

### Features

- High resolution (460 horizontal TV lines)
- High sensitivity complementary color filter
- Super mini size (42 W x 32 H x 130 L mm)
- NTSC/PAL and Y/C (S-VHS) output
- 1/60 to 1/10,000 sec. shutter and integration (Op.)
- Wide dynamic range and excellent S/N ratio
- AGC on-off, auto white balance on-off, AWB memory or auto-tracking (Op.)

### General Description

The TMC-7 is a high resolution camera that offers the user outstanding color fidelity and full, broad-band response for high resolution color applications. This camera is excellent in applications such as teleconferencing, machine vision, object recognition, medical research, process monitoring, airborne imaging and remote observation. Low light sensitivity is 5 lux at f/4. The TMC-7 offers many standard features in a compact package including VBS, Y/C or S-VHS, high speed variable shutter (1/60 sec. to 1/10,000 sec.), TTL (through-the-lens) auto/manual white balance, AGC on/off switch, and manual gain and hue controls. The popular remote head configuration (one meter standard) is available by option.

The integration option for the TMC-7 allows the CCD imager to be exposed longer than normal TV timing (16.7 msec.). This feature provides added sensitivity for dark environment applications such as video microscopy.

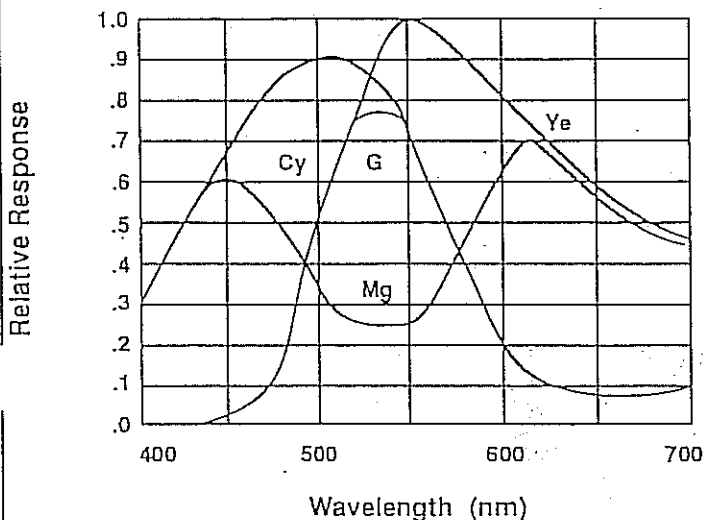
### Electronic Shutter

The TMC-7 has a substrate drain type shutter mechanism which provides a superb picture at various speeds without smearing. The substrate drain vertically moves the charges. When excess potential is applied to the substrate underneath each cell, a potential barrier is pulled down to release the charge into the drain. This can occur in all the cells simultaneously, whereas normal CCD shuttering is done with a horizontal charge shift to the drain by interline transferring or reverse transferring of the frame transfer chip.

The capability to externally vary the electronic shutter rate from 1/60 to 1/10,000 sec. is a standard feature of this camera. Shuttering eliminates the need for costly and distracting strobe lights on a high speed assembly or inspection line.

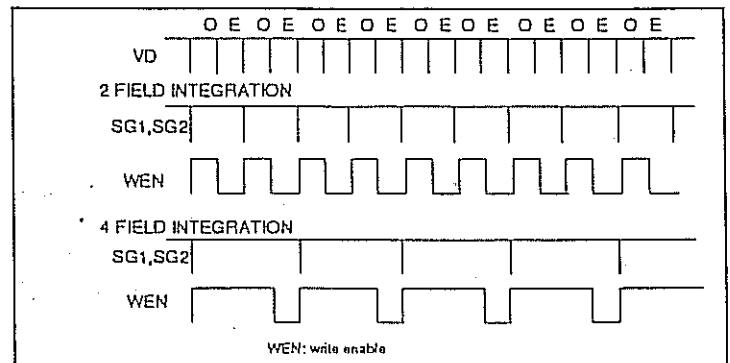
NOTE: The TMC-7 shutter control is slightly different from other PULNiX cameras. D0, D1, and D2 are activated by connecting to low (GND). Use the SC-7 shutter controller.

TMC-7 Spectral Response



### Integration Control

The TMC-7 has a built-in integration option of up to 16 fields of integration in order to increase exposure time. This option can be externally controlled. A write enable output is provided for the integration period and video out field signal.

