



AR-01-014

- Onsemi AR0144 1MP Sensor
- Global Shutter
- Standard M7 Threaded Lens Mount
- 160° Wide Field of View
- Available in Color or Monochrome



NDAA Compliant



Product Summary

This compact, high-performance camera module is built around the onsemi AR0144—a 1-megapixel global shutter image sensor designed for fast, accurate capture of dynamic scenes. With support for both monochrome and color variants, it delivers sharp, low-distortion imaging even under fast motion or challenging lighting conditions.

Featuring a wide 160° field of view through a standard M7 lens, the module is ideal for applications like robotics, drones, industrial automation, and smart vision systems. The global shutter architecture eliminates motion blur, making it well-suited for object tracking, machine vision, and SLAM.

The camera connects via a 2-lane MIPI CSI-2 interface for seamless integration into modern embedded platforms. It's also fully NDAA compliant, meeting regulatory and supply chain requirements for secure and unrestricted deployment.

Designed for developers who demand speed, clarity, and reliability—this AR0144 camera module offers a balance of performance and flexibility in a compact, ready-to-integrate package. It delivers all of that at a fraction of the cost of comparable global shutter modules.

Specifications

Image Sensor

CMOS Sensor	onsemi AR0144
Shutter Type	CMOS Global Shutter
Resolution	1 MP 1280 x 800 px
Pixel Size	3 μ m x 3 μ m
Optical Format	1/4"
Chromacity	Color or Monochrome
Bit Depth	10/12 bit
Framerate	60 FPS (2 Lane)

Camera Interface

Input Voltage	V_{DD} 1.20V (1.14V - 1.26V) V_{IO} 1.8V (1.7V - 1.9V) V_{ANA} 2.8V (2.5V - 3.1V)
Drive Frequency	6 - 48 MHz
Data Interface	MIPI CSI-2 1 / 2 Lane
Communication Interface	I ² C (CCI)
Connector PN	DF40C-30DP-0.4V(51)
Mating Connector PN	DF40C-30DS-0.4V(51)

Mechanical & Environmental

Dimensions	10 mm W x 35 mm H x 10.03 mm D
Weight	TBD
Operating Temperature	-40° to +85° C
Storage Temperature	-40° to +150° C
Ambient Humidity	20% to 95% RH

Lens

Field of View	160° Diagonal 141° Horizontal 100° Vertical
F/No.	2.4
CRA	35.2°
TV Distortion	<-25%
Effective Focal Length	1.385mm
IR-Cut Filter	650±10nm Ta=50%
Mount Style	M7
Factory Focus Range	TBD

Software Support

Driver	V4L2 Based Device Driver Libargus / Argus Camera Isaac ROS Compliant
Supported Platforms	NVIDIA Jetson Family ModalAI VOXL 2 Qualcomm Robotics Platforms

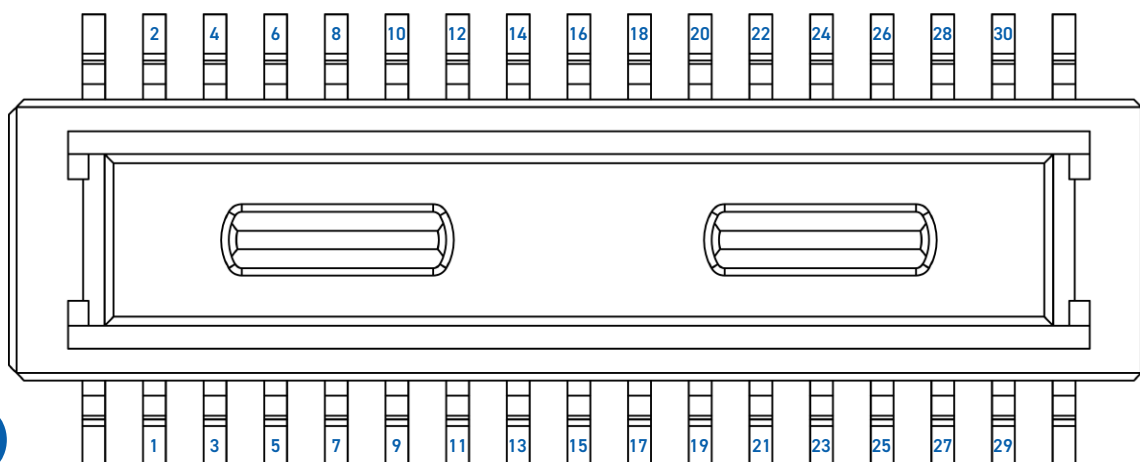
Compliance & Manufacturing

Country of Origin	Indonesia Option for Mexico or USA Available
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Connector Pinout



