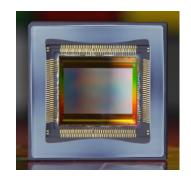


## LUX13HS

The LUXIMA™ LUX13HS image sensor is a 1.0 Megapixel 4,000+ FPS Global Shutter CMOS Digital Sensor developed for the high speed machine vision, 3D scanning, motion analysis, and industrial markets. LUX13HS features low noise pixel with CDS based on the patented Floating Storage Gate technology. The user can obtain faster frame rates through Y windowing. Color and monochrome options are offered in a ceramic uPGA package.



Active resolution 1280 × 864 pixels  Pixel 13.7 um pitch 7T shutter pixel with CDS  Full well 20,000e-  Read noise 14e-  Responsivity 25V/lux-sec @ 550 nm  QE 30% @ 550 nm  PRNU 1.5% rms  Shutter efficiency 99.9%  Nominal frame rate 3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC 10b  Data output 80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size		
Pixel 13.7 um pitch 7T shutter pixel with CDS  Full well 20,000e- Read noise 14e- Responsivity 25V/lux-sec @ 550 nm  QE 30% @ 550 nm  PRNU 1.5% rms  Shutter efficiency 99.9%  Nominal frame rate 3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC 10b  Data output 80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Optical format	4/3"
Full well 20,000e- Read noise 14e- Responsivity 25V/lux-sec @ 550 nm  QE 30% @ 550 nm  PRNU 1.5% rms  Shutter efficiency 99.9%  Nominal frame rate 3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC 10b  Data output 80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Active resolution	1280 × 864 pixels
Read noise 14e- Responsivity 25V/lux-sec @ 550 nm  QE 30% @ 550 nm  PRNU 1.5% rms  Shutter efficiency 99.9%  Nominal frame rate 3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC 10b  Data output 80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Pixel	13.7 um pitch 7T shutter pixel with CDS
Responsivity 25V/lux-sec @ 550 nm  QE 30% @ 550 nm  PRNU 1.5% rms  Shutter efficiency 99.9%  Nominal frame rate 3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC 10b  Data output 80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Full well	20,000e-
QE 30% @ 550 nm  PRNU 1.5% rms  Shutter efficiency 99.9%  Nominal frame rate 3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC 10b  Data output 80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Read noise	14e-
PRNU 1.5% rms  Shutter efficiency 99.9%  Nominal frame rate 3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC 10b  Data output 80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Responsivity	25V/lux-sec @ 550 nm
Shutter efficiency 99.9%  Nominal frame rate 3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC 10b  Data output 80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	QE	30% @ 550 nm
Nominal frame rate  3,500FPS @ 1280 × 864 9,000FPS @1184 × 384  Column parallel ADC  10b  Data output  80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option  YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing  Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate  133 MHz  Power supply  3.3V Analog, 1.8V digital  Power consumption  2.5W  Package  361 uPGA, 36mm size 345 uPGA, 30mm size	PRNU	1.5% rms
9,000FPS @1184 × 384  Column parallel ADC  10b  Data output  80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option  YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate  133 MHz  Power supply  3.3V Analog, 1.8V digital  Power consumption  2.5W  Package  361 uPGA, 36mm size 345 uPGA, 30mm size	Shutter efficiency	99.9%
Column parallel ADC  Data output  80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option  YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Vindowing  Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate  133 MHz  Power supply  3.3V Analog, 1.8V digital  Power consumption  2.5W  Package  361 uPGA, 36mm size 345 uPGA, 30mm size	Nominal frame rate	3,500FPS @ 1280 × 864
Data output  80 LVDS ports @540 MHz for 10-b output 64 LVDS ports for 8-b output  Multiplexed output option  YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate  133 MHz  Power supply  3.3V Analog, 1.8V digital  Power consumption  2.5W  Package  361 uPGA, 36mm size 345 uPGA, 30mm size		9,000FPS @1184 × 384
Multiplexed output option YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Column parallel ADC	10b
Multiplexed output option  YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)  Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate  133 MHz  Power supply  3.3V Analog, 1.8V digital  Power consumption  2.5W  Package  361 uPGA, 36mm size 345 uPGA, 30mm size	Data output	80 LVDS ports @540 MHz for 10-b output
Windowing Y random access in quanta of 4 rows; X min = 1184 columns, smaller Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size		64 LVDS ports for 8-b output
Xwin by data skip  Nominal clock rate 133 MHz  Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Multiplexed output option	YES, 2:1 (40 LVDS ports @10b @ 2,500 FPS max)
Power supply 3.3V Analog, 1.8V digital  Power consumption 2.5W  Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Windowing	·
Power consumption 2.5W Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Nominal clock rate	133 MHz
Package 361 uPGA, 36mm size 345 uPGA, 30mm size	Power supply	3.3V Analog, 1.8V digital
345 uPGA, 30mm size	Power consumption	2.5W
·	Package	361 uPGA, 36mm size
Color filter RGB or Mono		345 uPGA, 30mm size
	Color filter	RGB or Mono