

HD Ready, Wide Dynamic Range Imaging CMOS Sensor,  
CLCC package

## Ease your design with Native WDR™



### Key Features

- **Native WDR™:** Intrinsic wide dynamic range – no knee points to setup – no multiple exposures – 120 dB in a single shot.
- **Highest** dynamic range in the market thanks to its patented Solar Cell pixel structure
- **HD Ready resolution** , 1280\*720 effective pixels, 5.6  $\mu\text{m}$  square pixels, 8.2mm diagonal
- **Internal FPN compensation** results in no noticeable FPN even at low intensity
- **60 MHz max pixel clock**, can operate with any pixel clock resulting in a fully programmable frame rate
- **Ultra Low power consumption** : less than 260 mW full frame

### Applications

- CCTV/IP surveillance cameras
- Intelligent Transportation Systems
- Industrial Machine Vision
- Solar panel inspection
- Automotive vision
- Biometric and medical imaging

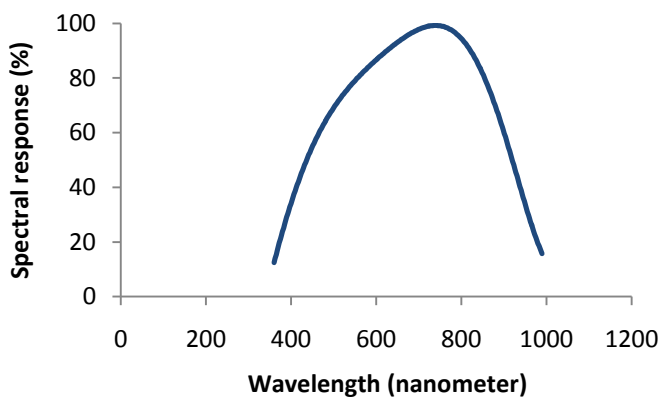
**NSC1005** is a HD Ready (1280x720 active pixels) **high dynamic range** CMOS image sensor which benefits from NIT patented Solar Cell pixel structure. **NSC1005** offers a true logarithmic response versus optical illumination without saturation with more than 120 dB true dynamic range.

The logarithmic response is intrinsic to the sensor thanks to the Solar Cell pixel structure, therefore there is no need to program any register or change setup according to illumination conditions. Moreover **NSC1005** delivers a **stable contrast indexed image** that is independent of the ambient illumination. **NSC1005** operates in rolling shutter mode.

### Technical Specifications

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| <ul style="list-style-type: none"> <li>• <b>Pixel Size:</b> 5.6µm x 5.6µm</li> <li>• <b>Diagonal:</b> 8.2 mm</li> <li>• <b>Array Format (active):</b> 1280H x 720V</li> <li>• <b>Imaging Area:</b> 7.1mm x 4mm</li> <li>• <b>Color Filter Array:</b> Monochrome/ RGB Bayer</li> <li>• <b>Optical Window:</b> Optional anti-reflective glass</li> <li>• <b>Optical Format:</b> 1/2–inch lens</li> <li>• <b>Frame Rate:</b> &gt;50 fps @ 1280H x 720V</li> <li>• <b>Dynamic Range:</b> &gt;120dB<br/>Logarithmic response</li> <li>• <b>Data Rate:</b> 60 MHz max pixel scanning rate</li> <li>• <b>Signal Output:</b> Parallel digital 10 bit /Buffered analog differential</li> <li>• <b>Minimum detectable level:</b> 6 mLux faceplate @ 25fps</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Readout Mode:</b> Rolling shutter</li> <li>• <b>Exposure window:</b> programmable,1-719 lines</li> <li>• <b>ADC:</b> 10-bit</li> <li>• <b>Gain:</b> Max 16dB, Step size 4dB</li> <li>• <b>Responsivity (green):</b> 2.16V/lux-sec @ 550nm</li> <li>• <b>Spectral Range:</b> 450nm-1 050nm</li> <li>• <b>Supply Voltage:</b> 3.3V</li> <li>• <b>Power Consumption:</b> &lt;260mW<br/>Full frame @ 50fps</li> <li>• <b>Operating Temp. Range:</b> -40°C + 90°C-no flicker or hot pixels through the full temperature range</li> <li>• <b>Package:</b> CLCC-48</li> </ul> |
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Typical spectral response curve



Block Diagram