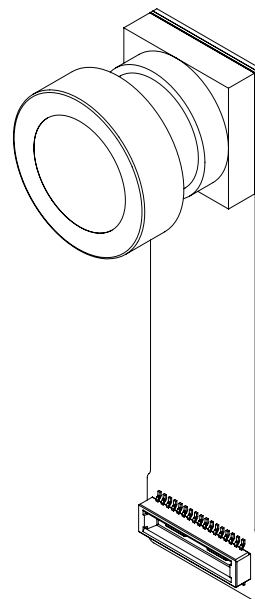
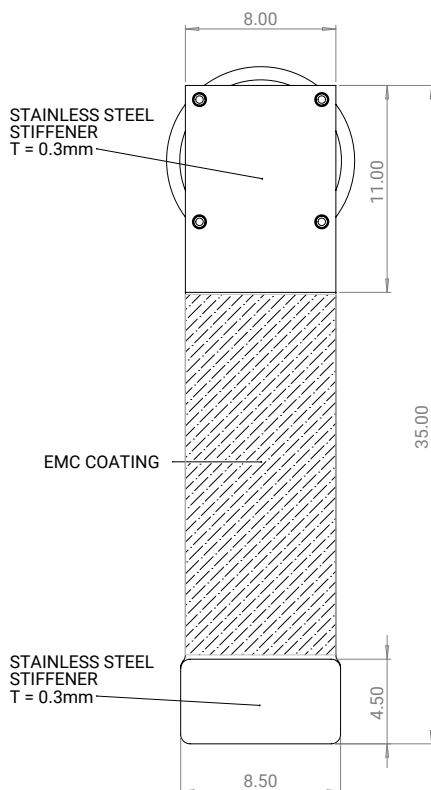
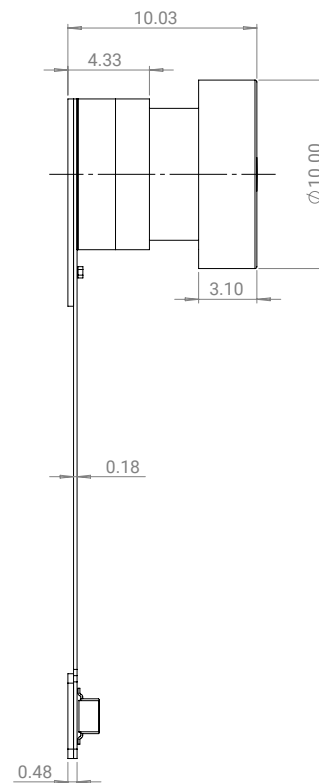
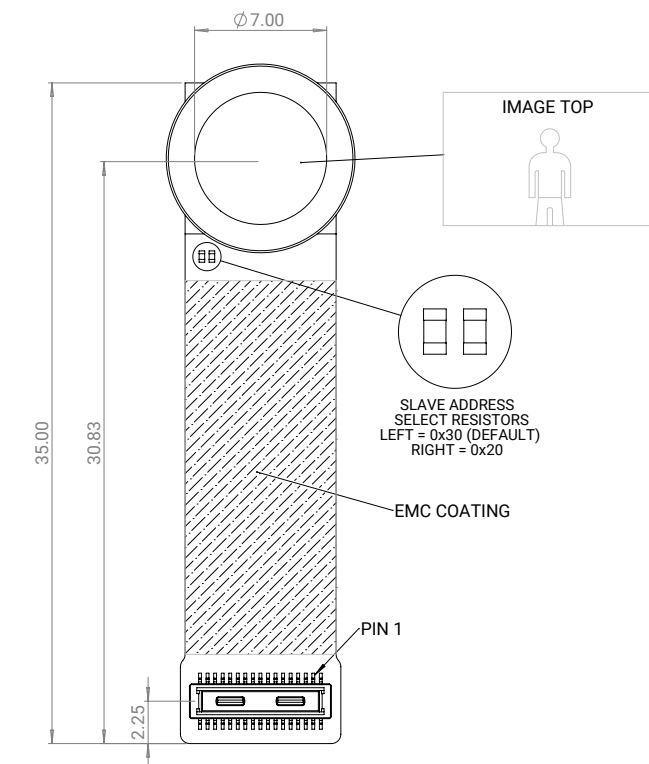
Pin 1 Indicator
On Silkscreen



