CHEETAH

RUGGEDIZED CAMERA SERIES

C2880
CMOS 6 MP
Camera Link®

Imperx: *C2880*

The C2880 incorporates the On Semiconductor KAC-06040 CMOS image sensor with a native resolution of 2832 x 2128 in a 1” optical format delivering up to 129 frames per second in either global or rolling shutter mode with either a Camera Link® Deca or PoCL output. Extended dynamic range technology coupled with extremely robust blooming suppression provide clean imagery in even the most severe uncontrolled lighting applications. Cheetah cameras incorporate “smart” wide dynamic range technology which monitors each pixel’s exposure and sets the exposure to one of four user selectable values based on the intensity of the

uncontrolled lighting applications.

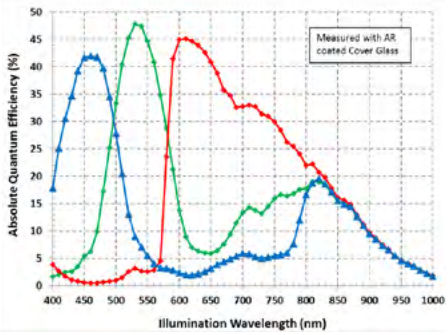
Feature	Description
Interfaces available	Camera Link® Base, Full/Deca (CLF) w/PoCL
Resolution	2832 x 2128
Sensor	KAC-06040, CMOS Color/Mono
Sensor Format	13.1 mm (H) x 10.0 mm (V) 16.65 mm diagonal 1” optical format
Pixel Size	
NIR Sensitivity	850nm: 15%, 950nm: 5%
Shutter	Global shutter (GS), rolling shuter (RS)
Digitization	10 or 12 bit
Frame Rate	50 fps (12 bit), 105 fps (10 bit), 129 fps (8 bit)
Camera Link Clock Rate	85MHz
Dynamic Range	74 dB (RS), 57 dB (GS)
Bit Depth	8, 10, 12 bit
Analog Gain Control	12-bit: 0-12 dB (16 steps); 8 or 10-bit: 0-18 dB (32 steps)
Digital Gain	24 dB (128 steps)
White Balance	Manual, auto, off
Shutter Speed	(RS)
Exposure Control	Off, internal, external
Regions of Interest (ROI)	1 ROI
Averaging Decimation	4:1, 9:1 (both color and monochrome)
Sub-sampling Decimation	N pixels: 2, 4, 6..30 by every M pixels: 2, 4, 6…32
Trigger Inputs	External, pulse generator, software, computer
Trigger Options	Edge, debounce
Trigger Modes	Internal, External, Computer
Wide Dynamic Range	100dB (typ) GS, up to 3 knee points, piecewise linear
External Inputs/Outputs	2 IN (OPTO, LVTTL) / 2 OUT (OPTO, TTL)

Feature	Description
Strobe Output	2 strobes, programmable position and duration
Pulse Generator	Yes, programmable
Image Enhancement	
Data Corrections	Defective/hot pixel correction (static, dynamic)
Lens Mount	C-Mount (Default), F-Mount, M42, EF Canon
Supply Voltage Range	12VDC (5V – 30V), 1.5 A inrush
Camera Current	Typical: 0.44A, Maximum: 0.46A
PoCL	PoCL capable in medium/full mode
Size - Width/Height/Length	72.0mm (W) x 72.0mm (H) x 33.5mm (L) – Applies to all interfaces
Weight	385g
Vibration, Shock	TBD
Environmental	-40°C to +85°C Operating, -50°C to +90°C Storage
Humidity	10% to 90% non-condensing
MTBF	>323,000 hours @ 40°C (Telcordia RS-332)
Military Standard	MIL-STD-810F
Regulatory	FCC Part 15 Class A, CE, RoHs

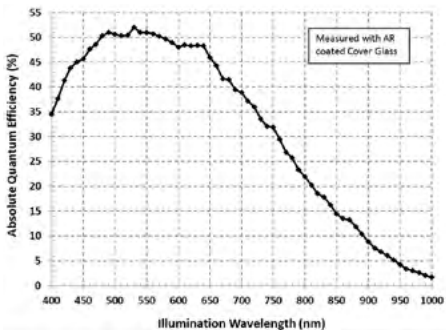
Imperx: *C2880 Applications*

The C2880 incorporates a number of unique features tailored to reduce system complexity, maximize interface bandwidth, and expand the usable operational range.

