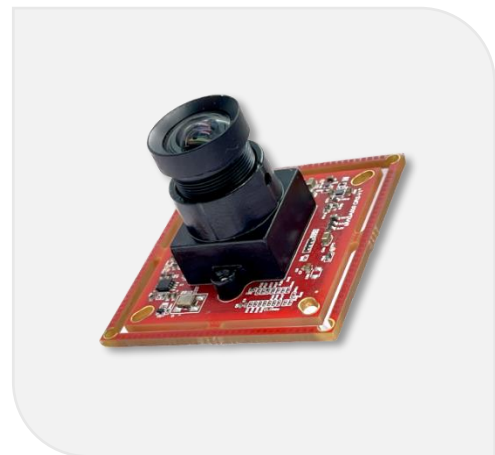


8MP Color Hyperlux LP MIPI Camera based on Onsemi AR0830 Sensor

Vadzo Bolt-830CRS is a 4K Hyperlux LP MIPI Camera based on Onsemi AR0830 Sensor coupled with high-performance ISP. The camera delivers a max resolution of 8MP and Video streaming of 4K, 1080p and 720p. Applicable in use cases such as Videoconferencing Cameras, Machine Vision Cameras, Wearable Cameras, Retail In-store Cameras, Facial Recognition Cameras, etc. Bolt-830CRS has been integrated with solutions based on platforms such as Raspberry PI, Nvidia Nano, Nvidia XavierNX, etc.

Key Features

- Sensor Model: AR0830 Onsemi Sensor
- Max Resolution: 8MP
- Pixel Size: 1.4 μm x 1.4 μm
- Shutter: Rolling Shutter
- Lens FOV: 74 DFOV
- Compliance: RoHS 3, REACH



Applications

- **Smart Security Camera:** Wearables, Vision-based Biometrics, Smart Access, Facial Recognition, Day/night Video Recording, Smart Parking, Pedestrian Safety.
- **Retail In-store Camera:** Customer Behaviour, Inventory Management, Self-checkout Systems.
- **Machine Vision Camera:** Product Inspection & Quality Control, Assembly Robots, AGVs (Automated Guided Vehicles).
- **Kiosk Camera:** Retail Kiosks, Document Scanning, OCR, Barcode Reading, Facial Recognition, Demographic Analysis.
- **Digital Signage Camera:** Interactive Advertising, Facial Recognition, Audience Measurement, Demographic Analysis.

INDEX

1. Introduction 3

2. Camera Specifications 3

3. Supported Resolutions 4

4. Supported Camera Functions 5

5. MIPI Interface 5

6. Status LED 5

7. Temperature and Humidity Specifications 5

8. Dimensions..... 6

 Board Top Side – 2D 6

 Board Bottom Side - 2D 6

 ATR Board 2-Lane Top Side – 2D 7

 ATR Board 2-Lane Bottom Side – 2D 7

 ATR Board 4-Lane Top Side – 2D 8

 ATR Board 4-Lane Bottom Side – 2D 8

1. Introduction

Bolt-830CRS is a MIPI Fixed-Focus color camera based on Onsemi AR0830 sensor. The camera supports 100+dB Dynamic Range.

The camera incorporates the AR0830 sensor from Onsemi integrated with an on-board Image Signal Processor (ISP) to perform functions such as Wake on Motion (WOM), context switching and multiple subsampling modes and so on. In addition to this, the ISP also supports Auto functions such as Auto-Exposure and Auto-White Balance.

This is a two-board camera solution that comprises of the camera module board and the adapter board. There are two variants of the adapter board to 2-Lane MIPI CSI 2 as well as 4-Lane MIPI CSI 2 interfaces.

2. Camera Specifications

General Information	
Product Family	Bolt series
Camera Model	Vadzo Bolt-830CRS
Sensor	
Sensor	AR0830 Sensor from Onsemi
Sensor Format	1/2.9"
Pixel Size	1.4 μm x 1.4 μm
Max Resolution	8MP – 3840(H) x 2160(V)
Shutter	Rolling Shutter
Chroma	Color
Camera Data	
Interface	2 Lane MIPI CSI-2 & 4 Lane MIPI CSI-2
Pixel Depth	10bit
Output Format	YUV422
Exposure Control	Manual Control via software & Auto-Exposure
GPIO	2 x NC
Camera Hardware	

