

## ❖ **TM-1325 CL / TMC-1325 CL** Progressive Scan CCD



- *2/3" high resolution progressive scan IT CCD imager (ICX285AL/ICX285AQ)*
- *1392(H) x 1040(V) @ 30/15 fps*
- *6.45  $\mu$ m square pixels*
- *Compact 44 x 44 x 63 mm housing*
- *LVDS versions: order TM-1325 and TMC-1325*
- *Digital output and analog output*
- *Maximum dynamic range control with built-in look-up table (LUT)*
- *Full frame integration for long exposures*
- *Image center partial scan (500, 250 lines)*
- *Full-frame shutter to 1/16,000 sec.*
- *Asynchronous reset, no-delay shutter with pulse-width exposure control*
- *Read-out-inhibit control for multiple-camera applications*
- *RS-232 external control*
- *Near IR sensitivity and high gain CCD output*
- *Monochrome or color*



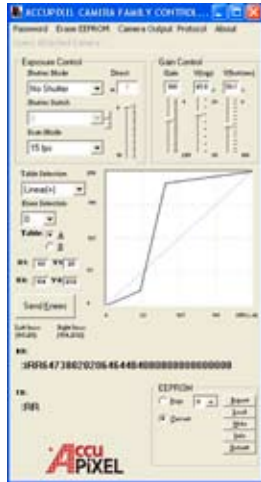
# Specifications for TM-1325CL/TMC-1325CL

| Specifications            |                   | TM-1325CL/TMC-1325CL   |
|---------------------------|-------------------|--|
| Sensor                    |                   | 2/3" progressive scan interline transfer CCD   |
| Active area               |                   | 8.98mm x 6.71mm  |
| Active pixels             |                   | 1392 (H) x 1040 (V)  |
| Cell size                 |                   | 6.45 μm x 6.45 μm  |
| Readout modes             |                   | 1392 (H) x 1040 (V) @ 30/15 Hz (full image)<br>1392 (H) x 500 (V) @ 58 Hz (partial scan)<br>1392 (H) x 250 (V) @ 100 Hz (partial scan) |
| Synchronization           |                   | Internal/External auto switch<br>HD/VD, 4.0 Vp-p impedance 4.7K Ω<br>VD = 15/30 Hz ± 2%, non-interlace<br>HD = 15.99 / 31.98 kHz ± 2%  |
| Pixel clock               |                   | 55.00/27.50 MHz  |
| S/N ratio                 |                   | >50 dB   |
| Sensitivity               | Mono<br>Color     | 0.5 lux f=1.4 (no shutter) @ 30 fps,<br>4.0 lux f=1.4 (no shutter) @ 30 fps  |
| Video output              | Analog<br>Digital | 714 mV, 75 Ω (900 mV white clip)<br>Camera Link (Base configuration)   |
| Color (RMC/TMC-1325 only) |                   | Raw Bayer output for host-based interpolation  |
| Gamma                     |                   | Programmable LUT (1.0 std)   |
| Shutter speed             |                   | 1/30 to 1/16,000 in 10 steps   |
| Lens mount                |                   | C-mount (use 1/2"3" format lenses)   |
| Power                     |                   | 12V DC ± 10%, 360 mA (typical at 25° C)  |
| Operating temperature     |                   | -10° C to 50° C  |
| Vibration                 |                   | 7 Grms (10 Hz to 2000 Hz) Random   |
| Shock                     |                   | 70 G, 11 ms, half-sine   |
| Dimensions (H x W x L)    |                   | 44.5 mm x 44.5 mm x 63 mm  |
| Weight                    |                   | 140 g (without tripod)   |

## GUI Interface

A user-friendly GUI (graphical user interface) is provided. This interface allows users to control the following functions of the TM-1325CL camera:

- Shutter control for manual async. and pulse-width control
- Gain control
- Offset control
- Save settings
- Load settings
- Report settings
- LUT setting and graphic display
- Scanning mode selection and Option selections
- Channel auto balancing

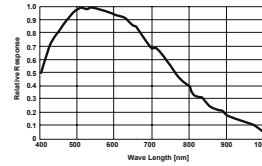


Camera parameters can be uploaded from the PC to the camera. Once these parameters are stored in EEPROMs, an instantaneous change from one setting to another can be done with a delay of few frames in between.

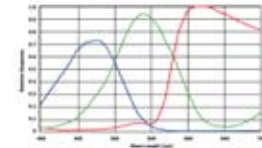
Software available for download at [www.jai.com](http://www.jai.com)

## Spectral Response

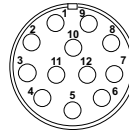
TM-1325CL (monochrome)



TMC-1325CL (color)



## Connector Pin-out



12-Pin Connector

|             |              |
|-------------|--------------|
| 1 GND       | 7 VD in      |
| 2 +12V DC   | 8 GND        |
| 3 GND       | 9 HD in      |
| 4 Video out | 10 NC        |
| 5 GND       | 11 INTEG/ROI |
| 6 NC        | 12 NC        |

## Shutter Speed

|   | Manual            | Async               |
|---|-------------------|---------------------|
| 0 | no shutter (1/30) | no shutter (1/30)   |
| 1 | 1/60              | 1/16,000            |
| 2 | 1/125             | 1/8,000             |
| 3 | 1/250             | 1/4,000             |
| 4 | 1/500             | 1/2,000             |
| 5 | 1/1,000           | 1/1,000             |
| 6 | 1/2,000           | 1/500               |
| 7 | 1/4,000           | 1/250               |
| 8 | 1/8,000           | 1/125               |
| 9 | 1/16,000          | pulse width control |

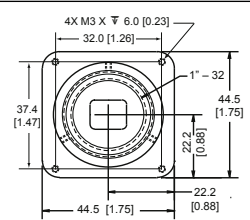
(For 15 fps mode, the shutter speed doubles)

## Ordering Information

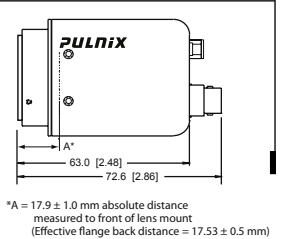
| Camera  |                                      |
|---|--------------------------------------|
| Lead Processing                                   | TM-1325CL (mono), TMC-1325CL (color) |
| RoHS Compliant                                    | RM-1325CL (mono), RMC-1325CL (color) |
| Optional Functions                                |                                      |
| Internal IR Filter Added                          | OP3-1                                |
| Optical Filter Removal                            | OP3-2                                |
| Strobe Output                                     | OP8o                                 |
| 10-Bit Output                                     | OP93-1                               |
| Optional Accessories (must be ordered separately) |                                      |
| I/O   | 26CL-02-26 digital output cable      |
| Power Cable                                       | 12P-02S                              |
| Power Supply                                      | PD-12UUP (includes power connector)  |

## Dimensions

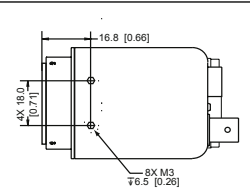
Front view



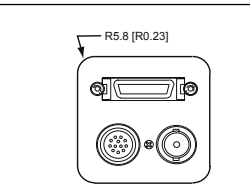
Side view



Bottom view



Rear view



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