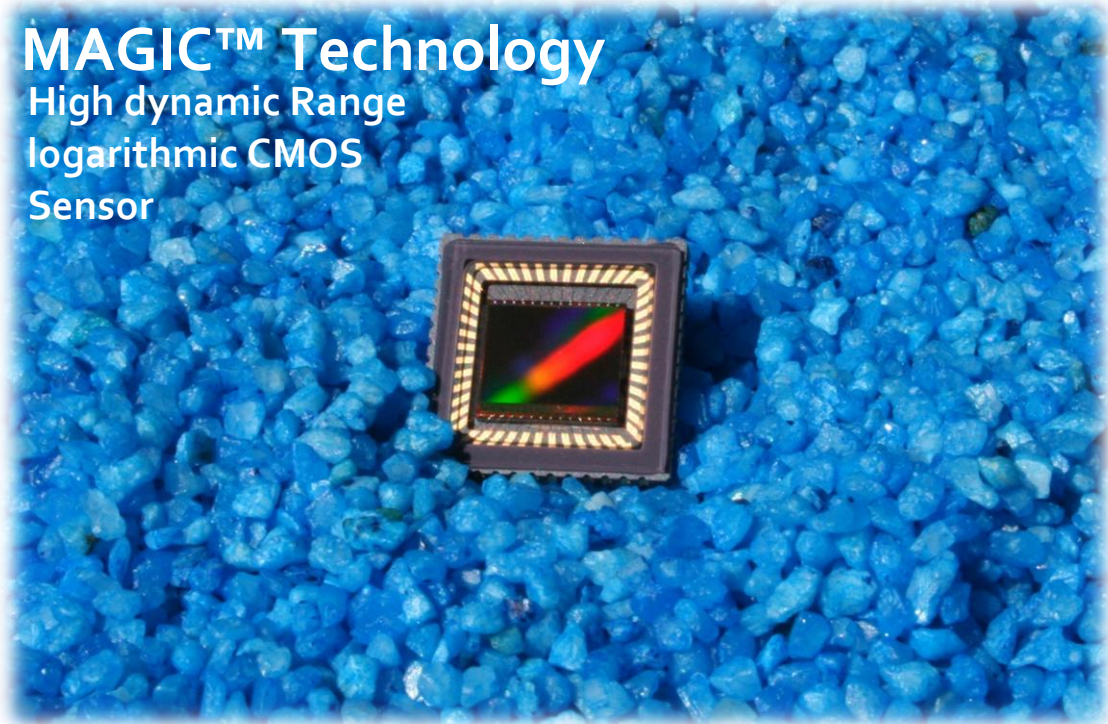


MAGIC™ Technology

High dynamic Range
logarithmic CMOS
Sensor



VGA, Global Readout Mode, 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
- **VGA resolution**, 640*480 effective pixels, 6.8 μm square pixels, 5.4mm diagonal
- **Global** and rolling readout mode
- **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
- **Ultra Low power consumption** : less than 250 mW full frame

Applications

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

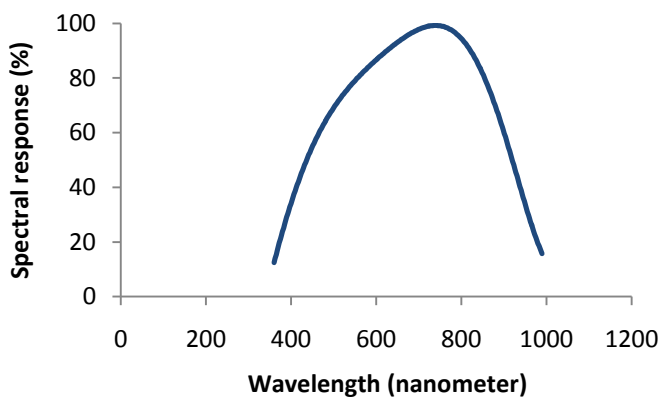
NSC1001 is a VGA (640x480 active pixels) **high dynamic range** CMOS image sensor which benefits from NIT patented Solar Cell pixel structure. **NSC1001** offers a true logarithmic response versus optical illumination without saturation with more than 120 dB true dynamic range.

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 **NSC1001** delivers a **stable contrast indexed image** that is independent of the ambient illumination. **NSC1001** operates in global and rolling readout mode.

Technical Specifications

- | | |
|---|--|
| <ul style="list-style-type: none"> • Pixel Size: 6.8 μm x 6.8 μm • Diagonal: 5.4 mm • Array Format (active): 640H x 480V • Imaging Area: 4.3 mm x 3.2mm • Color Filter Array: Monochrome • Optical Window: Optional anti-reflective glass • Optical Format: 1/3-inch lens • Frame Rate: >150fps @ 640H x 480V • Dynamic Range: >120dB
Logarithmic response • Data Rate: 80 MHz max pixel scanning rate • Signal Output: Parallel digital 10 bit /Buffered analog differential | <ul style="list-style-type: none"> • Readout Mode: Global/Rolling shutter • ADC: 10-bit • Spectral Range: 450nm-1 050nm • Supply Voltage: 3.3V • Shutter Efficiency: 100 μV/lux-sec • Power Consumption: <250mW
Full frame @ 50fps • Operating Temp. Range: -40°C + 90°C-no flicker or hot pixels through the full temperature range • Package: CLCC-48 |
|---|--|

Typical spectral response curve



Block Diagram