Lens	S Mount (M12 Standard)
MIPI connector	686115148922 (2 Lane) & F305-1A7H1-21022-E100 (4 Lane)
Power Requirement	Max: 1.45 W at 3.3VDC Min: 0.80 W at 3.3VDC
Operating Temperature	-30 ⁰ C to 70 ⁰ C
Dimension	38mm (L) x 38mm (B) convertible to 32mm (L) x 32mm (B)
Weight	13 Grams (Without Lens)
Camera Software	
Video Resolutions	VGA, HD, Full HD and 4K
Video formats	YUV422
Still Image Resolutions	VGA, HD, Full HD and 4K
Image Capture formats	BMP
Image Capture Modes	Software trigger
Camera Controls	Brightness, Exposure, Contrast, Sharpness, Saturation, Gamma, Gain, White Balance, Denoising
Conformity	
Conformity	RoHS 3, REACH

3. Supported Resolutions

Resolution	Frame Rates (FPS) in 4-Lane MIPI CSI 2
	YUV 422
640 x 480 (VGA)	90
1280 x 720 (HD)	60
1920 x 1080 (FHD)	60
3840 x 2160 (4K)	30

4. Supported Camera Functions

The List of functions supported by the Bolt-821CRS camera are:

- Resolution Control
- Image Format Setting
- Video Format Setting – YUV422
- Gain – Auto & Manual
- Exposure – Auto & Manual
- White Balance – Auto & Manual
- Anti Flicker – 50Hz/60Hz
- Contrast Control
- Gamma Control
- Saturation Control
- Sharpness Control

5. MIPI Interface

The camera module supports both 4-Lane MIPI CSI 2 as well as 2-Lane MIPI CSI 2 interface. Vadzo has designed the camera hardware such that it can be directly integrated with Raspberry PI as well Nvidia Jetson development kit via the 2-Lane MIPI CSI 2 interface. Vadzo has integrated the capability of functioning in the 4-Lane MIPI CSI 2 bandwidth as well to ensure that you can achieve faster frame rates.

6. Status LED

Status LEDs indicate the below:

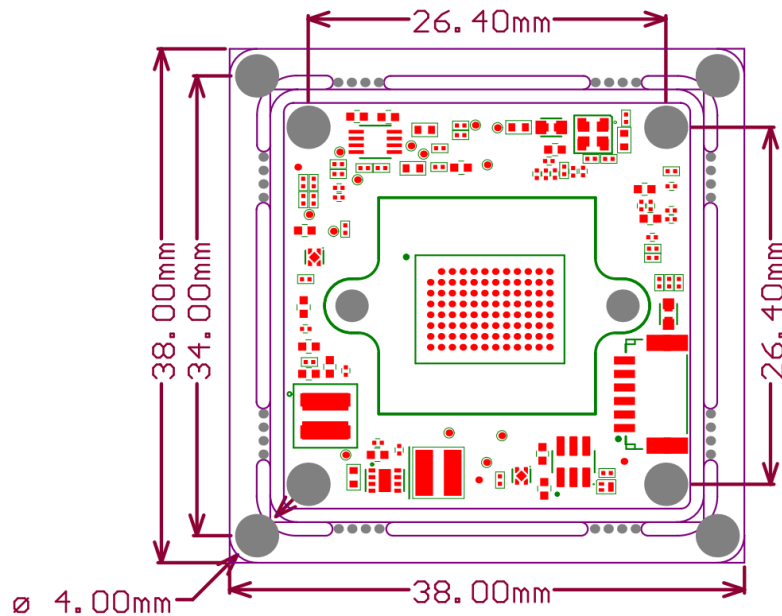
- Red color indicates Device is powered ON with no Streaming.
- Yellow color indicates: Camera is currently Streaming.

