



# CANlink 715/716: Ultra Widescreen Displays High-Performance. High-Tech.

Designed for rugged mobile applications, HED’s newest lineup of digital displays are highly configurable with inputs, outputs, PCAP touchscreens, USB, video inputs, Ethernet and offer programming options such as Crank or BSP. Horizontal and vertical options offer unique design alternatives.

## Performance

Consistent speed for programming and digital video streaming. Superior performance delivered through standard features like NVMe drive, NPU, and the horsepower of the newest quad iMX processor.

## Technology

Multi-video display capability with 1920x720 resolution enhances safe vehicle operation and provides a superior operator interface with PCAP touchscreen for navigation and control.

## Connectivity

Stay connected with Automotive Ethernet, CAN- FD and USB options ensuring consistency, speed for programming and digital video streaming.



IP67 sealed



Touchscreen with gloves & in rain



Ultra-wide viewing angles



Shock & Vibration Resistant



Sunlight readable



-40C to +60/65C



HED specializes in the design, manufacture, and application of innovative controls and telematics systems for on- and off-highway OEMs. We provide a complete line of controllers, displays, keypads solutions.

# CANlink 715 / 716 Display | Specifications

COMPUTING CORE	
<b>Overview</b>	i.MX8M Plus Quad Core Processor running at 1.6 GHz with advanced graphics GPU and NPU up to 2.3 TOPS for AI and Edge computing
<b>CPU</b>	4x Cortex A53 @ 1.6 GHz
<b>NPU</b>	Neural Processing Unit (NPU) up to 2.3 TOPS
<b>GPU</b>	<b>3D Graphics:</b> Vivante GC7000UL high performance graphics processing unit <b>2D Graphics:</b> Vivante GC520L high performance 2D raster graphics core
<b>Flash</b>	32GB, eMMC pseudoSLC
<b>RAM</b>	2GB 32-bit LPDDR4

DISPLAY	
<b>Type</b>	IPS TFT with >85° viewing angles in all directions
<b>Cover Lens</b>	Hardened Glass with AR coating
<b>Optical Bonding</b>	Optically bonded for enhanced sunlight readability
<b>Size &amp; Resolution</b>	Ultrawide 12.3" & 15.0", 1920 x 720, 8:3 aspect ratio
<b>Color Depth</b>	24-bit, 16.7 million
<b>Contrast Ratio</b>	1000:1
<b>Brightness</b>	1000 nit (typ)
<b>Dimming</b>	Standard in 0.1% increments 0-100%
<b>Ambient Light Sensor</b>	Standard, available for automatic dimming

HMI	
<b>Touch Screen</b>	Optional Projected Capacitive (PCAP) with 2-point multi-touch for gestures. Calibrated for use with heavy gloves and wet environments.
<b>Status LED</b>	RGB LED on front of display
<b>Audio</b>	Audio Line Out/Audio Line In (req. external amplifier)
<b>Real Time Clock</b>	Yes- with internal battery (15 year life- typical)

ELECTRICAL	
<b>Operating Voltage</b>	8-32VDC
<b>Key Switch</b>	Standard for Start/Shutdown
<b>Inputs</b>	5x software configurable to switch to Battery/Ground and Analog 0-5.5V
<b>Outputs</b>	2x software configurable to 2A Sourcing Digital or PWM
<b>Conducted Transient Immunity</b>	ISO 7637-2, Pulse 1, 2a, 2b, 3a, 3b
<b>Starting Profile</b>	ISO 16750-2, Section 4.6.3
<b>Load Dump</b>	ISO 16750-2, Section 4.6.4, 40V clamped

