Esterline

**Control &
Communication Systems**

Esterline displays
for air traffic control

The comfort of professional visualization

The comfort of professional visualization

Esterline has been designing, manufacturing and servicing high-resolution displays for safety-critical visualization for many years. Esterline's Codis displays are designed for the ultimate user comfort and even exceed the specifications imposed by the ATC community. They offer breakthrough LCD technology at the lowest life cycle cost and offer the best optical performance (brightness, contrast and color behavior) for multi-display applications.

"The high-bright Codis MDP-471 screens help us to provide qualitative air traffic services on a 24/7 basis."

Radek Prochazka, Radar system administrator, IATCC, Czech Republic

Main display

| 4 MP | 28" SCREEN | 1:1 RATIO | WIDE VIEW |

| OSD | BLOS | 5Y WARRANTY | LED TECHNOLOGY |

MDP-471
2Kx2K LED backlit main display

Codis MDP-471 is Esterline's 2Kx2K LCD main display for ATC controller working positions. Since its introduction in 2000 until today, Codis MDP-471 is and remains the world's leading ATC display both in new installations and as a direct replacement for the Sony DDM CRT display.

The 4 MegaPixel LCD uses LED backlights, ensuring low life cycle cost, high performance, low noise, and low power consumption. Codis MDP-471 always features the latest LCD panel technologies and has real-time controlled brightness, which results in more detail, enhanced user comfort and less eye fatigue.

Key characteristics

- Flexible installation, mechanical adapter plate
- High contrast ratio & viewing angle
- Fan-less for low noise in open environment
- Lightweight & slim design
- Low power consumption
- Digital Input: 2x DVI-D DL , 2x DP
- Analog input: RGBHsVs
- Worldwide acceptance & long-term support

Resolution	2048 x 2048
Display size	28.05 inch
Pixel pitch	0.246 x 0.246 mm
Brightness	150 cd/m² calibrated and stabilized
Contrast ratio	1500:1 typical, 1200:1 minimum
Viewing angle	178° typ.
Dimensions	Various models (see technical specification)
Dimming ratio/low brightness	50:1 in calibrated mode
Power consumption	41 W @ 150 cd/m²; 31 W @ 70 cd/m² - typical use case; 1,2 W @ low power DPMS; 0,25 W @ low power standby

Ideal for:

- Air Traffic Control centers
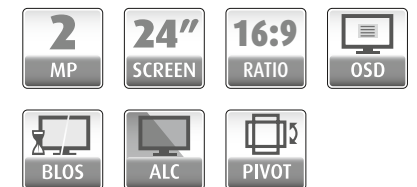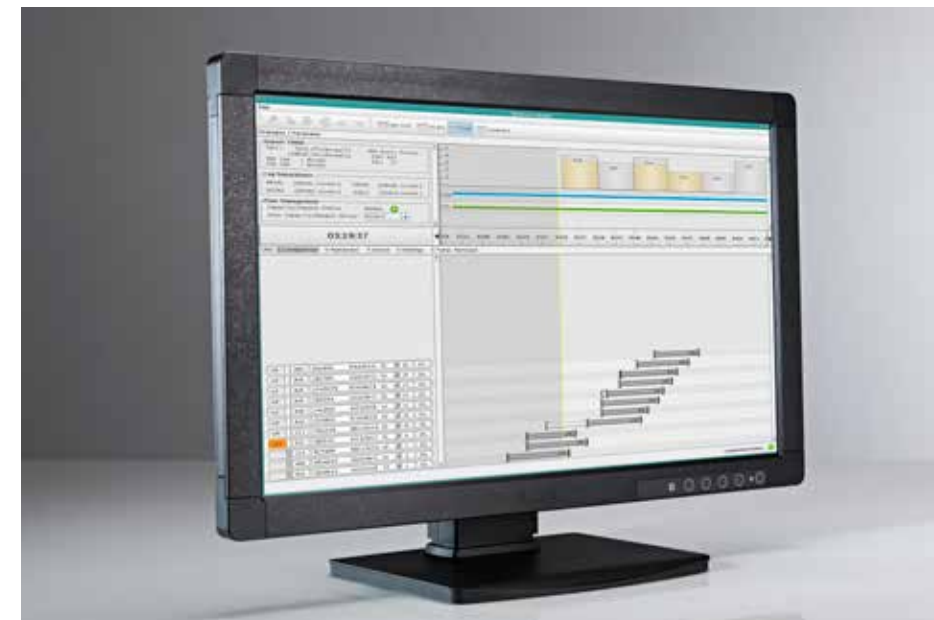- Analog ATC display replacements
- Technology insertion

