Product Specifications

Thermo Scientific CID8825D

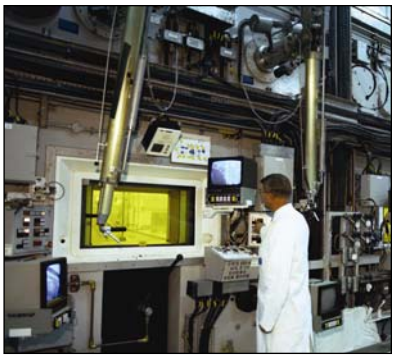
The Thermo Scientific CID8825D radiation hardened COLOR camera features new Low Noise, Preamplifier Per Pixel Radiation Hardened Charge Injection Device (CID) imager technology for use in radiation environments.
Color NTSC video is available via Coax, or RGB connectors. Digital video is available via USB2.0.
The compact remote radiation hardened head is connected to a camera control unit (CCU) with a flexible cable supplied to length.

Designed for Versatility

The CID8825D is the only rad. hard solid state camera capable of Color imaging in radiation environments. Cameras for use in air applications with typical ambient operating temp. conditions, and OEM models for use in customer specific enclosures such as 40mm diameter tube housing are available.
The unique radiation hardened CID based cameras feature a small detachable remote head with radiation tolerance to at least 3×10^6 rads total dose and low noise operation in flux rates up to 1×10^5 rads/hr.
Video output is standard NTSC format via the Camera Control Unit (CCU) BNC connector, R,G,B connectors, or digitally via the USB2.0 port.
Camera models include CID8825DX6 for operation up to 50 meters remote distance between the rad. hard head and CCU while the CID8825DX7 offers remote operation up to 150 meters.

Uniqueness of the CID

The radiation hard PPP (Preamplifier Per Pixel) CID imager technology allow exceptional signal to noise with sensitivity never before available with radiation hardened cameras.
These cameras have been tested and proven in high levels of gamma radiation, and since readout is within the pixel, loss due to SETI's (single event



transfer inefficiencies) is minimized. CID based cameras allow at least an order of magnitude improvement in operation when compared to CCD and CMOS based cameras and imagers. Options include monochrome and customized packaging, as well as partnered programs for complete systems for Air or Underwater operation.

Features:

- **COLOR CID (Charge Injection Device) Radiation Hardened Imager**
- **Exceptional signal to noise and sensitivity.**
- **3×10^6 Rads Total Dose (gamma)**
- **Excellent image at 1×10^5 rads/hr**
- **Replaceable Remote Head**
- **USB2.0 digital output**
- **Automatic White Balance**

Applications:

- **Inspection and measurement**
- **Process monitoring, Robotic handling**
- **Hot cell monitoring, Laser beam profiling**
- **Research**

Product Specifications

Thermo Scientific CID8825D Color Radiation Hard camera module

The CID8825D COLOR solid state video camera is part of a proven line of radiation hardened cameras and sensors whose applications span a full spectrum of industries and applications. Thermo Scientific CIDTEC Cameras & Imagers has been in business for over 25 years with imaging products in scientific, machine vision, aerospace, medical, and radiation hardened markets.

Imager

Image Format	730H x 512V
Total Pixels	710H x 484V
Pixel Size	18.0 x 16.4 micron
Full Well Capacity	›100,000 electrons
Active Area	14.5 mm diagonal
Optical Format	1”

Electrical

Scanning Format	NTSC, 30FPS, Interlace
Resolution	›380 TVL (horizontal)
S/N Ratio	-45db typ. signal/RMS 10KHz - 4.2MHz, with 3.58MHz trap
Sensitivity	10 lux (for min. video) 20 lux (for maximum output) with AGC in, illumination T=2850K
Composite Video	1V p-p, terminated into 75 ohm
Black Level	+50mV (Auto Clamp)
White Level	+700mV
Sync Level	-300mV
Geometric Distortion	0%
Input Power	18 Watts (max.)
Input Voltage	
Camera	+15VDC Nominal +7/+10VDC(TE)
Line Adapter	110 - 220 VAC +/- 10%, 50/60 Hz
Input Current	Camera 1.2A avg.
Gain	X2/X4

