

SIONYX

XQE-1350/51

SXGA 1 INCH IMAGE SENSOR BLACK SILICON CMOS

The SIONYX XQE-1350 / 1351 image sensor features unmatched ultra low light imaging technology and breakthrough sensitivity in the 800nm - 1,100nm range. This sensor enables digital fusion capability, high QE detection for instrument-industrial vision, and all use cases of traditional I2 tube-based night vision.

MODEL NUMBERS
MONOCHROME XQE-1350
COLOR XQE-1351

APPLICATIONS

- INDUSTRIAL VISION
- FLUORESCENCE MICROSCOPY
- MEDICAL DIAGNOSTICS
- SILICON CHARACTERIZATION
- DAY / NIGHT SURVEILLANCE
- WEAPON SITES + TARGETING
- SEE SPOT
- VEHICLE SITUATION AWARENESS
- ROBOTIC + UAV NAVIGATION
- NIGHT VISION

KEY PERFORMANCE PARAMETERS

OPTICAL FORMAT	1-INCH (5:4)
OPTICAL DIAGONAL	15.6 mm
ACTIVE IMAGE SIZE	12.3 (H) X 9.9 (V) mm
PIXEL SIZE	9.5 X 9.5 μ m
ACTIVE PIXELS	1280 X 1024
TOTAL ACTIVE PIXELS	1,310,720
TOTAL LIGHT SENSITIVE	1296 X 1040
SHUTTER TYPE	ROLLING
SHUTTER SPEED	14usec TO 120sec
MASTER CLOCK	6 - 27 MHz
MAXIMUM FRAME RATE	120 FPS SXGA
COLUMN PARALLEL ADC	10 OR 12 BITS
READ NOISE	≤ 1.2 E- RMS
OUTPUT DATA INTERFACE	MIPI CSI2 4 DATA LANE
	MAX. DIFF FREQ. = 855.36/2 MHz
I ² C CONTROL INTERFERENCE	400 KHz
NATIVE DYNAMIC RANGE	72 dB
HDR	UP TO 2 EXP/LINE
POWER CONSUMPTION	310 mW AT 10 BIT
	330 mW AT 12 BIT
PERFORMANCE RANGE	-40°C TO 65°C, AMBIENT
FUNCTIONAL TEMPERATURE	-40°C TO +105°C
VERSIONS	COLOR / MONOCHROME
PACKAGING	iBGA
PACKAGE SIZE	15.5 X 14 mm
COVERGLASS	DOUBLE AR COATED

All product specifications, and data, are subject to change without notice due to continuous quality improvement initiatives. Visit SIONYX.com for the most current data documentation.

FEATURES

- SIONYX 2nd Generation Backside Illuminated XQE process-technology
- Extremely high sensitivity (400 - 1200nm)
- Capable of 0.5mlux imaging at 90FPS + F1.2 (SNR = 1), Color 60FPS
- 1280 x 1024 SXGA resolution
- Rolling electronic shutter
- Ultra low read noise
- High dynamic range
- Progressive scan readout
- Raw image data output
- Full frame rate HDR & Stagger HDR (long/short row integration)
- Column summing 2x2 binning for extreme low light SNR
- Region-of-interest readout
- Flip & Mirror readout modes
- MIPI CSI2 output
- Alternate digital parallel data interface
- I²C control interface
- Programmable gain controls
- Programmable exposure control
- Automatic black level calibration
- Sensor temperature output
- RoHS and AEC-Q100 G2 compliant