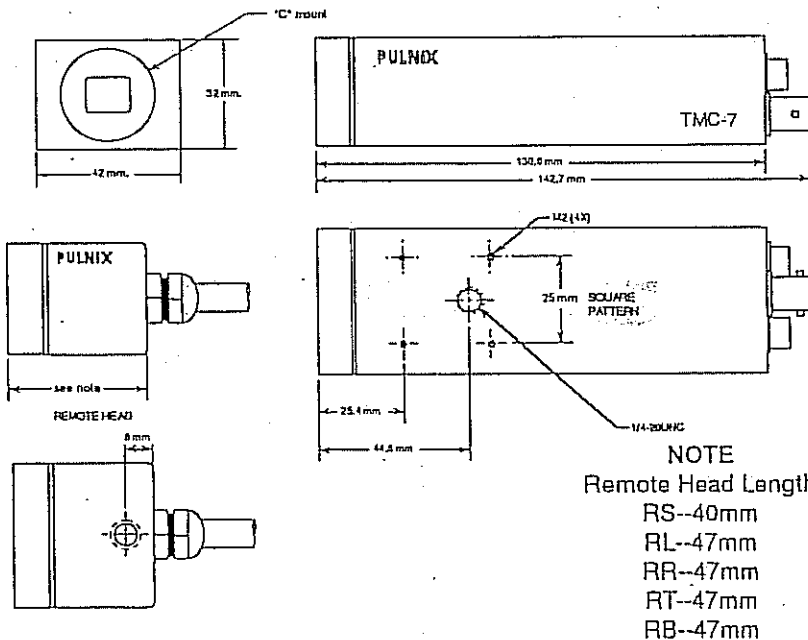


# Specifications

Model	TMC-7 (NTSC)	TMC-6 (PAL)
Imager	1/2" interline transfer CCD (6.4 x 4.8 mm)	
Pixel	768(H) x 494(V)	752(H) x 582(V)
Cell size	8.4µm(H) x 9.8µm(V)	8.6µm(H) x 8.3µm(V)
Color filter	Cy, Ye, Mg, G complementary color filter	
Scanning	2:1 interlaced, field mode scanning	
	525 lines, 59.94 Hz	625 lines, 50 Hz
Sync	Internal sync only	
	fH = 15.734 KHz fV = 59.94 Hz	fH = 15.625 KHz fV = 50.00 Hz
TV resolution	460(H) x 400(V) TV lines	450(H) x 450(V) TV lines
S/N ratio	50 dB (AGC off)	
Min. Illumination	5 Lux F = 1.4 (AGC on)	
Video output	VBS = 1.0 Vp-p at 75 Ω (NTSC and PAL) Y (B/W) = 1.0 Vp-p with sync, Chroma = 285 mV at 75 Ω (Y/C or S-VHS)	
Color balance	Through-the-lens auto white balance: memory (std) or auto-tracking (option) and manual hue adjustment	
AGC	Max. 32 dB AGC, on-off switchable, manual gain control	
Gamma	0.45	
Lens mount	C-mount	
Power req.	12 V DC, 320 mA	
Operating temp.	-10°C to +50°C	
Vibration & shock	Vibration: 7 G (11Hz to 200Hz), Shock: 70G	
Size (W X H X L)	42 x 32 x 130 mm 1.65" x 1.26" x 5.12"	
Weight	210 grams (7.3 oz)	
Power cable	12P-02 for NTSC/PAL and Y/C, KC-10 for NTSC/PAL only	
Power supply	12VDC, 500mA	
Auto Iris connector	Auto Iris lens output and shutter control (SC-7)	
Functional options	Up to 16 fields integration output, auto-tracking white balance	
Accessories	SC-7 shutter control, C-mount mini lenses	

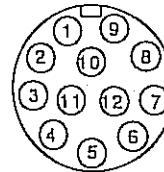
Due to ongoing product improvements, specifications may change without notice.

## Physical Dimensions



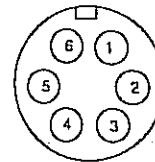
## Pin Configuration

### 12-Pin Connector



- 1 GND
- 2 +12 V IN
- 3 GND
- 4 VIDEO OUT (VBS)
- 5 GND
- 6 N/C
- 7 CHROMA
- 8 GND
- 9 Y (B/W VIDEO)
- 10 N/C
- 11 N/C
- 12 N/C

### 6-Pin Connector



- 1 D2
- 2 GND
- 3 IRIS (VIDEO)
- 4 +12 V OUT
- 5 D0
- 6 D1

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