

# TM-200NIR/TM-300NIR High-Resolution CCD Camera

**PULNiX**  
Imaging Products

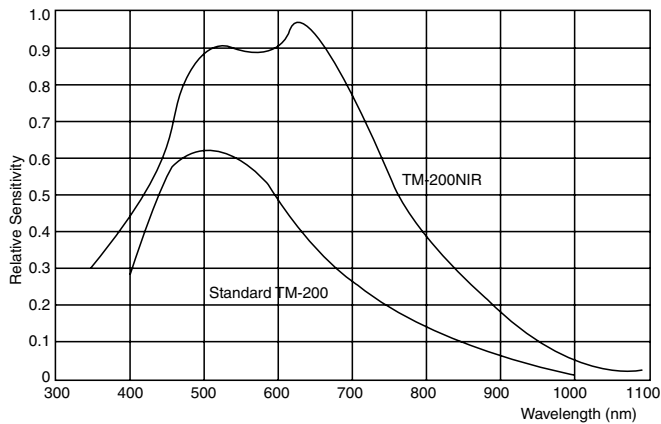


## General Description

The TM-200NIR/TM-300NIR camera offers high performance with excellent near-IR sensitivity in a very tiny package, at a very affordable price. Designed to meet a variety of rugged industrial application requirements, this camera has many standard and optional features. It is available in both EIA (TM-200NIR) and CCIR (TM-300NIR) formats.

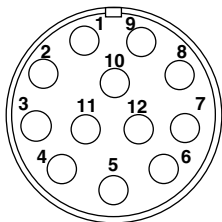
The most commonly needed adjustments, namely manual gain, gamma, AGC, and field/frame selection, are easily accessible on the rear camera panel. Electronic shuttering is provided as a standard feature. Eight shutter speeds, ranging from 1/60 sec. to 1/10,000 sec., can be selected externally using the rotary switch on the rear panel.

The miniature size of the TM-200NIR/TM-300NIR camera eliminates the need for a remoted imager. These cameras fit easily, both physically and functionally, into all types of machine vision, automated inspection, and related applications. Other uses include IR strobe, LED/Laser detection, failure analysis, remotely piloted vehicles, miniature inspection devices, surveillance, microscopes and medical equipment.



TM-200NIR Spectral Response vs. TM-200 standard

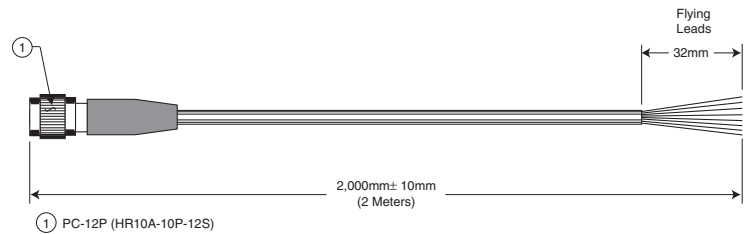
## 12-pin Connector on Rear Panel



## Product Summary

- High resolution, 1/2" format CCD  
TM-200NIR: 768 H x 494 V (EIA)  
TM-300NIR: 752 H x 582 V (CCIR)
- Advanced near-IR sensitive interline transfer CCD
- Shutter from 1/60 to 1/10,000 sec.
- Externally adjustable MGC, AGC, shutter, gamma, and field/frame select
- External sync with low jitter PLL
- Super mini size
- Input voltage 11-15V DC, 2.5W

## Connectors and Cables



## 12P-02S Interface Cable (optional)

Pin#	Lead Color	Function
1	Gray	GND
2	Yellow	+12VDC
3	Red coax shield	GND
4	Red coax	Video
5	Orange coax shield	GND
6	Orange coax	N/C
7	Black coax	VD Input
8	White coax shield	GND
9	White coax	HD Input
10	Brown	N/C
11	Blue	Integration
12	Black coax shield	GND

TM-200NIR/TM-300NIR

# TM-200NIR/TM-300NIR High-Resolution CCD Camera

## Product Specifications

Model	TM-200NIR (EIA)	TM-300NIR (CCIR)
Imager	1/2" Interline transfer CCD	
Pixel	768 (H) x 494 (V)	752 (H) x 582 (V)
Cell size	8.4 $\mu\text{m}$ x 9.8 $\mu\text{m}$	8.6 $\mu\text{m}$ x 8.3 $\mu\text{m}$
Scanning	525 lines EIA	625 lines CCIR
Sync	Internal/External auto switch	
	$fH=15.734\text{KHz} \pm 5\%$ $fV=59.94\text{Hz} \pm 5\%$	$fH=15.625\text{KHz} \pm 5\%$ $fV=50\text{Hz} \pm 5\%$
Pixel clock	14.318 MHz	14.188 MHz
TV resolution	570 (H) x 350 (V)	560 (H) x 420 (V)
S/N ratio	50dB min., 56dB typical	
Min. illumination	0.25 lux (F=1.4)	
Video output	1.0 Vp-p composite video, 75 $\Omega$	
AGC	ON/OFF back panel switch	
Gamma	1 or 0.45 back panel switch	
Lens mount	C-mount, back focus adjustable	
Power req.	190 mA, 11-15V DC	
Operating temp.	-10° C to +50° C	
Vibration & shock	Vibration: 7 Grms (10-2000 Hz), Shock: 70G	
Size (W x H x L)	45.8mm x 39.4mm x 66.3mm 1.81" x 1.54" x 2.60"	
Weight	157g (5.6 oz.)	
Functional options	3-1: Internal IR Filter added, 3-2: Optical Filter Removal, 7-2: Pixel Clock Out, 21: Glassless, 25: SONY Pinouts	
Accessories	See current price list	
Power cable	12P-02S (optional)	
Power supply	K25-12V, PD-12UU, PD-12UE, PD-12UUP, PD-12UEP	

