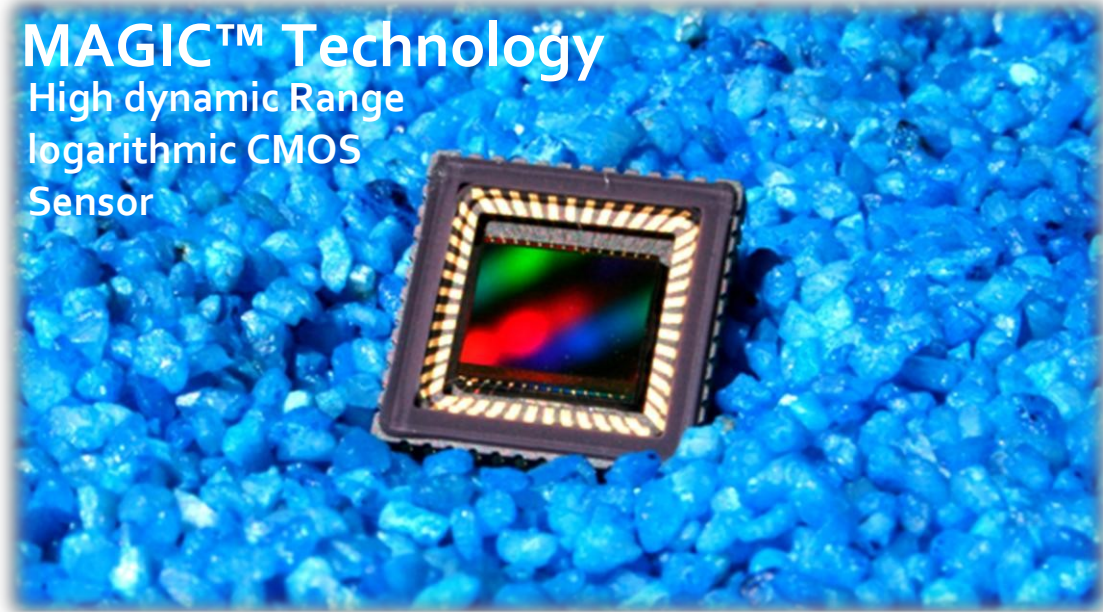


# MAGIC™ Technology

High dynamic Range  
logarithmic CMOS  
Sensor



Wide VGA, 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

**Wide-VGA** resolution (768\*576), 5.6 µm Square pixels, 5.4mm diagonal

**Internal FPN compensation** results in no noticeable FPN even at low intensity

**50 MHz max pixel clock**, can operate with any pixel clock resulting in a fully programmable frame rate

**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

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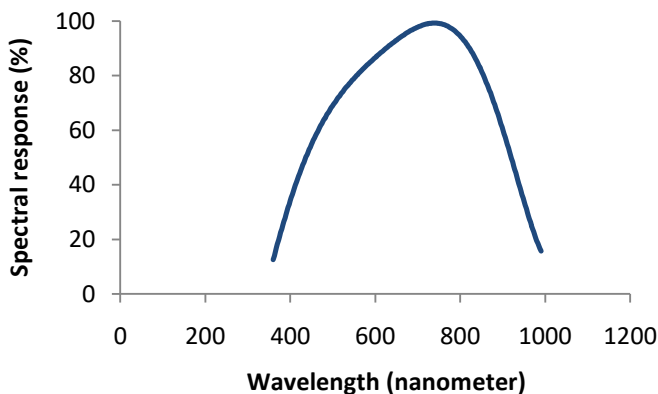
**NSC0902** is a Wide-VGA (768x576 active pixels) **high dynamic range** CMOS image sensor which benefits from NIT patented Solar Cell pixel structure. **NSC0902** offers a true logarithmic response versus optical illumination without saturation with more than 120 dB true dynamic range.

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 **NSC0902** delivers a **stable contrast indexed image** that is independent of the ambient illumination. **NSC0902** operates in rolling shutter mode.

### Technical Specifications

<b>Pixel Size:</b>	5.6µm x 5.6µm	<b>Readout Mode:</b>	Rolling shutter
<b>Diagonal:</b>	5.4mm	<b>Clocks:</b>	4 x CMOS
<b>Array Format (active):</b>	768H x 576V, 5.4mm diagonal	<b>Digital Controls:</b>	8 bits CMOS
<b>Imaging Area:</b>	4.3mm x 3.2mm	<b>Windowing:</b>	Full frame 768*576
<b>Color Filter Array:</b>	Monochrome	<b>Spectral Range:</b>	450nm-1 050nm
<b>Optical Window:</b>	Optional anti-reflective glass	<b>Quantum Efficiency:</b>	>35% @ 850nm
<b>Optical Format:</b>	1/4–inch lens	<b>Supply Voltage:</b>	2.8-3.3V
<b>Frame Rate:</b>	>50 fps @ 768H x 576V	<b>Power Consumption:</b>	<230mW Full frame @ 50fps
<b>Dynamic Range:</b>	>120dB Logarithmic response	<b>Operating Temp. Range:</b>	-40°C + 90°C-no flicker or hot pixels through the full temperature range
<b>Data Rate:</b>	50 MHz max pixel scanning rate	<b>Package:</b>	CLCC-48
<b>Signal Output:</b>	Buffered analog differential		
<b>Minimum illumination level:</b>	10 mLux faceplate @ 25fps		

Typical spectral response curve



NSC0902 Package