7. Temperature and Humidity Specifications

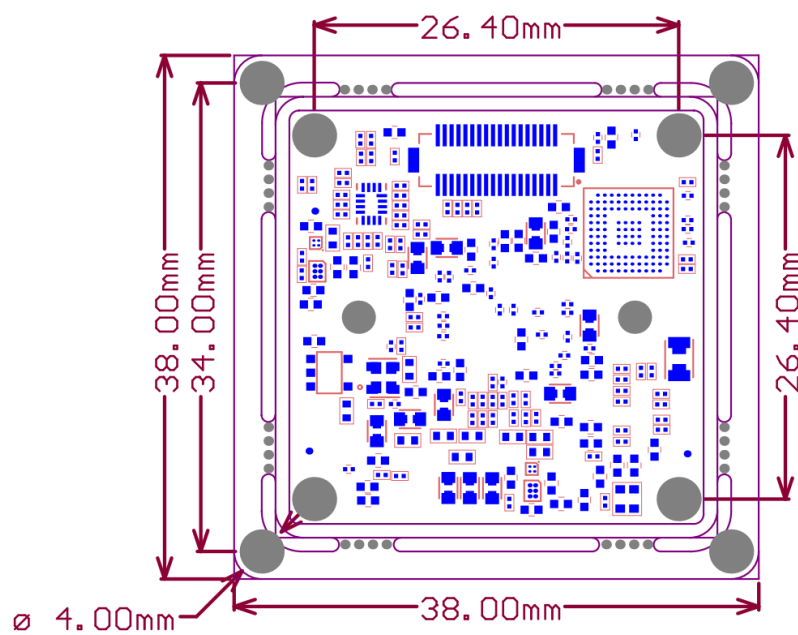
Description	Specification
Operating Temperature	-30 ⁰ C to 70 ⁰ C
Storage Temperature	-30 ⁰ C to 70 ⁰ C
Humidity	20% to 80%, Relative, non-condensing.

