PULNiX
IMAGING PRODUCTS

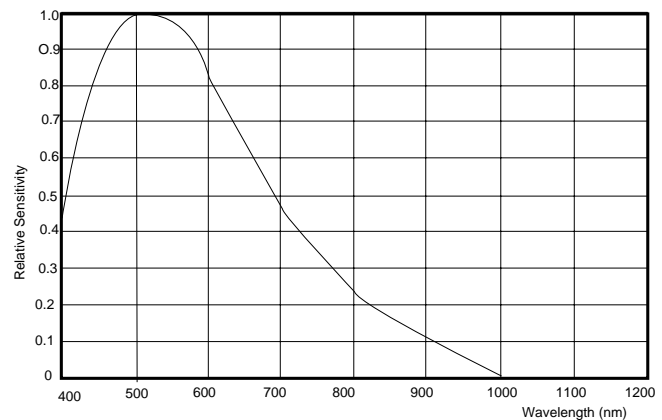# TM-72EX / TM-62EX 2/3" FORMAT B/W MINI CCD CAMERA

Product Features

- High efficiency 2/3" interline transfer CCD with micro lenses
- High resolution

  768(H) x 493(V) resolution (RS-170)
  758(H) x 581(V) resolution (CCIR)
- Mini size, ruggedized construction
- Shutter from 1/60 to 1/10,000 sec.
- External adjustments for gain, gamma, AGC, and field-frame select
- Three year warranty

High Performance in a Small Package

The TM-72EX/TM-62EX camera has all the advantages of a large 2/3" format CCD, within a tiny, robust package. Virtually identical in features and function to the popular PULNiX TM-7EX/TM6EX (1/2" CCD) camera, the TM-72EX/TM-62EX also delivers the superior light gathering ability of the larger format CCD. In fact, pixel resolution is the highest offered for the standard RS-170/CCIR (TM-62EX) television scanning systems. Users with existing optics built to the 2/3" format can easily upgrade to this smaller but high-performance CCD camera.

Rugged Construction

The TM-72EX/TM62EX casing is wholly constructed of metal for ruggedness. Inside, each of the miniature circuit cards uses extensive surface mount technology to withstand the inertia and vibration consistent with industrial applications. These cameras have been engineered to eliminate failures due to excessive or constant motion. The small size eliminates the complicated tie-down required with bulkier cameras. PULNiX offers the mating "CLS" series of high-quality miniature lenses for use in tough environments. These lenses feature aperture detents and precision construction to stand up against vibration.

Flexible Applications

Like its widely-used twin, the TM-7EX/TM-6EX 1/2" model, the TM-72EX/TM-62EX is a preferred choice for machine vision and automated inspection applications. Ruggedness makes it equally well suited for use in military or construction vehicles, aircraft, shipboard, for surveillance, microscopes and medical imaging, remote-piloted vehicles, test and process monitoring, remote inspection, and traffic monitoring.

Easy to Use

The TM-72EX/ TM-62EX camera is easy to install and use. The miniature size permits mounting in very confined spaces, eliminating the need for a remoted imager or similar two-piece arrangement. Cameras can be mounted from the top or bottom. Adjustment controls for gamma, gain, AGC and field-frame select are readily accessible on the rear of the cameras for added convenience.

Video output is via a standard BNC connector, or may be output via the connector used for the camera sync and power. This allows all camera I/O functions to be bundled within a single interconnect cable for simplicity and added reliability. Provision also is made for driving automatic iris lenses. A standard "C" lens mount is adjustable for critical back focus. Most commercial frame grabbers are compatible with these cameras.

Spectral Response

TM-72EX/62EX

PULNiX

High Speed Shutter

The TM-72EX/TM-62EX camera features an electronic shuttering capability which allows crisp images of moving objects to be captured. Eight shutter speeds ranging up to 1/10,000 sec. are easily selected using the SC-745 shutter controller included with each camera. The SC-745 plugs into the 6-pin connector on the rear of the camera. Shutter speeds are selected by simply rotating a multi-position switch.
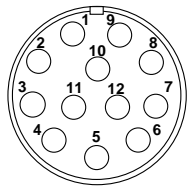
Manual Shutter Control	
Mode	
0	1/60
1	1/125
2	1/250
3	1/500
4	1/1,000
5	1/2,000
6	1/4,000
7	1/10,000
8	N/C
9	N/C

