The Thermo Scientific camera I8710D1M-UV is a UV sensitive, high gain, gated intensified CID based camera consisting of a model 8710D1M radiation hard solid state RS-170 version camera with 4:3 aspect ratio pixels, fiberoptically coupled to a UV sensitive 18mm second generation MCP image intensifier.

**Thermo Scientific I8710D1M-UV**

**Designed for UV or radiation areas**
The I8710D1M-UV is an intensified gated UV sensitive CID based camera consisting of the reliable 8710D1M radiation hardened camera which is fiberoptically coupled to an 18mm GENII-UV microchannel plate image intensifier. The GENII-UV tube has an S-20 photocathode with suprasil input window for optimal ultraviolet response to 190nm, and is resistant to browning due to radiation. The camera is equipped with high speed gating for shutter intervals <100ns, and exhibits low noise / high gain performance with typical light gain of 12,000X.

**Maximum Flexibility**
Intensifier gating may be controlled automatically, or manually via control knob or with external TTL input. Intensifier gain is manually controlled via the Gain control knob, or by the AutoGain feature. The MCP uses a low noise photocathode sensitive from 190nm to at least 700nm. Internal adjustments allow for control of black level setup, edge enhancement and 2X video gain boost. Options include digital control, optical coupling, Autogate/Autogain only, Progressive Scan, and CCIR format. The I8710D1M-UV camera features a 2:1 interlace scan 776(H) x 512(V) CID array with 12 x 13.7micron pixels in a compact remote head connected to the camera control unit via flexible 30 meter cable.

While the CID camera is radiation resistant with total dose capabilties to at least 1 x 10(6) rads total dose gamma, the intensifier tube performance in radiation is not specified.

**Features:**
- CID (Charge Injection Device)
  - Radiation hardened image
  - 1 x 10(6) rads (total dose gamma)
  - Excellent image at 7 x 10(5) rads/hr
  - 18mm DEP GENII-UV image intensifier
  - Sensitivity 5 x 10(-7) fc at 250nm
  - Typical 12,000X light gain
  - UV through visible response
  - Auto Gate/Gain with manual control
  - RS-170 Interface scanning format
  - 4:3 Aspect pixels

**Applications:**
- Low light level or UV Inspection and measurement in radiation environments.
- Remote gaging, metrology
- Fluorescence microscopy
- Research
- Neutron Imaging
Product Specifications

Imager

Image Format: 776H x 512V
Total Pixels: 755H x 484V
Pixel Size: 12.0 x 13.7 micron
Full Well Capacity: >250,000 electrons
Active Area: 11 mm diagonal
Optical Format: 1"

Electrical

Scanning Format: RS-170, 30FPS, Interlace
Resolution: >380 TVL (horizontal)
S/N Ratio: >30db at 10^-1 lux
Sensitivity: 5 x 10^-10 W/mm2 (typical 250nm)
Composite Video: 1V p-p, terminated into 75 ohms
Black Level: +50mV (Auto Clamp)
White Level: +700mV
Sync Level: -300mV
Geometric Distortion: 0%
Input Power: 18 Watts (max.)
Input Voltage: +15VDC Nominal
Line Adapter: 115 or 220 VAC +/- 10%, 50/60 Hz
Input Current: (@15V) 1.1A avg.
Spectral Response: See Response Curve
Gain: X1/2, X2 (internal SW)

Interface Signals

Outputs: J1 Video, End of frame, End of Line, H&B Drive, Composite sync.
J2 Video, ALC, 14.318 ER Clock
BNC Composite Video

Inputs: J1 +15VDC
J2 V Drive, PIP

Mechanical

Weight: CCU 0.96 kg, (33 oz)
Head 0.48 kg, (17 oz)
Cable Length: 30 Meters
Lens Mount: Standard "C" Mount (1.0" - 32 Thread)
Camera Mount: 1/4" - 20 Thread
Connectors: J1 25 Pin D (male)
J2 25 Pin D (female)
BNC standard

Dimensions: Gain Control Unit 7.5"(L) x 7.5"(W) x 1.025"(H)
Camera Control 7.5"(L) x 7.5"(W) x 1.025"(H)

Environmental

Temperature Range: Operating 0C to 30C case
Storage -25C to 85C

Thermo Scientific I8710D1M-UV Intensified Radiation Hardened Camera

The I8710D1M-UV intensified UV sensitive radiation hardened 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 have been in business for over 25 years with imaging products in scientific, machine vision, aerospace, medical, and radiation hardened markets.

Typical Photocathode Responsivity (mA/W):

<table>
<thead>
<tr>
<th>Wavelength (nm)</th>
<th>Responsivity (mA/W)</th>
<th>QE (%)</th>
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<tbody>
<tr>
<td>200</td>
<td>28.0</td>
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<td>19%</td>
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<tr>
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<tr>
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<td>6%</td>
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<tr>
<td>700</td>
<td>8.5</td>
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*note: export restrictions may apply