8. Dimensions

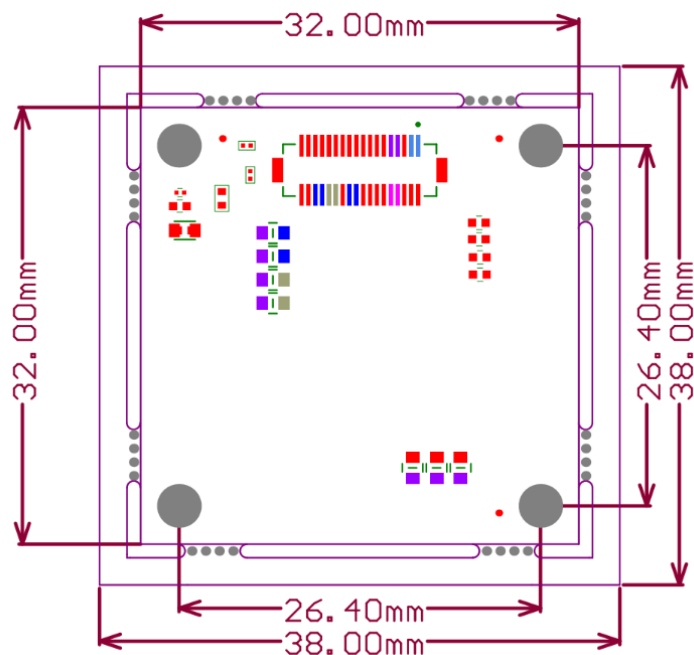
Board Top Side – 2D



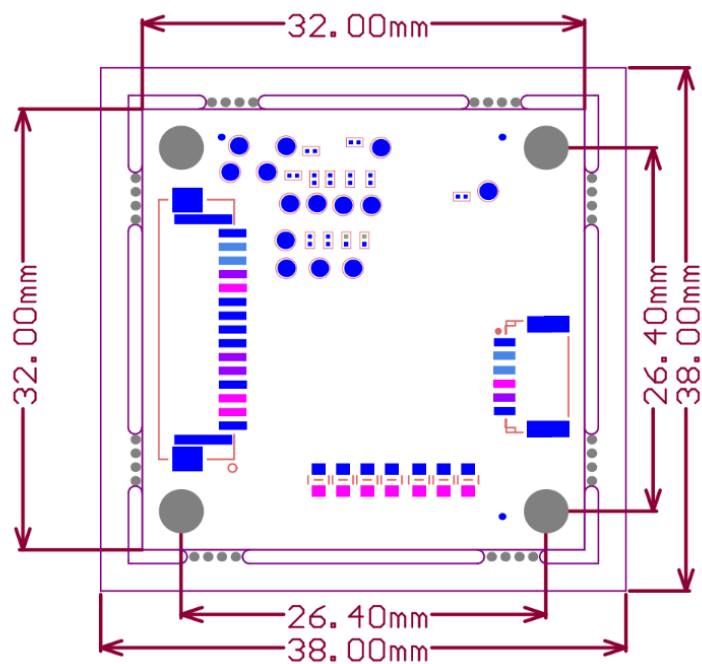
Board Bottom Side - 2D



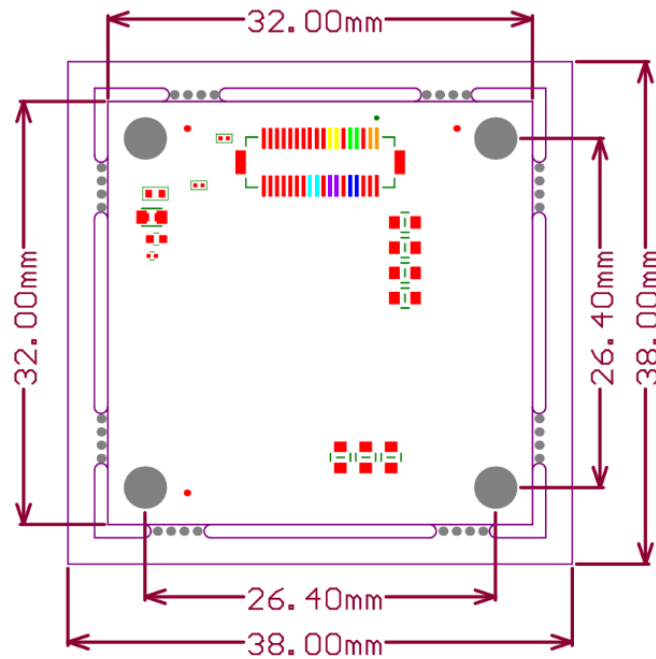
ATR Board 2-Lane Top Side – 2D



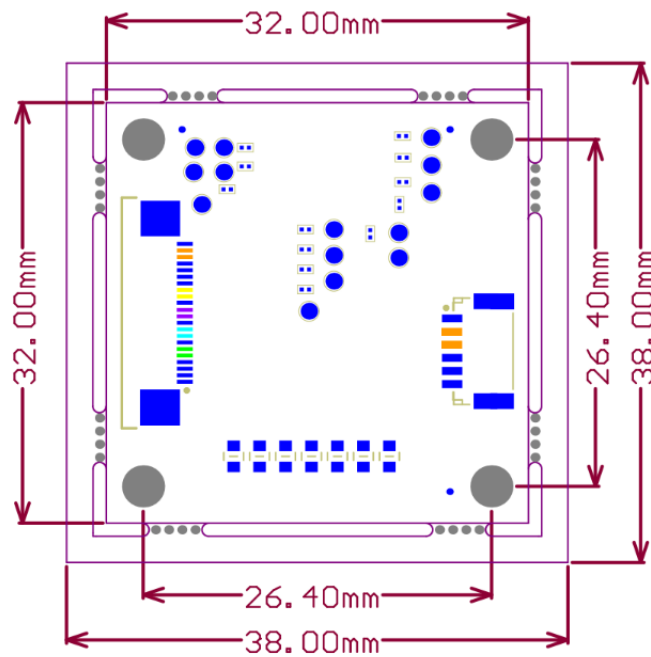
ATR Board 2-Lane Bottom Side – 2D



ATR Board 4-Lane Top Side – 2D



ATR Board 4-Lane Bottom Side – 2D



IMPORTANT NOTICE AND DISCLAIMER

Vadzo Imaging products are sold by description only. Vadzo Imaging reserves the right to change the information in this document, including URL references and/or specifications is subject to change without notice. Customers should obtain the latest relevant information and data sheets before placing orders and should verify that such information is current and complete.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

THIS DOCUMENT IS PROVIDED AS IS WITH NO WARRANTIES WHATSOEVER, INCLUDING ANY WARRANTY OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY WARRANTY OTHERWISE ARISING OUT OF ANY PROPOSAL, SPECIFICATION, OR SAMPLE.

All liability, including liability for infringement of any proprietary rights, relating to the use of information in this document is disclaimed. No licenses express or implied, by estoppel or otherwise, to any intellectual property rights are granted herein.

All trade names, trademarks, and registered trademarks mentioned in this document are the property of their respective owners and are hereby acknowledged.



Copyright © 2017–2026 Vadzo Imaging. All Rights Reserved.