MECHANICAL	
<b>Housing Material</b>	PC-ABS Plastic with Aluminum Heatsink (back cover)
<b>Installation</b>	Panel mounted (see dimensional drawings)
<b>Connectors</b>	1x 18-pin Deutsch DT for Power, CAN, I/O 1x USB-C for USB-C 3.0 Interface 4x M12 for USB-A, Audio Line In/Out, 2-Wire Ethernet, 8-Wire Ethernet
<b>Dimensions (mm)</b>	12" CL-715: 352.2 x 150.7 x 63.8 15" CL-716: 408.7 x 185.8 x 69.7
<b>Weight (g)</b>	12" CL-715: 3.37 lbs 15" CL-716: 5.02 lbs

INTERFACES	
<b>CAN</b>	4x CAN ports, 2 support CAN-FD up to 5Mbit/s
<b>USB</b>	2x USB, 1x USB-C 3.0 (sealable), 1x USB-A 2.0 (M12)
<b>Ethernet</b>	2x Gigabit Ethernet ports with auto-negotiate: 1x 1000Base-T1 (2-wire) 1x 1000Base-T (8-wire)

OPERATING SYSTEM	
<b>System</b>	Custom Linux system with Yocto 4.0+ (Long term support)
<b>Kernel</b>	5.15+ (Long Term Support)
<b>BSP</b>	Customer applications are created inside of an OCI compliant container (ex: Docker/Podman). Example containers are provided to help customers start their projects.
<b>Computing &amp; Graphics APIs</b>	Support for advanced UX and computing tasks possible: OpenGL ES, Vulkan, OpenCL, OpenVG
<b>Bootup Time</b>	Cold boot ~8-10 seconds

ENVIRONMENTAL SPECIFICATIONS	
<b>IP Class</b>	IP67
<b>EMC Conformity</b>	FCC Part 15 (b) and ISED Canada. 2014/30/EU – CE Mark Radiated Emissions: ISO 13766-1, EN 13309, ISO 14982 Conducted Emissions: CISPR 25, Section 6.3 (Voltage Method) Radiated Immunity: ISO 11452-2 Conducted Immunity: ISO 11452-4 (BCI method), 20-200MHz at 100mA ESD: ISO 10605, IEC 61000-4-2
<b>Vibrations</b>	IEC 60068-2-64 Random Vibration Test VII Test: Random Vibe, Freq. Range: 10-2000Hz, Level: 57.9m/s <sup>2</sup> per Figure 11 / Table 12 Duration/axis: 8hrs (32Hrs total exposure)
<b>Shock</b>	IEC 60068-2-27 Mechanical Shock Level: 500 m/s <sup>2</sup> - 6ms, Shape: Half-sinusoidal # Pulses: 100 per direction/axis (600 total shock pulses) Level: 500 m/s <sup>2</sup> - 11ms, Shape: Half-sinusoidal # Pulses: 6,000 per direction/axis (18,000 total shock pulses)
<b>Temperature Range</b>	Operating: -40C to +60C Storage: -40C to +85C

SOFTWARE FRAMEWORK & TOOLS	
<b>Development Environment</b>	Virtual machine or Native Linux
<b>Programming</b>	Supported languages include C++, C, JavaScript, Python, HTML5
<b>GCC Compiler</b>	Containers allows any GCC Compiler to be used that supports ARMv8
<b>UI Frameworks</b>	Support for Web frameworks and Crank Storyboard
<b>Windowing</b>	Wayland with Weston
<b>CAN Networking</b>	Configurable for J1939, CANopen and custom protocols
<b>Digital Video</b>	Digital IP Camera support