Tower display

TCD-361/LED
24" high-brightness tower display

Esterline's Codis Tower Control Display presents the most detailed information with superior image quality at all times and hereby significantly reduces eye fatigue. Offering high brightness during daytime, as well as low dimming in darker conditions, Esterline's Codis tower display delivers a stunning performance.

Key characteristics

- Full color HD (1920 x 1080) resolution
- Long-life, power-efficient LED backlights
- 16:9 aspect ratio
- 600 cd/m² stabilized brightness
- Backlight output stabilization technology
- Ambient light compensation technology
- Fan- and noiseless
- Viewable under all circumstances

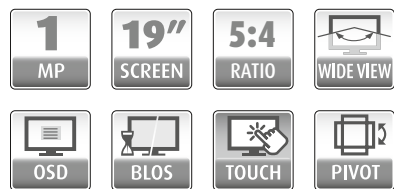| 2 MP | 24" SCREEN | 16:9 RATIO | OSD |

| BLOS | ALC | PIVOT |

Auxiliary displays

The growing reliance on advanced software tools in today's ATC and ATM environments creates a need for more diverse HMI display surfaces. That is why Esterline's Codis series of auxiliary displays offers extra visualization capabilities with respect to display size and resolution.

MDRC-1119 ATM/TS
19" 1MP auxiliary display with optional touch screen interface
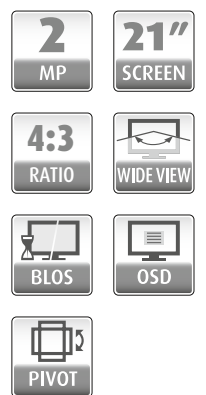
Key characteristics

- 1280 x 1024 resolution
- 5:4 aspect ratio
- Backlight output stabilization technology
- Allows for easy integration into consoles
- Optional protective front cover
- MDRC-1119 ATM/TS: with user-friendly touch screen interface

1 MP	**19"** SCREEN	**5:4** RATIO	WIDE VIEW
OSD	BLOS	TOUCH	PIVOT

MDRC-2221 ATM
21" auxiliary display

Key characteristics

- 1600 x 1200 resolution
- 4:3 aspect ratio
- Backlight output stabilization technology
- Easy integration
- Unique, slim design with low weight and mechanical flexibility
- Worldwide acceptance

2 MP	**21"** SCREEN
4:3 RATIO	WIDE VIEW
BLOS	OSD
PIVOT	

MDRC-2224 ATM
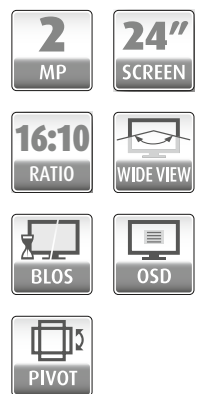**24" auxiliary display**

Key characteristics

- 1920 x 1200 resolution
- 16:10 aspect ratio
- Backlight output stabilization technology
- Easy integration
- Unique, slim design with low weight and mechanical flexibility
- Worldwide acceptance

