# VLS-FPD3-AR0145-SL

TechNexion
INNOVATORS OF TECHNOLOGY

- onsemi AR0145 1MP Global Shutter Sensor
- Captures high-speed dynamic targets clearly within an ultra-short exposure time.
- S-Mount for Interchangeable Lenses
- FAKRA Z-Code Automotive Connector
- Plug & Play with Linux OS & Yocto
- VizionViewer™ configuration utility
- VizionSDK for custom development

VizionSDK   VizionViewer™
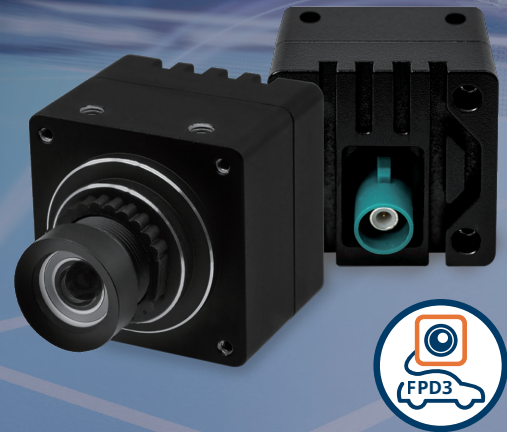
Camera Information

CMOS Sensor	onsemi AR0145
Active Pixels	1280 (H) x 800 (V) = 1 MP
Pixel Size	2.8 µm x 2.8 µm
Illuminated Type	Front Side Illuminated (FSI)
Maximum S/N Ratio	37 dB
Optical Format	1/4.3" (Diagonal 4.23 mm)
Shutter Type	Global Shutter
Chromaticity	Color / Mono
Maximum Frame Rate (YUV422-UYVY)	1280 x 800 @ 115 fps 1280 x 720 @ 115 fps 640 x 480 @ 115 fps
Output Format	YUV422-UYVY RGB888 / RGB565 RAW8 / RAW10 / RAW12

Camera Interface

Serial Link	FPD-Link III
Serializer	TI DS90UB953
Connector	FAKRA SMB Jack Z-Code

Power

Power over Coax	10.8V - 26.4V
Power Consumption	1280 x 800 @ 115 fps ≤ 1.32W
Standby Power	≤ 0.6W Standby

Software Support

Platform Support	NVIDIA Jetson AGX Orin NVIDIA Jetson Orin Nano / NX NVIDIA Jetson Xavier NX NVIDIA Jetson Nano NXP i.MX95 TI Sitara™ AM68 / AM69 TI Jacinto™ TDA4VM / TDA4VH
Operation System	Linux Yocto
Software	VizionViewer™
Development SDK	VizionSDK

Environmental and Mechanical

Dimensions	29.5(W) x 29.5(H) x 28(D) mm
Weight	≤ 45 grams
MTBF	50,000 Hours
Shock	15G half-sine 11 ms duration
Vibration	1 Grms random 5-500Hz hr/axis
Relative Humidity	10 to 90 %
Operating Temperature	-30°C to + 70°C

Certification and Compliance

Certification	Compliant with CE / FCC / RoHS / REACH directives

Spectral Characteristics

Monochrome QE

onsemi AR0145 absolute QE

Quantum Efficiency (%) vs Wavelength (nm)

Block Diagram

COAX

FAKRA
Z-Code

FPD-Link III

µ
Controller

1
MP
Global

ISP

M12
Lens

Dimensions (units in mm)

15.0

2 x M3x0.5p-dp3mm

3.8

29.5
24.0

24.0
29.5

R2.0

(32.2±0.5)
28.0
24.0

Lens Ring

Lens (M12x0.5p-thread)

