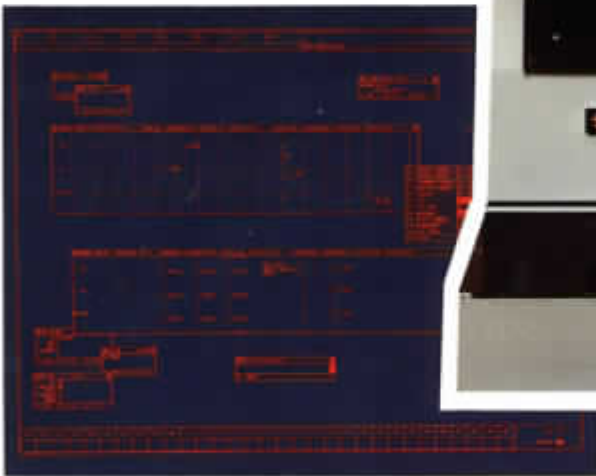# ADVANCED HIGH RESOLUTION PIXEL PLASMA DISPLAYS

Loral Librascope's plasma displays provide bright flicker-free images over a wide viewing angle. Various sizes available in military, ruggedized and commercial versions.

Sample Application Display

Display Windows and Overlays

APPLICATIONS:
- Full X-Window Support
- VxWorks Development Environment
- Intelligent Terminal
- Computer Workstation
- Fast Prototyping Platform

FEATURES:
- Fully Programmable
- TI34020 Graphics Processor
- M68030 I/O Processor
- Extensive use of VLSI
- Variable Illumination
- Monochrome, Gray Scale, and Color
- Various sizes up to 1.5 meters diagonal

LORAL
Librascope

KEY FEATURES AND OPTIONS

DISPLAY FORMAT (STANDARD)
- 24" X 17.8" display, 1728 X 1280 pixels
- 72 pixels per inch
- Various sizes also available

HIGH PERFORMANCE CHARACTERISTICS
- Update Rate 60 fps progressive scan
- Gray Scale 64 level per channel
- 262,144 Colors
- >100:1 Contrast Ratio
- Average area luminance (white)   >20 fl
- Pixel Luminance: Green   >160 fl
                     Red   >40 fl
                     Blue   >25 fl
- Viewing Angle >160 degrees
- Power Consumption <300 watts (max)

THREE NDI VERSIONS
- Mil-Spec
- Ruggedized
- Commercial

DEDICATED GRAPHICS PROCESSOR
- 4 Megabytes Video RAM
- 4 Megabytes Dynamic RAM
- 0.5 Megabyte Flash EPROM programmable in place
- Windows and Overlays
- TIGA Support
- X-Window Support

APPLICATION PROCESSOR
- VxWorks

SERIAL AND/OR PARALLEL I/O PORTS
- RS-232
- Ethernet
- NTDS
- SCSI
- Centronics
- RS-422

OPTIONS
- Touchscreen
- Pointing Device Support (Mouse or Trackmarble)
- Gray Scale
- Color

Loral Librascope's Advanced Plasma Displays are designed to meet environmental, reliability, quality, and producibility requirements utilizing Commercial Off-the-Shelf (COTS) hardware and software. Extensive use of VLSI and open system architecture on a VME card cage have been incorporated in the design to provide the ultimate combination of performance and flexibility attainable in a plasma display. These displays are already successfully in use at sea in a submarine environment.

A 32-bit Texas Instruments 34020 graphics processor provides all display functions. An industry standard graphics command set is available using the X-Windows support package, and full realtime embedded application support is provided by VxWorks. X-Windows is contained in firmware, and can support any X-Window client. Additional processors can be provided to support a specific application, maintaining a host of various environments. Four RS-232 serial I/O ports are standard, others may be added as options. A variety of keyboards are available, including those with an integrated trackball as an alternative to the mouse.

As a key advantage to any project, the plasma display enhances the software development life cycle. VADS Works enables easy integration of C and ADA with VxWorks operating systems. The VxWorks dynamic loader allows short turnaround time for testing software modifications. The available device drivers are configurable to the chosen application processes. The application software, VxWorks, and X-Windows can all be placed in ROM.

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