# CANlink 715 / 716 Display | Pinouts

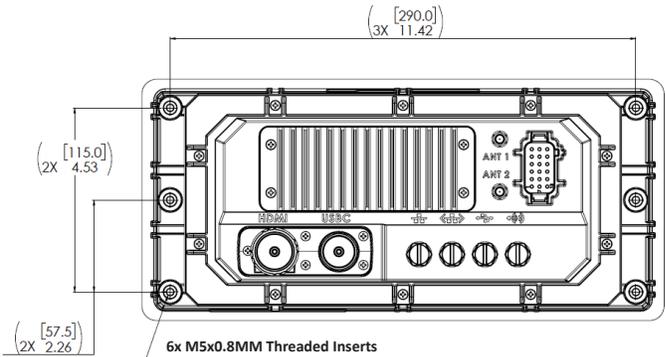
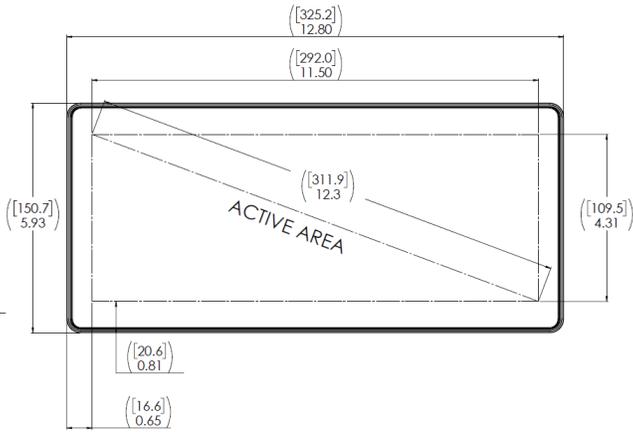
CONNECTOR A - 18 PIN DEUTSCH	
Pin 1	CAN1-H
Pin 2	CAN1-L
Pin 3	CAN2-H
Pin 4	CAN2-L
Pin 5	Battery (-)
Pin 6	Unswitched Battery (+) / Input Battery Voltage
Pin 7	CAN3-H
Pin 8	CAN3-L
Pin 9	CAN4-H
Pin 10	CAN4-L
Pin 11	Input STB Wake-up (Key Switch)
Pin 12	Input STB/STG/VTD (0-5V)
Pin 13	Output DOUT/PWM (+)(2A)
Pin 14	Output DOUT/PWM (+)(2A)
Pin 15	Input STB/STG/VTD (0-5V)
Pin 16	Input STB/STG/VTD (0-5V)
Pin 17	Input STB/STG/VTD (0-5V)
Pin 18	Input STB/STG/VTD (0-5V)
MATING CONNECTOR - DEUTSCH	
DEUTSCH	DT16-18SA-K004
Socket	(16-18) AWG-0462-201-16141 (14-16) AWG-0462-209-16141
Sealing Plug	Non-locking: 114017 Locking: 0413-217-1605
Note: Unused pins required to be sealed to maintain module sealing	

WIRE ETHERNET CONNECTOR: M12 (D-Key)			
Pin 1	TRD(+)		
Pin 2	TRD(-)		
Pin 3	not used		
Pin 4	not used		
WIRE ETHERNET CONNECTOR: M12 (A-Key)			
Pin 1	TRD(+)_D0		
Pin 2	TRD(-)_D0		
Pin 3	TRD(+)_D1		
Pin 4	TRD(-)_D1		
Pin 5	TRD(+)_D2		
Pin 6	TRD(-)_D2		
Pin 7	TRD(+)_D3		
Pin 8	TRD(-)_D3		
USB-A CONNECTOR: M12 (A-Key)	AUDIO CONNECTOR: M12 (B-Key)		
Pin 1	USB (Power)	Pin 1	Audio Line Out Left
Pin 2	USB (DM)	Pin 2	Audio Line Out Right
Pin 3	USB (DP)	Pin 3	Mic Input
Pin 4	USB (Ground)	Pin 4	Ground
MATING CONNECTOR - M12			
RAMCO M12 4 & 8 pin Female (for USB, Video) or generic			

