**Features**
- 2.1 Megapixels
- Powerful DSP chip based
- 1/3” Progressive Scan CMOS Sensor
- Output: 3G-SDI/HD-SDI (NTSC, PAL) with 292M
- 42.1 x 29 x 29 millimeters – just over 1.65 inches long
- Maximum 1,920 x 1,080 resolution
- Maximum 60 fps @ 1,920 x 1,080
- Broadcast standard version available with 29.97/59.94 fps
- C/CS mount
- Cased version ships with tripod adapter, universal power supply, and control cable
- Can control remotely via PC with RS-485 cable connection – up to 4,000 feet (1,219 meters)
- AGC, AWB, AE, D-WDR, Sens-Up
- 2D/3D Noise Reduction, Digital Zoom
- Defog
- 1080/720@30p/60p/60i selectable
- Broadcast standard version: 1080/720@29.97/30p/59.94p/59.94i/60p/60i selectable
- WDR (Wide Dynamic Range): Allows a camera to filter the intense back light surrounding a subject and thus enhances the ability to distinguish features and shapes on the subject.
- DNR (Digital Noise Reduction, 2D/3D-NR): Provides outstanding clear images by reducing noise. DNR technology has excellent disk-saving effect.
- AGC (Automatic Gain Control): Automatically adjusts the incoming signal to proper level for display or recording and the sensitivity of pick-up object to render the most pleasing images. Improves performance in low light conditions.
- Dynamic Motion Detection (8 zones, up to 1980 blocks)
- Privacy Zone Masking (8 zones)
- Built-in OSD (On Screen Displays) Joystick
- DC12V ~ 24V
- Ships with Universal PS, Tripod Adapter, and Control Cable
- Board mount version available with Board Mount Lens (DC Iris, TDN Support)

**Overview**
The GNAT 1080p 60™ is a miniature 1080p camera – 42.1 millimeters long – just over 1.65 inches. It features a 1/3” Progressive Scan CMOS Sensor, 60 fps@1920 x 1080, AGC (Automatic Gain Control), WDR (Wide Dynamic Range), digital zoom, and defog. The GNAT 1080p 60 also supports brilliant DNR (Digital Noise Reduction) technologies like DNR, 3D-NR and 2D+3D.

**Applications**
- Rugged Military Camera
- Machine Vision (Semiconductor, Automotive)
- Medical (Microscopy, Dental Medicine)
- Sport Science (Motion Analysis, Physical) POV
- Situational Awareness for Subs, Airplanes, and Ships
## Specifications

### General Specifications

<table>
<thead>
<tr>
<th>Image Sensor</th>
<th>1/3” Type, 2.1 megapixel progressive scan CMOS Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scanning System</td>
<td>Progressive, Interlace</td>
</tr>
<tr>
<td>Effective Pixels Number</td>
<td>1,920 (H) x 1,080 (V), 2.07M Pixels (Full HD)</td>
</tr>
<tr>
<td>Total Number of Pixels</td>
<td>1,952 (H) x 1,116 (V), 2.18M Pixels (Full HD)</td>
</tr>
<tr>
<td>Lens Mount</td>
<td>CS/CS Mount</td>
</tr>
<tr>
<td>S/N Ratio</td>
<td>More than 50 db (AGC Off)</td>
</tr>
</tbody>
</table>

### Video Output Modes

- **HD-SDI**: 1920x1080p (30 fps), 1920x1080i (60 fps), 1280x720p (60 fps)
- **3G-SDI**: 1920x1080p (60 fps)

### Video Output Level

- HD-SDI: 3G-HDI / 1.0 Vp-p (75Ω, Composite)
- NTSC/PAL (Selectable)
- Supports BT. 601, BT.656, BT.709, BT.1120, YC 16-bits At 1080p 60, outputs as BT.1120

### HD-SDI Output Connector

BNC Connector

### Min. Illumination

Color: 0.2 Lux @ F1.2 / B/W: 0.01@F1.2

### OSD

Built-in

### Electronic Shutter Speed

Auto / Manual (1/30 ~ 1/50,000)

### White Balance

ATW / AWC / Indoor / Outdoor / Manual

### Back Light Compensation

Off / WDR / BLC / HSBLC

### D-WDR/ACCE

Low / Middle / High / Off, 0–15 steps

### AGC

0–15 steps

### Adjust

SHARPNESS / MONITOR / OSD / LSC / VIDEO OUT (NTSC/PAL)

### Languages

ENG, JPN, CHN, KOR, GER, FRA, ITA, SPA, POL, POR, NED, TUB, HER, ARB (Directional Switches)

### Day & Night

Auto / B.W / Color / EXT (Selectable)

### 2D/3D-NR

2DNR / 3DNR / SMART NR

### Digital Zoom/PIP

On / Off (x2 ~ x64)

### Privacy Masking

On / Off (8 Zone Selectable)

### Motion Detection

On / Off (4 Zone Selectable)

### Defect

LIVE DPC / STATIC DPC / BLACK DPC

### Defog

Low / Middle / High / Off (Position/Size-User Setting)

### Sens - up

Auto (Selectable limit ~ x30) / Off

### D – EFFECT

Freeze / Mirror / D-Zoom / NEG. IMAGE

### Protocol

Pelco-D / Pelco-P

### RS-485 Communication

CAM ID: 0 ~ 255
ID Display: On / Off
Baudrate: 2400 / 4800 / 9600 / 19200 / 38400

### Physical and Power

- **Power**: DC12V – 24V ±10%
- **Max. Power Consumption**: 2.3W (1080p/30 fps), 3.3W (1080p/60 fps)
- **Operating Temperature**: 5°C ~ +50°C (0% ~ 80% Relative Humidity)
- **Storage Temperature**: -20°C ~ +60°C (0% ~ 90% Relative Humidity)
- **Dimensions**: 42.1 x 29 x 29 millimeters
  - 1.66 x 1.14 x 1.14 inches
  - (Connector, CS/CS mount excluded)
- **Weight**: Approximately 40 grams (1.41 ounces)

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### Rear Connectors

#### Power and I/O Port

- **1** and **2** are RS-485, **7** and **8** are Power

#### Remote Control via PC & RS-485

![Remote Control Diagram](image)

#### Camera Drawings

![Camera Drawings](image)

### Ordering Information

**GNAT 1080p 60**: 2 Megapixel HD Camera
- Ships with tripod adapter, universal power supply, and control cable

**GNAT 1080p 60 Board**: 2 Megapixel HD Camera – Board Version

**GNAT 1080p 59.94**: 2 Megapixel HD Camera – Broadcast Standard