

# DESIGNCORE<sup>®</sup>

## D3RCM-IMX390-953 RUGGED CAMERA MODULE



**IMX390 camera module  
for performance-critical  
embedded vision**

### Ruggedized, fully-enclosed 2.1 MP FPD-Link™ III camera suits automotive and industrial applications

This Rugged Camera Module is designed for automotive and performance-critical industrial applications. It has superior thermal characteristics and the production version will be able to withstand harsh environmental conditions.

#### **Use Limitation Notice:**

D3RCM-IMX390-953 rugged camera modules 1000843 and 1000985 are available as pre-production prototypes. They are intended for mechanical, optical and functional product development use only. These cameras currently have known environmental limitations and are not suitable for exposure to harsh environmental use cases such as high moisture or wet environments. Exposure to these environments may cause damage to the camera functionality.

The digital video stream, control data, and power are carried by coaxial cable between the camera module and vehicle/system electronic control unit (ECU). The lens and electronic components are housed in a rugged enclosure with integrated FAKRA connector for connection to the ECU wire harness.

#### FEATURES

- SONY<sup>®</sup> IMX390 image sensor
- DS90UB953 FPD-Link™ III serializer
- Very small size
- Ultra-lightweight (<10 g excluding lens)
- Excellent thermal management
- Perfect camera axis alignment

#### APPLICATIONS

- Automotive Driver Assistance Systems (ADAS)
- Mirror replacement
- Industrial autonomous vehicles
- Unattended surveillance
- Process automation
- Machine vision

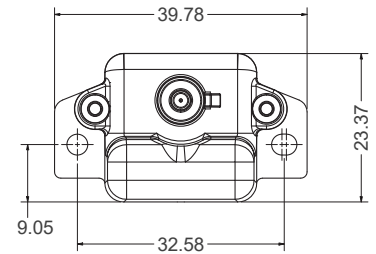
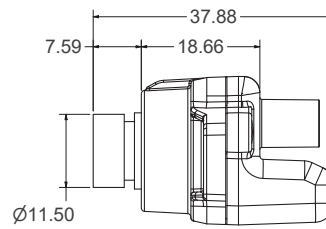
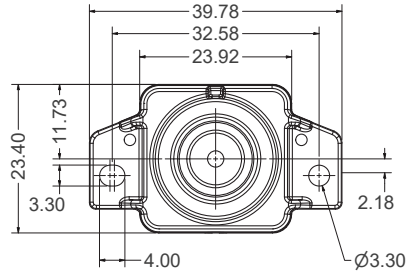
#### SPECIFICATIONS

<b>Sensor</b>	<b>SONY<sup>®</sup> IMX390</b>	
Optical Format	1/2.7 inch	
Resolution	1920 × 1200	
Pixel Size	3.0 × 3.0 μm	
Data Output Format	10\12\20\24-bit RAW Normal and HDR Output Internal HDR Composition	
Maximum Readout	10b(ADC) – 1920 × 1080 – RAW24 – 60 fps 12b(ADC) – 1920 × 1080 – RAW24 – 40 fps	
Imager ISP	External	
Serializer	FPD-Link™ III DS90UB953A	
Device Comms Addresses	Serializer (DS90UB953): 0x18 (7b) Sensor (IMX390): 0x1A (7b)	
Connector	FAKRA Straight Plug Connector Interface Code – Z	
Operating Voltage	+5 V to +12 V (+12 V typical)	
Power consumption	<1.5 W at maximum data rate	
Operating temperature	–40°C to 85°C	
Storage temperature	–40°C to 105°C	
Additional Features	External frame synchronization	

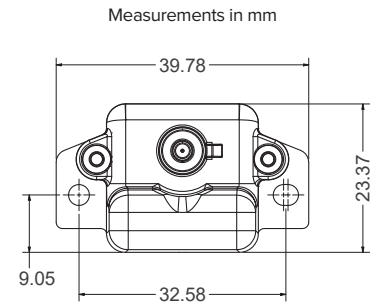
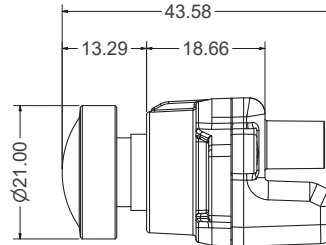
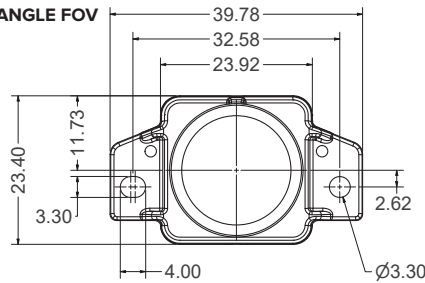
#### LENS SPECIFICATIONS

