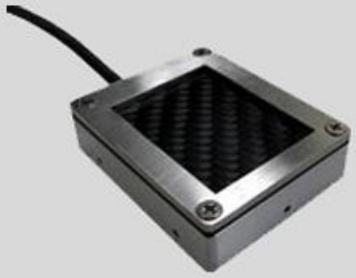

Remote RadEye™ HR X-Ray Detector

Overview

The Remote RadEye HR x-ray detector is a slim, lightweight, rugged solution for high-resolution radiation imaging. The detector is suitable for industrial inspection applications where images are taken in tight or difficult-to-reach spaces. This revolutionary x-ray camera is a cost-effective imaging solution for NDT/industrial inspection, scientific research such as x-ray crystallography, and general radiography applications.

Each detector features a rugged aluminum enclosure with a stainless steel cover and a carbon-fiber that shields the sensor against ambient light and protects the sensitive electronics from accidental damage.

A Gd_2O_2S scintillator screen, placed in direct contact with the photodiode array, converts incident x-ray photons to light, which in turn is detected by the photodiodes.

The detector is compatible with our ShadoCam image acquisition software, and is available with programming examples and SDKs for custom application software development.

Key Features

- Active area 33.0 x 24.9 mm
- 20µm resolution
- 0.7 fps max. frame rate
- Sensor weighs 0.2kg
- USB interface with 12-bit digital video output
- Supports x-ray energies as low as 10keV and up to 90kVp
- Ready-to-run software and drivers

Applications

- Industrial inspection, biomedical and scientific

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Specifications

Sensor Specifications	RadEye HR	Units
Resolution	20	µm
Number of Pixels	1650 x 1246	
Active area	33.0 x 24.9	mm
Avg. dark current (23°C) (1)	6	ADU/s(2)
Read noise (rms)	2	ADU
Dynamic range	2000:1	
Digitization	12	bits
Conversion gain	155	elec/ADU

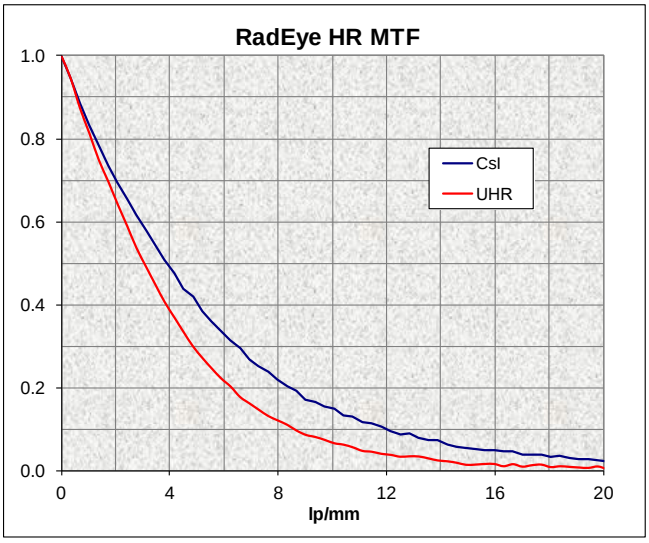
Camera Module – Direct USB, 2m		
Sensor data rate	5000	kHz
Readout period(3)	680	ms
Image transfer to PC	0.7	sec

General		
Weight of sensor head(4)	0.2	kg
Operating temperature	0 to 50	°C
Storage temperature	-10 to +65	°C
Humidity (non-condensing)	10 to 80	% R.H.

(1) dark current doubles approx. every 8°C
(2) ADU = Analog-Digital Unit = 1 LSB (Least Significant Bit)
(3) time required to transfer image from sensor to camera memory
(4) not including sensor cable

Resolution

The actual Modulation Transfer Function (MTF) for various scintillator options is shown in the following charts. A thicker phosphor screen will produce more signal, but at the expense of high-frequency contrast.

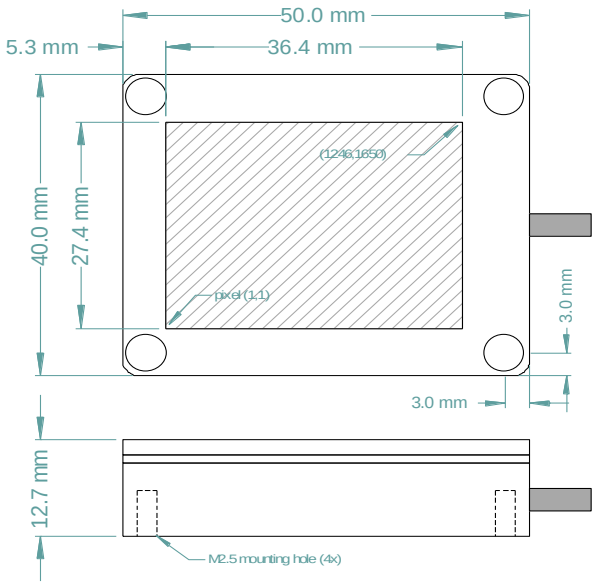


Ordering Information

The RadEye HR can be ordered in several configurations (see table below). The default scintillator option is UHR. Additional scintillator options may be available on request.

P/N	Description	Notes
RM1426-03	RadEye HR, UHR	std. model, 10-90 kV energy range
RM1426-06	RadEye HR, CsI scintillator	higher spatial resolution

Mechanical Drawings



Remote RadEye HR Sensor Head

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