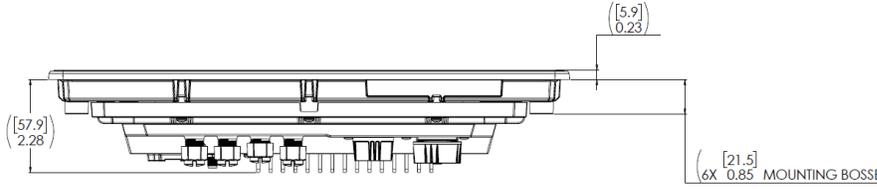


# CANlink 715 / 716 Display | Dimensions

## CL-715 Dimensions + Mounting Details



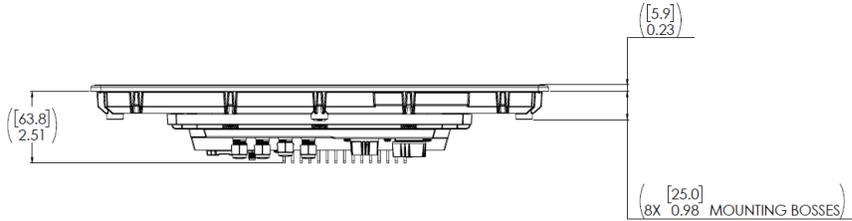
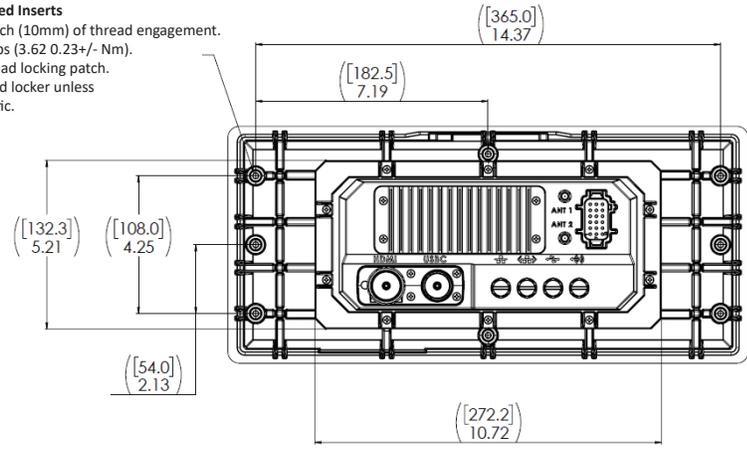
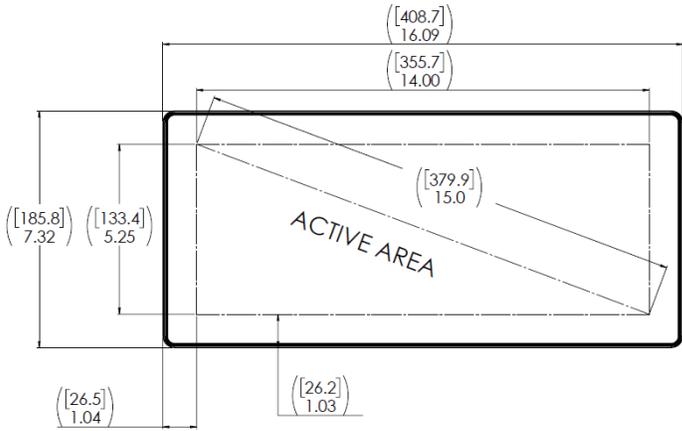
**6x M5x0.8MM Threaded Inserts**  
 Do not exceed 0.397 inch (10mm) of thread engagement.  
 Torque to: 32 +/- 2 in-lbs (3.62 0.23+/- Nm).  
 Recommend using thread locking patch.  
 Do not use liquid thread locker unless rated for use with plastic.



NOTES:  
 1. ALL [XX] ARE IN MM'S ALL OTHER DIMENSIONS ARE IN INCHES.

## CL-716 Dimensions + Mounting Details

**8x M5x0.8MM Threaded Inserts**  
 Do not exceed 0.397 inch (10mm) of thread engagement.  
 Torque to: 32 +/- 2 in-lbs (3.62 0.23+/- Nm).  
 Recommend using thread locking patch.  
 Do not use liquid thread locker unless rated for use with plastic.



NOTES:  
 1. ALL [XX] ARE IN MM'S ALL OTHER DIMENSIONS ARE IN INCHES.