## Shutter Speeds

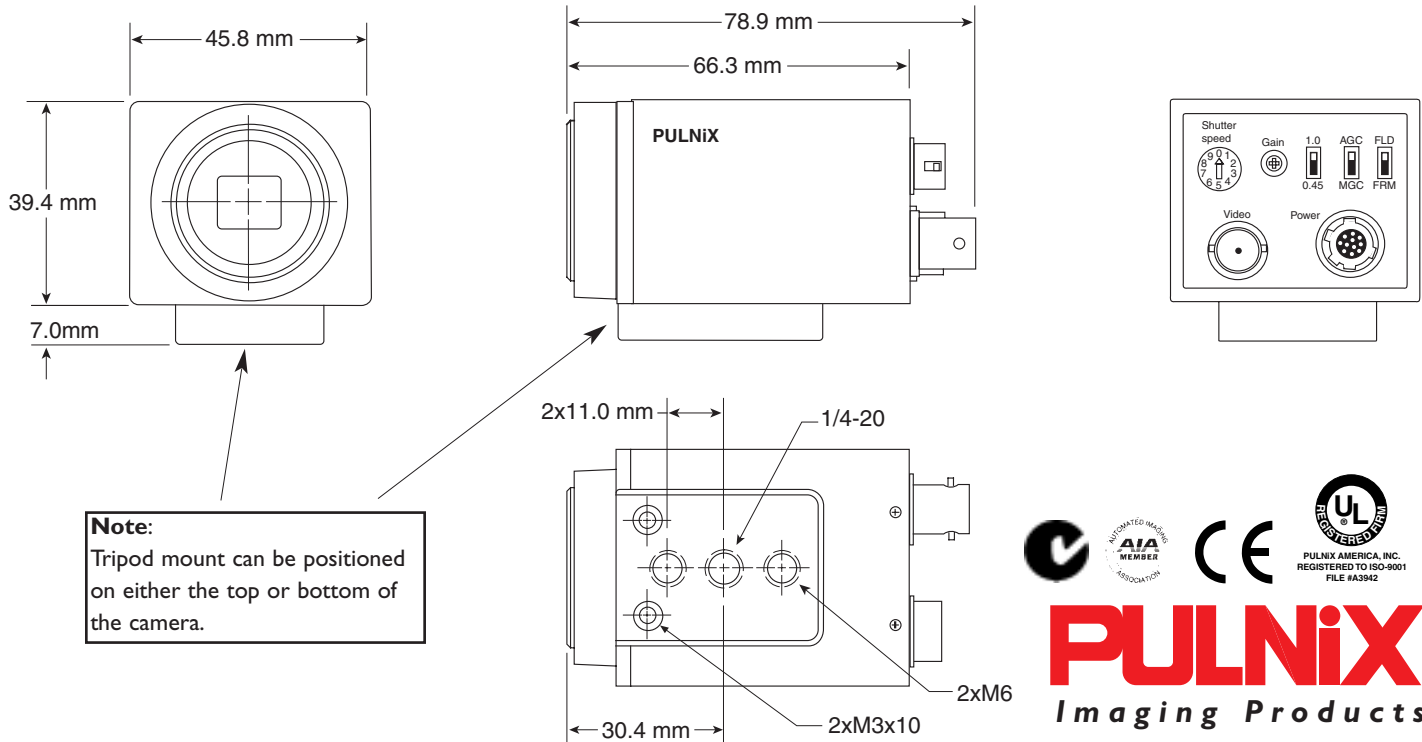
### Manual Shutter Control

Shutter Positions	TM-200NIR		TM-300NIR	
	Shutter Speed		Shutter Speed	
0	1/60 (field mode)	No Shutter	1/50 (field mode)	No Shutter
	1/30 (frame mode)		1/25 (frame mode)	
1	1/125	131H	1/120	131H
2	1/250	63H	1/250	63H
3	1/500	31H	1/500	31H
4	1/1,000	16H	1/1,000	16H
5	1/2,000	8H	1/2,000	8H
6	1/4,000	4H	1/4,000	4H
7	1/10,000	1.5H	1/10,000	1.5H
8	Same as shutter position 0		Same as shutter position 0	
9	Same as shutter position 1		Same as shutter position 1	

### Note:

Shutter Position 0 = Normal Mode  
 Shutter Positions 1-4 = Fast Mode  
 Shutter Positions 5-7 = Slow Mode  
 One (1) H = 63.5  $\mu\text{secs}$  (TM-200NIR only)  
 One (1) H = 64  $\mu\text{secs}$  (TM-300NIR only)

## Dimensions



71-0031 Rev. D  
 TM-200NIR/TM-300NIR



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