HDR

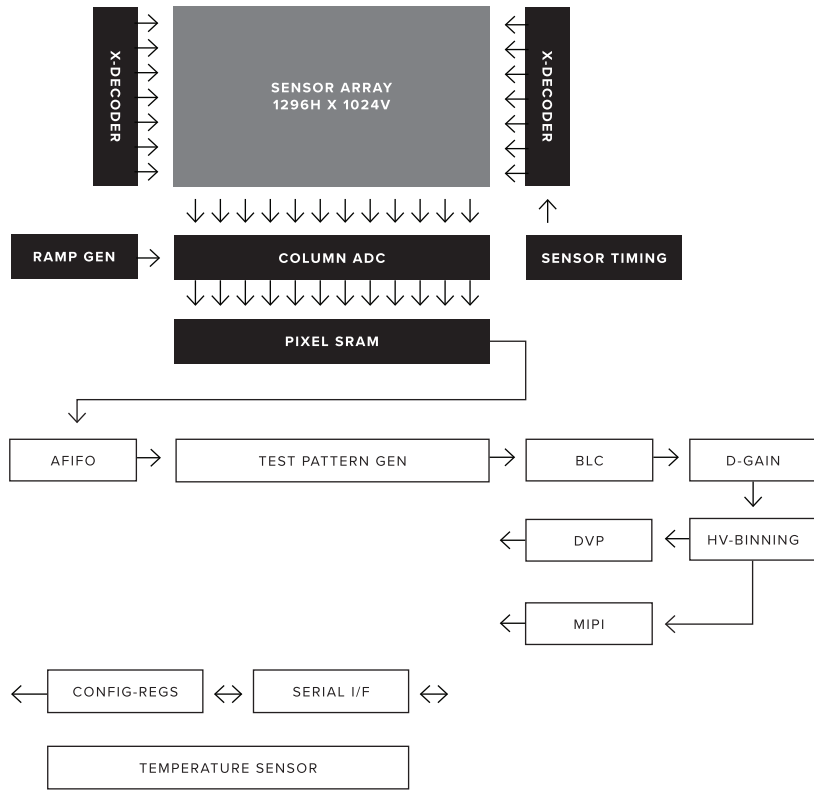
HIGH / LOW GAIN	80 dB
2 EXP / FRAME	90 dB (60 FPS)
HORIZONTAL 2 EXP / FRAME	90 dB (120 FPS 1/2 VERTICAL RESOLUTION)

SUPPLY DIGITAL VOLTAGE IO LEVEL

ANALOG	2.8 V
DIGITAL	1.2 / 1.8 V

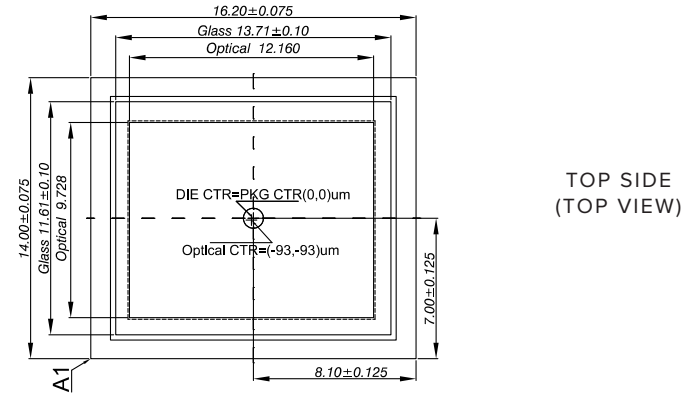


FUNCTIONAL BLOCK DIAGRAM

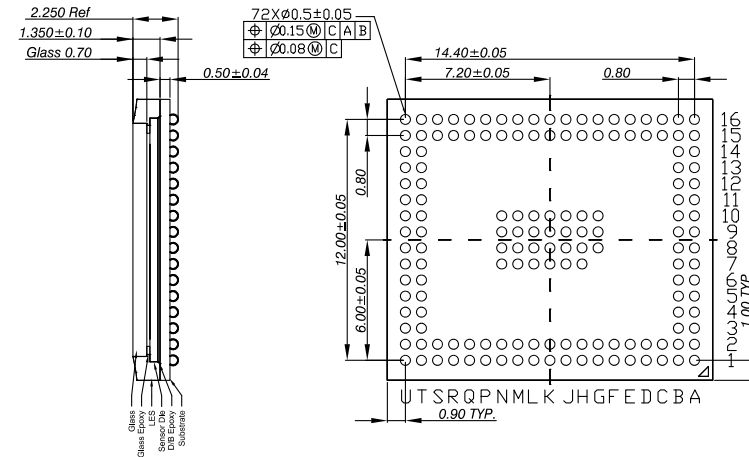


Full size drawings and complete user integration specification available upon request.

PACKAGE iBGA



TOP SIDE
(TOP VIEW)



SIDE VIEW

BOTTOM VIEW