6.0

FAKRA Z-code

3.8

2 x M3x0.5p-dp3mm

15.0
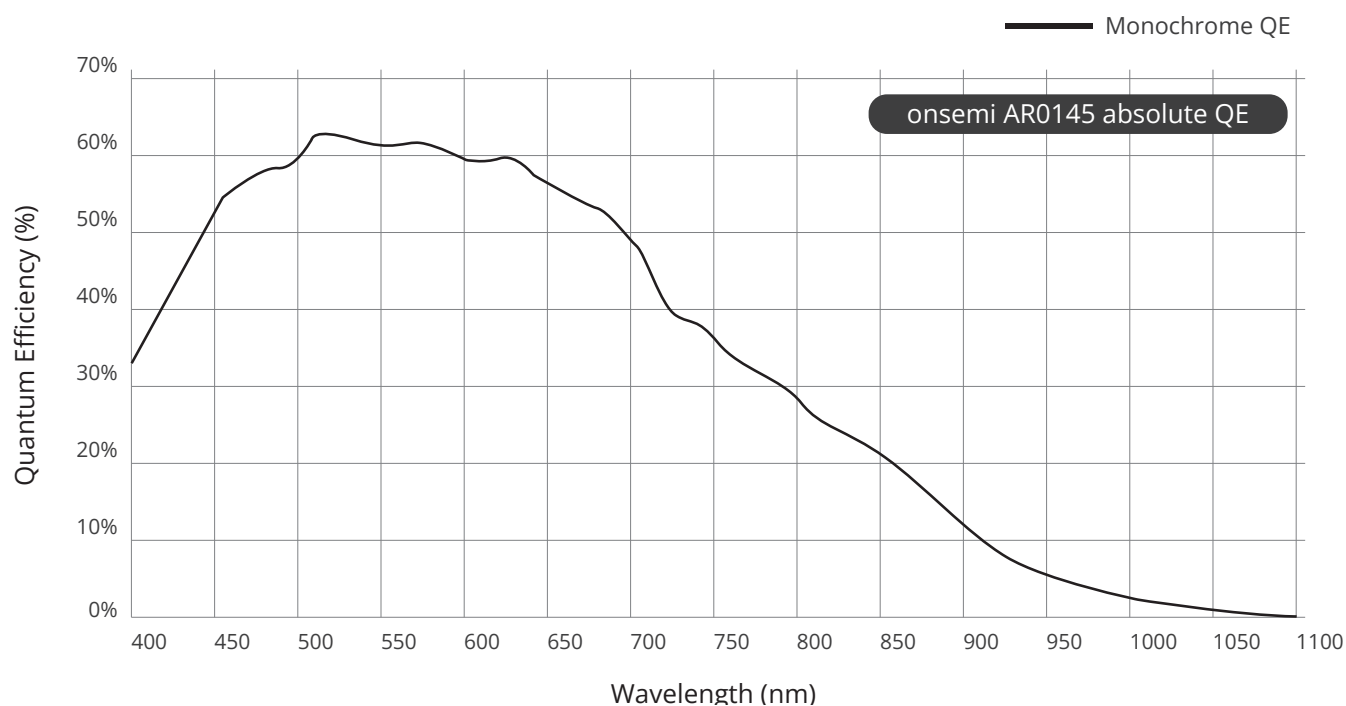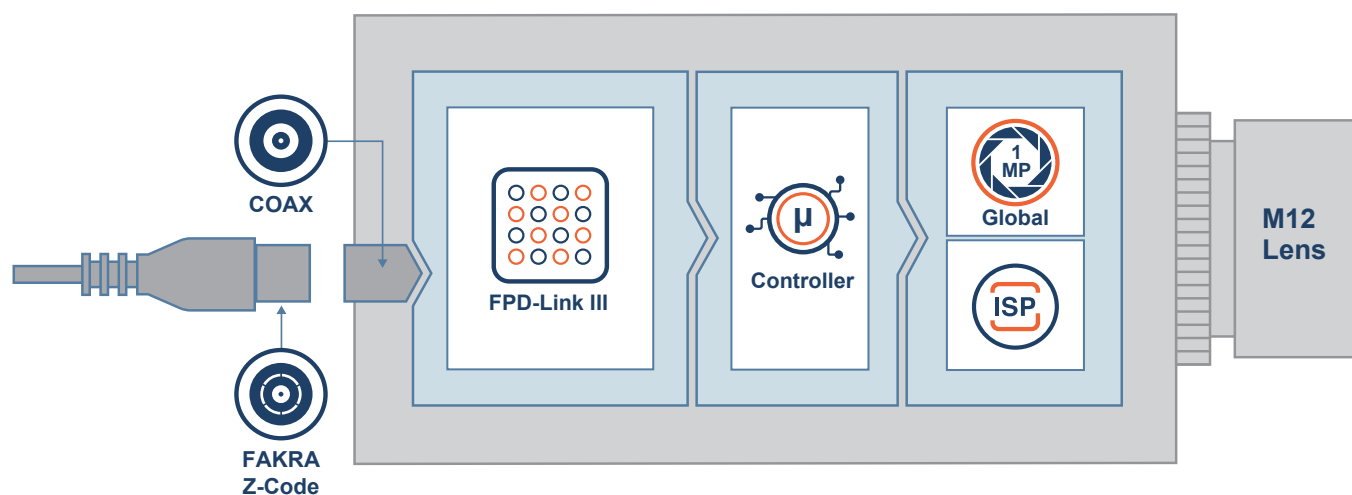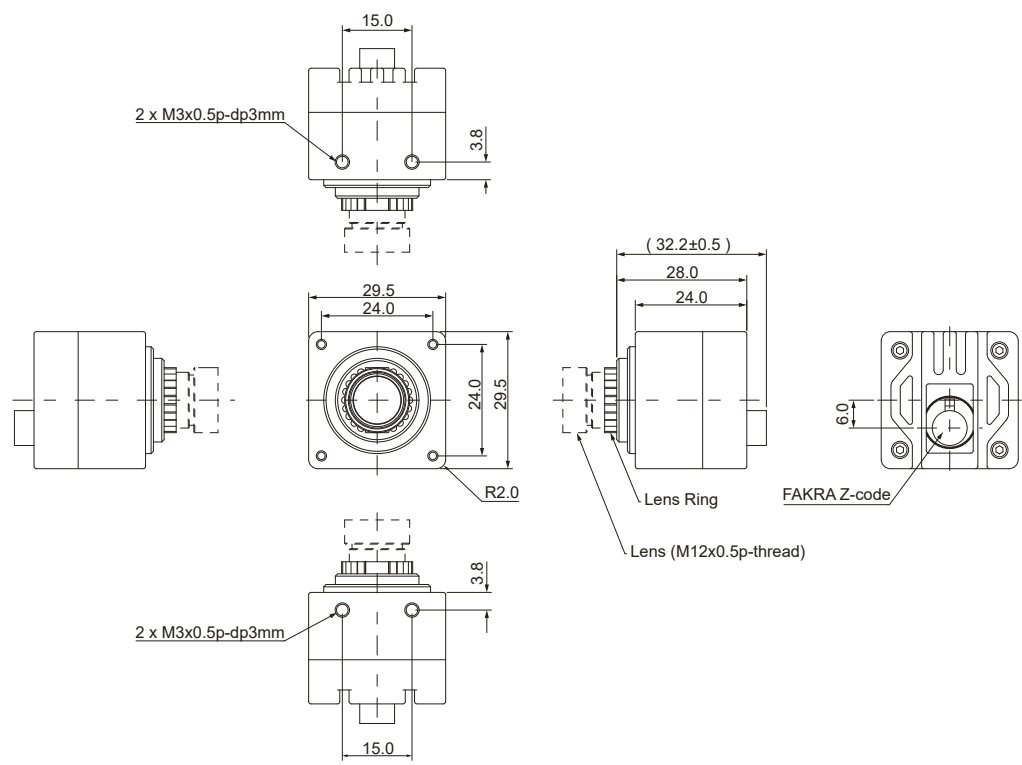
Order Information