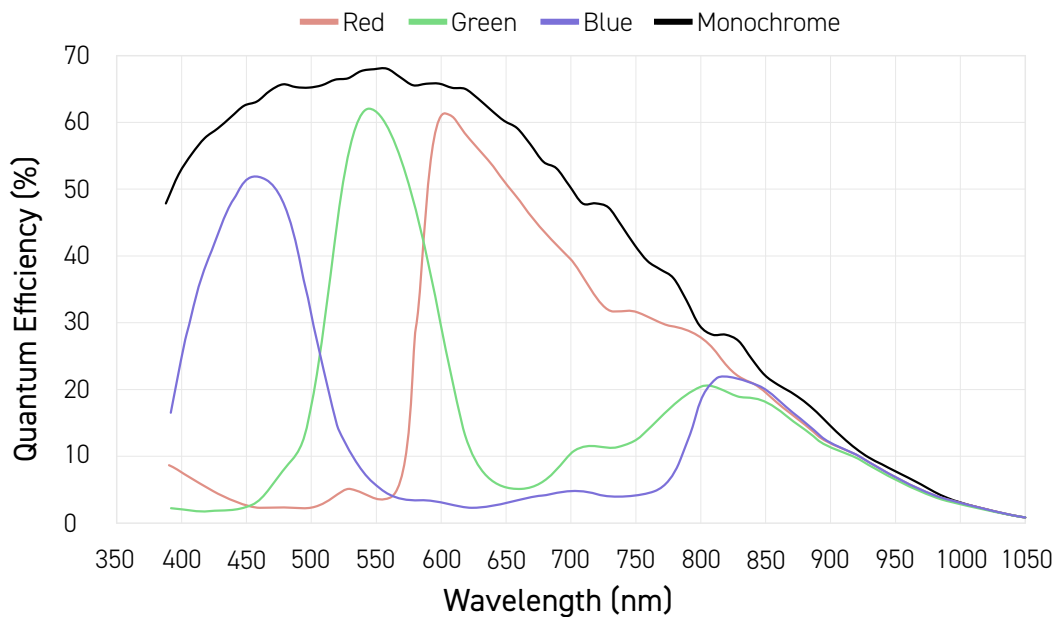
DF40C-30DP-0.4V(51)

Pin No.	Assignment	Description	Pin No.	Assignment	Description
1	GND	Ground	2	GND	Ground
3	MIPI_DCK_P	MIPI Output CLK+	4	NC	No Connect
5	MIPI_DCK_N	MIPI Output CLK-	6	+1V8	V _{IO} 1.8V Input Voltage
7	GND	Ground	8	+1V2	V _{DD} 1.2V Input Voltage
9	MIPI_DM01_P	MIPI Output DATA1+	10	EXTCLK	External Input Clock
11	MIPI_DM01_N	MIPI Output DATA1-	12	GND	Ground
13	GND	Ground	14	FLASH	Camera Flash Signal
15	MIPI_DM02_P	MIPI Output DATA2+	16	TRIGGER	AR0144 Trigger Signal
17	MIPI_DM02_N	MIPI Output DATA2-	18	NC	No Connect
19	GND	Ground	20	+2V8	V _{ANA} 2.8V Input Voltage
21	NC	No Connect	22	SADDR	Slave Address (LOW=0x20, NC=0x30)
23	NC	No Connect	24	I2C_SDA	I ² C Data Input/Output
25	GND	Ground	26	I2C_SCL	I ² C Clock Input
27	NC	No Connect	28	GND	Ground
29	NC	No Connect	30	RST_N	Reset Signal

Mechanical Drawing



Spectral Sensitivity Characteristic



Ordering Information

Part Number

AR-01-014-M

Description

Chromacity: Monochrome

Lens: 160° Wide Angle with IR Cut Filter

AR-01-014-C

Chromacity: Color

Lens: 160° Wide Angle with IR Cut Filter