Note: Several standard options such as IR filters, glassless imagers, and external pixel clock input and output are available for the TM-72EX and TM-62EX. Refer to the current PULNiX price list or contact your closest PULNiX sales representative for additional information on availability of standard options. Customized versions are available in OEM quantities.
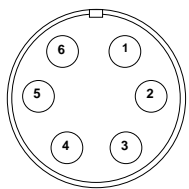
Specifications

Model	TM-72EX (EIA)	TM-62EX(CCIR)
Imager	2/3" interline transfer CCD, HAD type	
Pixel	768 (H) x 493 (V)	758 (H) x 581 (V)
Cell size	11 µm x 13 µm	11.6 µm x 11.2 µm
Scanning	525 lines 60Hz, 2:1 interface	625 lines 50Hz, 2:1 interface
Sync	Internal/external auto switch	
	HD/VD, 4.0 Vp-p impedance 4.7KΩ	
	VD=interlace/non-interlace	
	HD=15.734KHz±5%	
TV resolution	570 (H) x 350 (V)	
S/N ratio	50dB min. (AGC off), 56dB typical	
Min. illumination	0.5 lux f=1.4 without IR cut filter	
Video output	1.0 Vp-p composite video, 75Ω	
AGC	ON/OFF (Back plate switch)	
Gamma	0.45/1.0 (Back plate switch)	
Lens mount	C-mount (adjustable)	
Power req.	12V DC, 350mA	
Operating temp.	-10°C to 50°C	
Vibration & shock	Vibration: 7G (200 Hz to 2000 Hz) Shock: 70G	
Size (W X H X L)	45.8mm x 39.4mm x 79.0mm	
	1.80" x 1.55" x 3.11"	
Weight	190 grams	
Power cable	12P-02	
Power supply	DC-12N or PD-12	
Auto iris connector	PC-6P	

Pin Configurations

12-Pin Connector

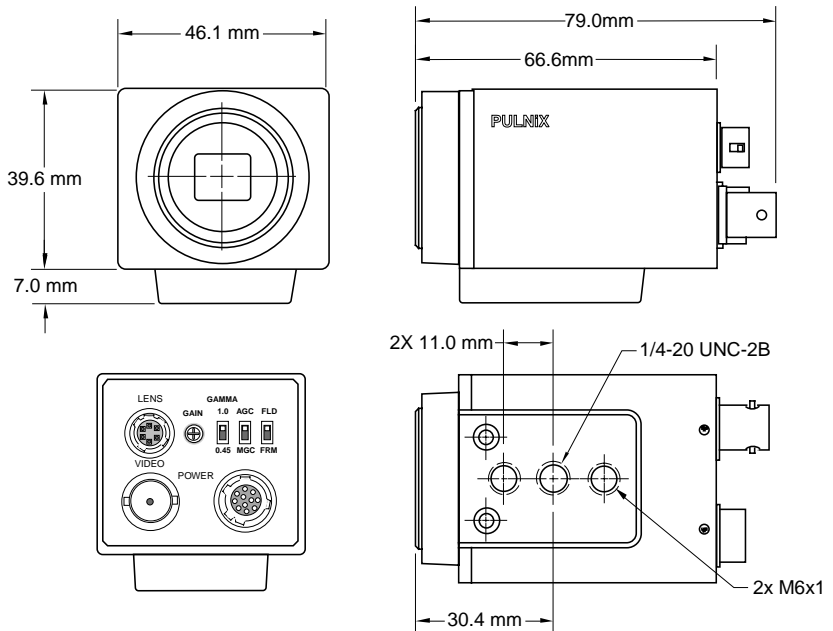| 1	GND	7	VD in
2	+12V	8	GND
3	GND	9	HD in
4	Video	10	N/C
5	GND	11	Int. cont
6	Vinit	12	GND

6-Pin Connector

1	D2
2	GND
3	Video
4	+12V (or 5V)
5	D0
6	D1

D0, D1, D2 Shutter control

Physical Dimensions

46.1 mm
39.6 mm
7.0 mm
79.0mm
66.6mm
2X 11.0 mm
1/4-20 UNC-2B
2x M6x1
30.4 mm

LENS   GAMMA
GAIN   1.0 AGC FLD
0.45   MGC FRM
VIDEO
POWER