Interface

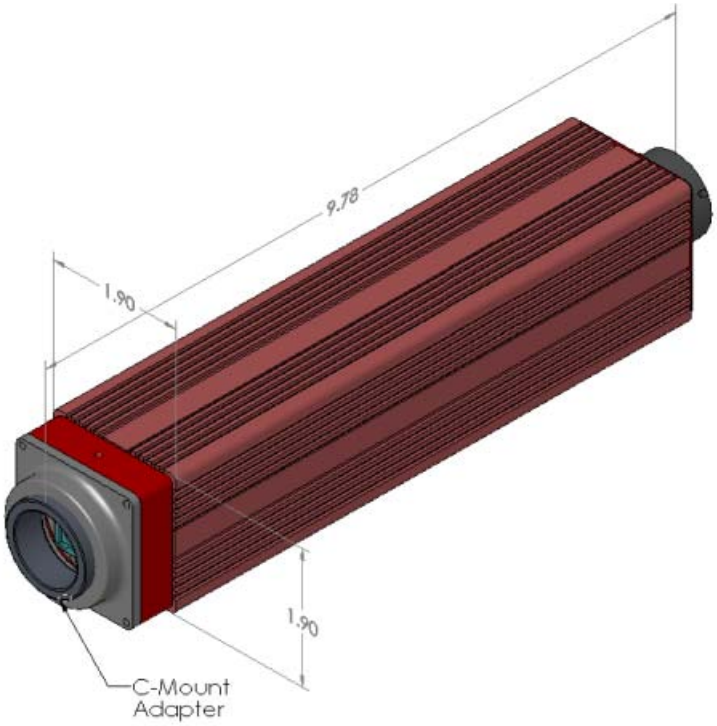
Connectors	J1000 Head Interface J1001 Adv. Features J1002 Mono Video P1000 Power Input
Digital Interface	J5 USB2.0 type “B”
Analog Video	J4 (R) Composite Video J3 (G) J2 (B)

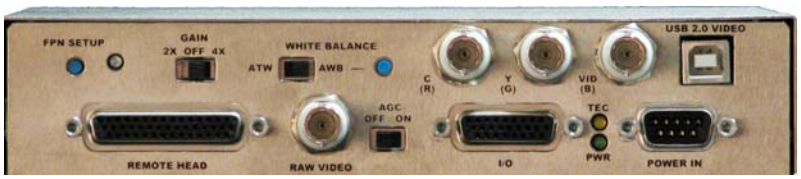
Mechanical

Weight	CCU 0.86 kg. (30 oz.) Head 0.45 kg. (16 oz.) P/S 1.81 kg. (64 oz.)
Cable Length	DX6 option to 50M DX7 option to 150M
Lens Mount	Standard “C” Mount (1.0” - 32 Thread)
Camera head case	Standard Al housing or TEST/SHIP case

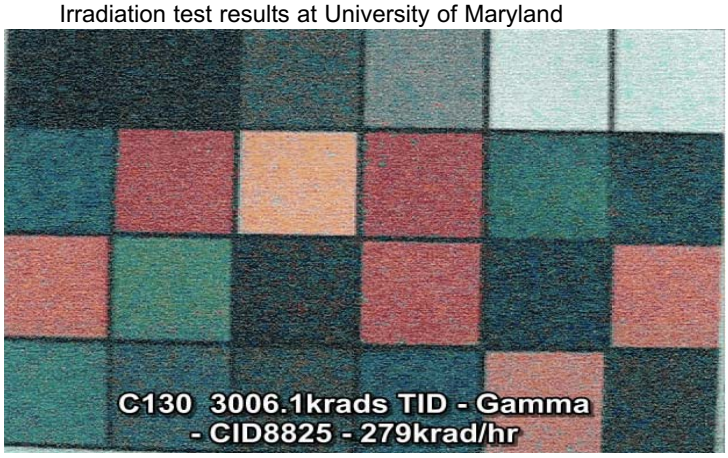
Environmental

Temperature Range	
Operating	0C to 55C case (DX6)
Storage	-25C to 85C
Humidity	0-95% noncondensing
Shock	50G (1/2 Sinewave at 10ms duration)





Accumulated Dose: 30,060 Gy (3.06 MRad) in 279kRad flux rate.
Irradiation test results at University of Maryland



Thermo CIDTEC, Liverpool, NY is ISO9001:2000 certified

PDM 11416_C

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