Genie™ Nano
Smaller, faster, stronger, cheaper. Better in every way that matters.

Built on a proven platform and a rich legacy of performance and versatility.

» GigE Vision®
» State-of-the-art CMOS sensors
» Higher frame rates
» Wider, deeper feature set
» Small and robust quality build
» Our lowest price ever
**Powerful** features. **Accelerated** system performance.

- **Fits Tight Spaces**  
  44 mm × 29 mm × 21 mm  
  Slimmest body width available

- **Wide Temperature Range**  
  -20 °C to 60 °C (housing)  
  Reliable in harsh environments

- **Versatile I/O**  
  2 inputs + 2 opto-coupled outputs  
  Easy integration and deployment

- **TurboDrive**  
  Up to 2x faster transmission  
  Achieve data rates beyond GigE Vision limits

- **Super Light-Weight**  
  46 grams  
  Ideal for UAV or robotics

- **Trigger-to-Image Reliability**  
  System level track and trace  
  Protection from data loss and improved reliability

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**Small** package. **Big** functionality.

- **Dimensions**  
  44 mm × 29 mm × 21 mm

- **Mounting holes**  
  Positions and sizes are identical across all Genie models

- **LED**  
  Multi-color LED for easy camera status

- **Connectors**  
  Secure RJ-45 & auxiliary connectors

- **Power**  
  Power-Over-Ethernet (PoE) or 10-36 volts on the auxiliary connector

* for C-mount version

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**Body depth** (without connector): 32 mm  
**Body depth** (with connector): 39 mm

- **CS-mount versions**  
  2 inputs and 2 opto-coupled outputs

- **C-mount versions**  
  2 inputs and 2 opto-coupled outputs
Introducing **TurboDrive™**
Break through the GigE limit.

TurboDrive technology allows Genie Nano to transfer full image quality at faster frame rates — with no changes to your GigE network.

- Proprietary patent pending technology
- Does not affect image integrity
- Enabled through CamExpert, or through the Sapera LT API

<table>
<thead>
<tr>
<th>Genie Nano with Sony IMX174</th>
<th>Standard</th>
<th>With TurboDrive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual fps received at computer</td>
<td>52 fps</td>
<td><strong>84 fps</strong>*</td>
</tr>
<tr>
<td>Effective bandwidth received at computer</td>
<td>115 MB/s</td>
<td><strong>164 MB/s</strong></td>
</tr>
</tbody>
</table>

* Transfer speed with TurboDrive is image dependent. Refer to TurboDrive Primer on our web site.

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**Advanced Acquisition Features**
(Firmware v1.0)

- Multi-ROI Windows (in-sensor), up to 16 ROIs
  - Capture only the data you need – for increased throughput
- Burst acquisition
  - Grab at the highest sensor rate to capture fast events
- General purpose counter and timer
  - Centralize acquisition controls – never miss an event or strobe
- Trigger-to-Image Reliability
  - Improved system reliability and customer confidence
  - Packet re-send statistics
  - Over-trigger event monitors
  - In-camera image accumulation count
Built for **endurance and reliability**

A wide operating temperature range, from -20 to 60 °C (housing), helps extend camera life and increase system reliability.

<table>
<thead>
<tr>
<th>Temperatures</th>
<th>MTBF (hours)</th>
<th>MTBF (years)</th>
<th>Failure Rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 °C</td>
<td>3514728</td>
<td>401.2</td>
<td>0.284517</td>
</tr>
<tr>
<td>20 °C</td>
<td>2040096</td>
<td>232.9</td>
<td>0.490173</td>
</tr>
<tr>
<td>40 °C</td>
<td>1005703</td>
<td>114.8</td>
<td>0.994329</td>
</tr>
<tr>
<td>60 °C</td>
<td>434538</td>
<td>49.6</td>
<td>2.301294</td>
</tr>
<tr>
<td>80 °C</td>
<td>177030</td>
<td>20.2</td>
<td>5.648757</td>
</tr>
</tbody>
</table>

* Failures / 10^9 hours

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**CMOS Sensor Platform**

**SONY** Pregius

IMX174 and IMX249 (2.3M), mono and color (1/1.2" sensor)

**Future Deployment**

- IMX252 and IMX265 (3.2M), mono and color (1/1.8" sensor)
- IMX250 and IMX264 (5.1M), mono and color (2/3" sensor)
- All new Sony Pregius sensors

**ON Semiconductor**

- Python 0.3/0.5/1.3M mono, NIR, and color versions
- Python 2.3/5.1M mono, NIR, and color versions
- Aptina - mono/color (rolling shutter)
Features Roadmap

Multi-ROI Windows (FPGA based) for the IMX249
  » Capture only the data you need – increased throughput

Multi-Exposures in Cycling Mode
  » Improves image quality for better analysis

Auto-Brightness (AGC and Exposure)
  » Improves image quality in challenging lighting conditions

Color Enhancement
  » Improves image quality for better quality control

Multicast Feature
  » Commands and image distribution to simplify setup

Precise Time Protocol support
  » Simultaneously control multiple cameras

Genie™ Nano

www.teledynedalsa.com/genie-nano