VLS-FPD3-AR0145-x-Sxx-xx-xxxx

Option	Code	Description
Chromaticity	C	Color
	M	Monochrome
Lens	S31	S-Mount Module D-FOV 31°
	S78	S-Mount Module D-FOV 78°
Filter	-	-
	IR	IR Cut Filter 650nm
Custom ID	xxxx	Custom Part number ID

For customization, please contact your TechNexion sales representative.

Optional Accessories

An easy to attach A-Mount bracket for TechNexion 30mm enclosed cameras.

300-MOUNT-BRACKET

300-MOUNT-BRACKET on tripod
(tripod not included)

Custom Lens Solutions

	VLS-FPD3-AR0145-M-S31-IR	VLS-FPD3-AR0145-M-S78-IR
Focus Type	Fixed Focus	Fixed Focus
Focal Length	8 mm	2.85 mm
Aperture	F1.6	F2.8
Module D-FOV	31.2° ± 5%	78.2° ± 5%
Module H-FOV	26.3° ± 5%	69.5° ± 5%
Module V-FOV	16.3° ± 5%	47.1° ± 5%
TTL	26.2 mm	20 mm
BFL	7.8 mm	2.03 mm
MOD	0.3 m	0.3 m
Distortion	<-5.03%	<-0.35%
IR-Filter	650 nm	650 nm
Lens Structure	6G + IR	2G + 3P + IR
First layer material	Glass	Plastic

FPD-Link III Frame Grabbers

The ease of usage, benefits and integration of a FPD-Link III camera in embedded systems is often made complex by the lack of FPD-Link ports and connectors on the system. For those scenarios TechNexion developed a framegrabber that easily plug into a USB port and extend the system with FPD-Link interconnect.

Up to 15m
Up to 15 meters of data and power transmission over a single COAX cable.

Software
Linux and Yocto systems are supported.

UVC Compliant
Fully plug-n-play in Windows and Linux embedded systems.

VizionViewer™
Easy to use software utility providing you with granular camera settings control.

Autodetect
Zero configuration required to detect any specific TechNexion FPD-Link camera by the framegrabber.

VizionSDK
Hardcode and control your cameras with C# and Python code.

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