Color Spectral Response KAC-06040

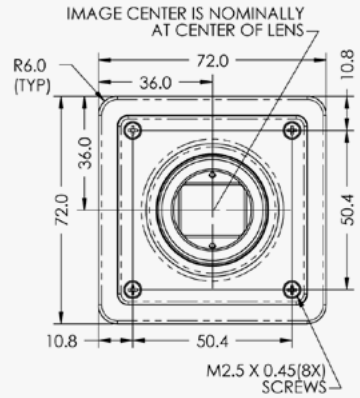


Mono Spectral Response KAC-06040



Dimensions

FRONT



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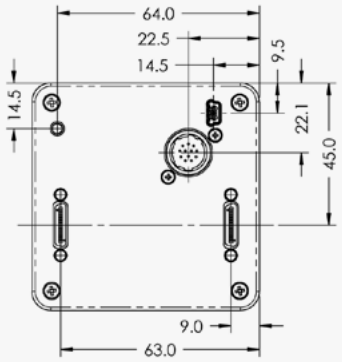
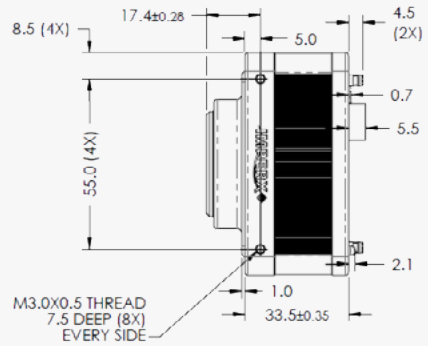


SIDE



Ordering Information

Interface Available

Camera Link® Full (CLF)
USB3 (U3V)

Sensor Types available

Monochrome
Bayer Color

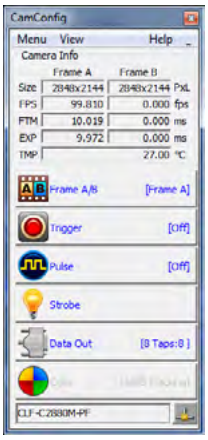
Lens Mounts

C-Mount (Default)
F-Mount
M42
EF Canon

Accessories (Sold separately)

PS12V04A-Power Supply w/ 1 input and 1 output

Software/Drivers/Interface



Hirose Connectors

Power and I/O Interface

1. 12V DC Return
2. +12V DC
3. Reserved
4. Reserved
5. OUT2 OPTO -
6. OUT1 TTL Gnd
7. OUT1 TTL Signal
8. IN1 OPTO +
9. IN2 TTL Signal
10. IN1 OPTO -
11. IN2 TTL Gnd
12. OUT2 OPTO +

Quality Management System ISO 9001:2015 Registered
Environmental Management System ISO 14001:2015 Registered
DDTC Registered (Directorate of Defense Trade Controls, US Department of State)

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CHEETAH

RUGGEDIZED CAMERA SERIES

C2880
CMOS 6 MP
USB3

Imperx: *C2880*

The C2880 incorporates the On Semiconductor KAC-06040 CMOS image sensor with a native resolution of 2832 x 2128 in a 1" optical format. The GenICam™ compliant USB3 camera delivers up to 55 frames per second in either global or rolling shutter mode using the USB3 interface. Extended dynamic range technology coupled with extremely robust blooming suppression produce clean imagery in even the most severe uncontrolled lighting applications. Cheetah cameras incorporate "smart" wide dynamic range technology that monitors each pixel's exposure and sets the exposure to one of four user selectable values based on the intensity of the source at the pixel. The camera also provides two acquisition frames for seamless switching between frames independently. CMOS technology eliminates smear columns from areas of ultra-bright intensity and specular reflections in uncontrolled lighting applications.

Specifications

Feature	Description
Interfaces available	USB3
Resolution	2832 x 2128
Sensor	KAC-06040, CMOS Color/Mono
Sensor Format	13.1 mm (H) x 10.0 mm (V) 16.65 mm diagonal 1" optical format
Pixel Size	4.7 µm
NIR Sensitivity	850nm: 15%, 950nm: 5%
Shutter	Global shutter (GS), rolling shuter (RS)
Digitization	10 or 12 bit
Frame Rate	35 (12 bit), 43 fps (10 bit), 55 fps (8 bit)
Dynamic Range	74 dB (RS), 57 dB (GS)
Bit Depth	8, 10, 12 bit
Analog Gain Control	12-bit: 0-12 dB (16 steps); 8 or 10-bit: 0-18 dB (32 steps)
Digital Gain	24 dB (128 steps)
White Balance	Manual, auto, off
Shutter Speed	1 µs/step, 5 µs to 1.0 sec (GS), 2 µs to 1.0 sec (RS)
Exposure Control	Off, internal, external.
Regions of Interest (ROI)	1 ROI
Averaging Decimation	4:1, 9:1 (both color and monochrome)
Sub-sampling Decimation	N pixels: 2, 4, 6...30 by every M pixels: 2, 4, 6…32
Trigger Inputs	External, pulse generator, software
Trigger Options	Edge, debounce
Trigger Modes	Internal, external, software
Wide Dynamic Range	100dB (typ) GS, up to 3 knee points, piecewise linear
External Inputs/Outputs	2 IN (OPTO, LVTTL) / 2 OUT (OPTO, TTL)

