

1.3 Mpixels Wide Dynamic Range Imaging CMOS Sensor, PCB mount, direct front plate coupling without optical glass window

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
- **1.3 Million Pixels** (1280x1024), 10.6 μm square pixels, 18mm diagonal
- **Internal FPN compensation** results in no noticeable FPN even at low intensity
- **80 MHz max pixel clock**, can operate with any pixel clock resulting in a fully programmable frame rate
- **2x2 binning** readout mode provides a reduction of 2 of the signal noise
- **VGA zoom** readout mode for accommodating small resolution display
- **Ultra Low power consumption** : less than 230 mW full frame

Applications

- Industrial Machine Vision
- Solar panel inspection
- Automotive vision
- CCTV/IP surveillance cameras
- Intelligent Transportation Systems
- Biometric and medical imaging
- Direct coupling to I2 tubes
- Simple coupling to X-ray devices

NSC0905 is a 1,3 MPixels (1280x1024 active pixels) **high dynamic range** CMOS image sensor which benefits from NIT patented Solar Cell pixel structure. **NSC0905** offers a true logarithmic response versus optical illumination without saturation with more than 120 dB true dynamic range.

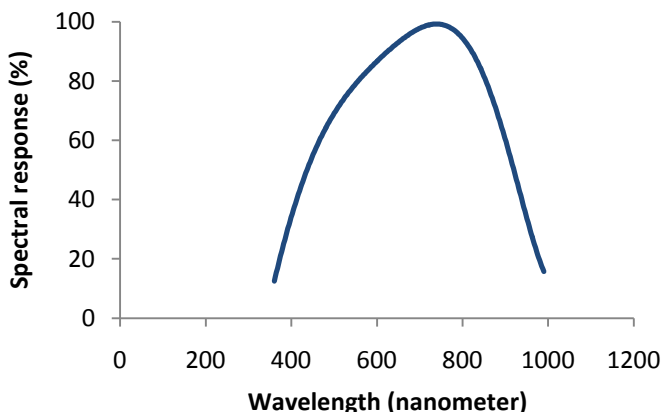
The logarithmic response is intrinsic to the sensor thanks to the Solar Cell pixel structure, therefore there is no need to program any register or change setup according to illumination conditions. Moreover **NSC0905** delivers a **stable contrast indexed image** that is independent of the ambient illumination.

NSC0905 operates in rolling shutter mode under three main display formats: full frame, binning 2x2 and VGA zoom. Changing display modes is made through an easy-to-use digital control interface.

Technical Specifications

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| <ul style="list-style-type: none"> • Pixel Size: 10.6µm x 10.6µm • Diagonal: 18 mm • Array Format (active): 1280H x 1024V, 18mm diagonal • Imaging Area: 13.56mm x 10.85mm • Color Filter Array: Monochrome • Optical Window: None-direct surface to silicon photodiode • Optical Format: 1-inch lens • Frame Rate: 50 fps @ 1280H x 1024V • Dynamic Range: >120dB
Logarithmic response • Data Rate: 80 MHz max pixel scanning rate • Signal Output: Buffered analog differential • Minimum illumination level : 10 mLux faceplate @ 25fps | <ul style="list-style-type: none"> • Readout Mode: Rolling shutter • Clocks: 4 x CMOS • Digital Controls: 8 bits CMOS • Windowing: -Full frame 1280*1024
-2X2 binning (average 2x2)
-VGA zoom (XY format) • Spectral Range: 450nm-1 050nm • Quantum Efficiency: >35% @ 850nm • Supply Voltage: 2.8-3.3V • Power Consumption: <230mW
Full frame @ 50fps • Operating Temp. Range: -40°C + 90°C-no flicker or hot pixels through the full temperature range • Package: PCB mounted |
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Typical spectral response curve



NSC0905 PCB