2 MP	**24"** SCREEN
16:10 RATIO	WIDE VIEW
BLOS	OSD
PIVOT	

Overview

	MDP-471/4	TCD-361/LED		MDRC-1119/TS	MDRC-2221 ATM	MDRC-2224 ATM
Diagonal	28.05"	24"		19"	21.3"	24.1"
Screen technology	LCD IPS-Pro - Edge led backlight	TFT color LCD - Edge LED backlight		TFT color LCD	TFT color LCD	TFT color LCD IPS
Active screen size	503.8 x 503.8 mm	19.83 x 19.83"	531.4 x 298.9 mm	20.9 x 11.8"	301 x 376 mm	11.85 x 14.80"	432 x 324 mm	17 x 12.76"	518.4 x 324 mm	20.41 x 12.76"
Aspect ratio	1:1	16:9		5:4	4:3	16:10
Native resolution	2048 x 2048	1920 x 1080		1280 x 1024	1600 x 1200	1920 x 1200
Pixel pitch	0.246 x 0.246 mm	0.277 x 0.277 mm		0.294 x 0.294 mm	0.270 x 0.270 mm	0.270 x 0.270 mm
Viewing angles (H,V)	178° typ.	178°/ 178°		178°	178°	178° (IPS)
Brightness (stabilized maximum white)	150 cd/m² (max > 400 cd/m²)	600 cd/m² (max > 700 cd/m²)		180 cd/m² (max typ 300 cd/m²)	250 cd/m² (max typ 440 cd/m²)	180 cd/m² (max typ 300 cd/m²)
Contrast ratio	1500:1 typical, 1200:1 minimum	5000:1		1300:1	1500:1	1000:1
Dimming ratio/low brightness	50:1	> 100:1				40 cd/m²
Video input signals	2x DVI-D Dual Link, 2x DP, analog RGBHsVs	DVI, DP		DVI, VGA	DP, DVI	VGA, DP, HDMI
BLOS (sensor)	Yes	Yes		Yes	Yes	Yes
Dimensions	Without Stand: 561 x 585 x 131 mm	Without Stand: Landscape: 592 x 359 x 40 mm		Without Stand: Landscape: 418 x 346 x 70 mm	Without Stand: Landscape: 484 x 376 x 75.93 mm	Without Stand: Portrait: 366 x 560.4 x 59.82 mm
Ambient light compensation	No	Yes		No	No	No
Protective front	Yes, various front glasses possible	No		Optional	Optional	Optional
Power consumption	41 W @ 150 cd/m² 31 W @ 70 cd/m² - typical use case 1,2 W @ low power DPMS 0,25 W @ low power standby	75 W max @ 600 cd/m² 7 W max @ sleep mode 0,9 W @ off stand by		35 W nominal DPMS support	23 W nominal < 1.0 W @ off stand by DPMS support	40 W nominal < 1.0 W @ off stand by DPMS support
Touch screen	No	No		Optional	No	No
Power requirements	110 & 230 V (nominal); operates between: 90-264 Vac & 47-63 Hz				100-250 V (nominal)	100-240 V (nominal)

Icons explained

1:1 RATIO	Screen aspect ratio of 1:1	**21"** SCREEN	21-inch screen diagonal
4:3 RATIO	Screen aspect ratio of 4:3	**24"** SCREEN	24-inch screen diagonal
5:4 RATIO	Screen aspect ratio of 5:4	**28"** SCREEN	28-inch screen diagonal
16:9 RATIO	Screen aspect ratio of 16:9	ALC	Integrated ambient light compensation
16:10 RATIO	Screen aspect ratio of 16:10	BLOS	Backlight output stabilization (BLOS) on board
1 MP	1 MegaPixel resolution	LED TECHNOLOGY	LED technology
2 MP	2 MegaPixel resolution	OSD	On screen display
4 MP	4 MegaPixel resolution	PIVOT	Usable in portrait and landscape mode
5Y WARRANTY	5 year warranty	TOUCH	Touch screen interface
19" SCREEN	19-inch screen diagonal	WIDE VIEW	Exceptionally wide viewing angle

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Communication Systems

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20,000 air traffic controllers rely on Esterline every day

In major airports all over the world, teams of air traffic controllers work around the clock tirelessly to guarantee minimum separation and guide aircraft safely and efficiently to their destination. With a worldwide installed base of over 12,000 display products, 20,000 air traffic controllers use Esterline visualization every day to ensure the safety of air passengers.

About Esterline

Esterline Corporation is a leading global supplier to the aerospace and defense industry specializing in three core areas: Avionics & Controls, Sensors & Systems, and Advanced Materials. The company employs approximately 12,000 people and operates manufacturing facilities in over a dozen countries worldwide. Esterline is headquartered in Bellevue, Wash., and trades on the New York Stock Exchange under the symbol ESL.

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