

# IP Based Forward Facing Camera For Rolling Stock



eyeTrain is designed to rail group standards, and incorporates the very latest in video, storage and communications technology.  
The eyeTrain range offers a variety of high performance image technologies matched to the harsh environment of rolling stock applications, providing the highest performance and resilience on the market.



## Specifications

### General

Type	IP Camera for Rolling Stock Use
Form Factor	Box type (steel) intended for use in secondary enclosures
Part Number	FFC-ST-397
Approximate Dimensions	73 mm (W) x *95.2 mm (D) x 76 mm (H) (*Add 7 mm for the lens)
Weight	0.4 kg

### Sensor

Type	1/2.8" Progressive Scan CMOS Sensor
Dynamic Range	WDR >120 dB
Signal to Noise Ratio	>50 dB
Sensitivity	0.001 lux min illumination (F1.2, Colour)
Resolution	2 M pixel
Lens	M12 thread, focal length as below. Other focal lengths on request.

### Viewing Angle

Focal Length	Horizontal Angle	Vertical Angle
8 mm	38.3 °	22.1 °

### Data Transmission

Communications Protocol	Ethernet TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE Dual Stream
Compression	MJPEG, H.264, 32 Kbps to 16 Mbps CBR / VBR
Video Frame rate	Up to 25 fps
Video Resolution	720p and 1080p

### Environmental

Temperature Range	-25 °C to +55 °C (Operational T1)
Ingress Protection	IP65

... a level of runtime  
stability and resilience  
not normally associated  
with high technology  
systems...

IP Based  
Forward Facing  
Camera  
For Rolling Stock



Electrical

Power Consumption  
Power Supply

4 W max  
PoE, 802.11af Mixed DC & Data (Mode A)

Connectivity

Connector  
Type

M12 Female D-Coded  
Fixed

Connections

Pin	Signal
1	Tx Data +
2	Rx Data +
3	Tx Data -
4	Rx Data -

Standards Compliance

Shock & Vibration  
Ingress Protection  
Cooling  
Dry Heat  
Low Temp Storage

EN50155:2007, 12.2.11 EN61373:2010  
EN60529:1992  
EN50155:2007, 12.2.3 EN60068-2-1:2007 Test Ad  
EN50155:2007, 12.2.4, EN60068-2-2:2007 Test Bd  
EN50155:2007, 12.2.14, EN60068-2-1

Earth Bonding

EN50155:2007

Conducted Emissions  
Radiated Emissions  
Radiated Susceptibility  
Conducted Susceptibility  
Fast Transient Burst Sus.

EN50155:2007 12.2.8.2, EN50121-3-2:2015, EN55011:2009 +A1:2010  
EN50155:2007 12.2.8.2, EN50121-3-2:2015, EN55011:2009 +A1:2010  
EN50155:2007, 12.2.8.1, EN50121-3-2:2015, EN61000-4-3:2006 +A1:2010  
EN50155:2007, 12.2.8.1, EN50121-3-2:2015, EN61000-4-6:2009  
EN50155:2007, 12.2.7.3, EN 50121-3-2:2015, EN61000-4-4:2004 A1:2010

... a level of runtime  
stability and resilience  
not normally associated  
with high technology  
systems...