Lens	DSL239Q-650-F2.4 (Lens include IR-cut at 650nm)	DSL958V-650-F2.8 (Lens include IR-cut at 650nm)
Field of View (FOV)	192° horizontal	70° horizontal
Lens Aperture (F#)	2.4	2.8
Focal Length	1.83 mm	4.6 mm

**NARROW ANGLE FOV**

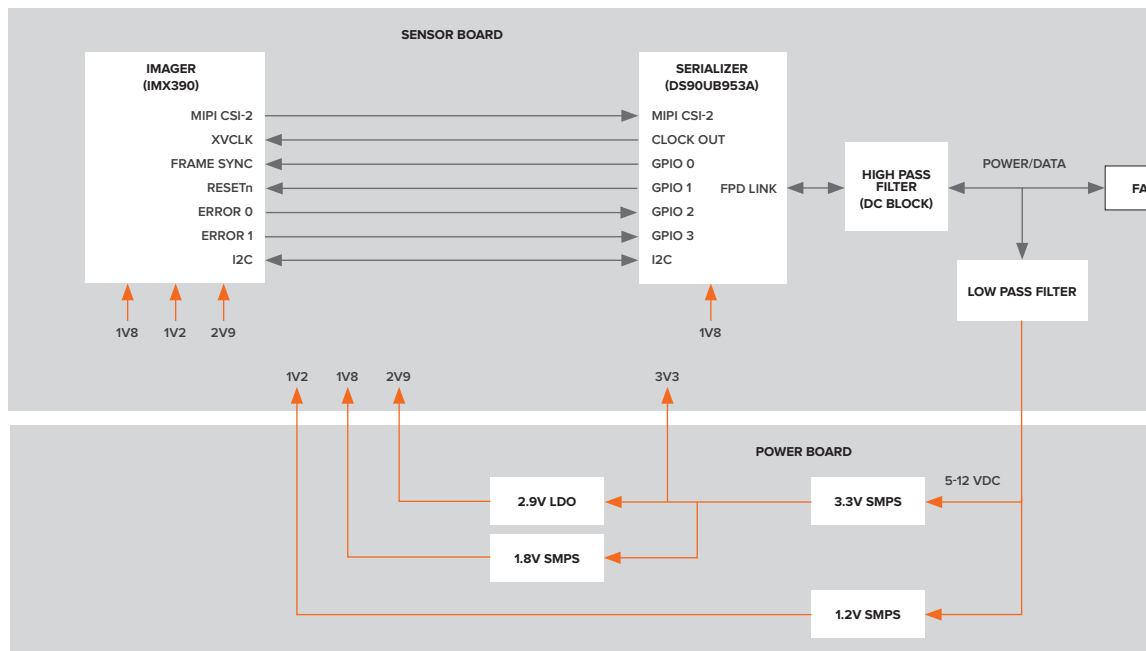


**WIDE ANGLE FOV**



Measurements in mm

3D model available upon request



**NEXT STEPS**

Purchase samples online and contact us for volume pricing. We can support integration of D3 Camera Modules into your end product with services including custom ISP tuning, software drivers, and verification support. We can also help you speed embedded vision system development with our proven DesignCore® vision processor platforms and full-cycle embedded product development services.

**ACCELERATE TIME TO MARKET**

Our expertise in imaging system design will help you get to market faster, while reducing the risks and costs of new product development.

**ORDERING INFORMATION**

SKU 1000843 | 192° FOV (wide angle)  
 SKU 1000985 | 70° FOV (narrow angle)  
 Buy online at <https://d3engineering.com/store>

CALL: 585-429-1550  
 EMAIL: [sales@D3Engineering.com](mailto:sales@D3Engineering.com)  
 VISIT: [D3Engineering.com](https://D3Engineering.com)

**DesignCore® Platforms supported:**

DesignCore® platforms with Intel®, NVIDIA®, and Texas Instruments® processors and SoCs. Visit [d3engineering.com/store](https://d3engineering.com/store) for a complete list of supported platforms for this camera module. Customized processor solutions available.