for FAA Certifications

DO-160F: Section 4 — Temperature & Altitude

DO-160F: Section 5 — Temperature Variation

DO-160F: Section 7 — Crash Safety

DO-160F: Section 8 — Vibration

DO-160F: Section 15 — Magnetic Effect

DO-160F: Section 16 — Power Input

DO-160F: Section 21 — Emission of Radio FREQ

DO-160F: Section 25 — Electrostatic Discharge



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