Feature	Description
Strobe Output	2 strobes, programmable position and duration
Pulse Generator	Yes, programmable
Image Enhancement	Vertical/Horizontal flip. Two 12-bit LUT: 1 LUT Pre-programmed with Gamma 0.45
Data Corrections	Defective/hot pixel correction (static, dynamic)
Lens Mount	C-Mount (default), F, M42, EF Canon (passive or active)
Supply Voltage Range	12VDC (5V – 33V), 1.5A inrush without enabled Canon controller 12VDC (6.5V – 33V), 1.5A inrush with enabled Canon controller
Camera Current	Typical: 0.44A, Maximum: 0.46A
Size - Width/Height/Length	72.0mm (W) x 72.0mm (H) x 34.4mm (L) – Applies to all interfaces
Weight	370g
Vibration, Shock	TBD
Environmental	-40°C to +85°C Operating, -50°C to +90°C Storage
Humidity	10% to 90% non-condensing
MTBF	>323,000 hours @ 40°C (Telcordia SR-332)
Military Standard	MIL-STD-810F
Regulatory	FCC Part 15 Class A, CE, RoHs

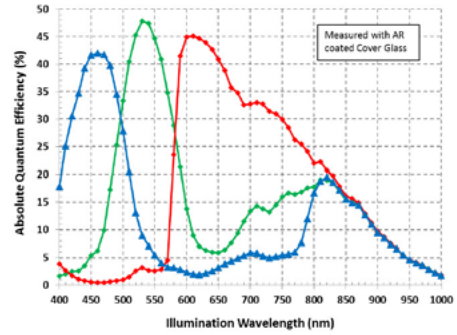
Imperx: *C2880 Applications*

The C2880 incorporates a number of unique features tailored to reduce system complexity, maximize interface bandwidth, and expand the usable operational range.

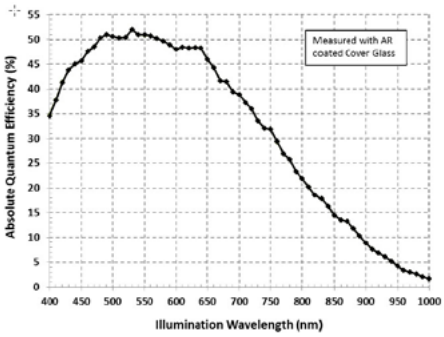
Aerospace ● Satellites ● Surveillance ● Military and Non-Military Ground Vehicles ● Ball Grid Array ● Printed Circuit Board Inspection ● Motion Analysis ● Broadcast Television ● Telepresence ● Unmanned Aerial Vehicles ● Machine Vision ● Reconnaissance ● Aerospace ● Intelligent Traffic Systems ● Aerial Imaging ● Open Road Tolling Systems ● Situational Awareness

Absolute Quantum Efficiency

Color Spectral Response KAC-06040

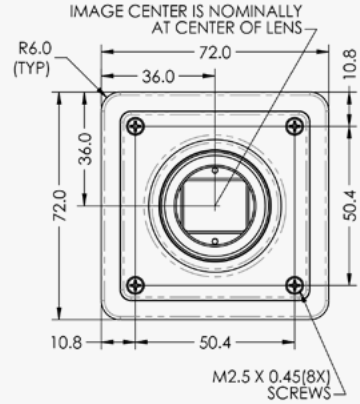


Mono Spectral Response KAC-06040

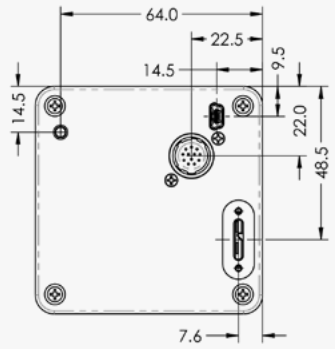


Dimensions

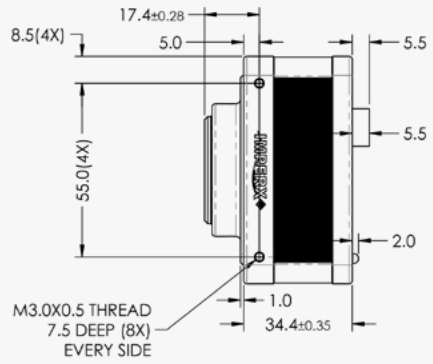
FRONT



BACK



SIDE



Ordering Information

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USB3

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Bayer Color

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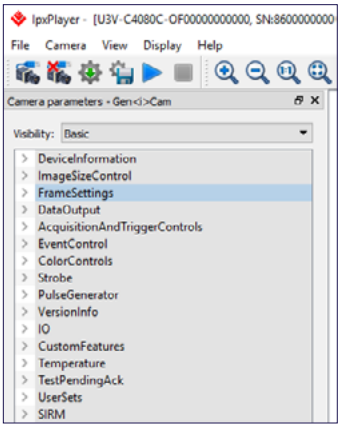
F-Mount
M42
EF Canon

Accessories (Sold separately)

PS12V04A-Power Supply w/ 1 input and 1 output

GenICam Compliant Camera Configurator



Hirose Connectors

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6. OUT1 TTL Gnd
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8. IN1 OPTO +
9. IN2 TTL Signal
10. IN1 OPTO -
11. IN2 TTL Gnd
12. OUT2 OPTO +

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Environmental Management System ISO 14001:2015 Registered
DDTC Registered (Directorate of Defense Trade Controls, US Department of State)

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