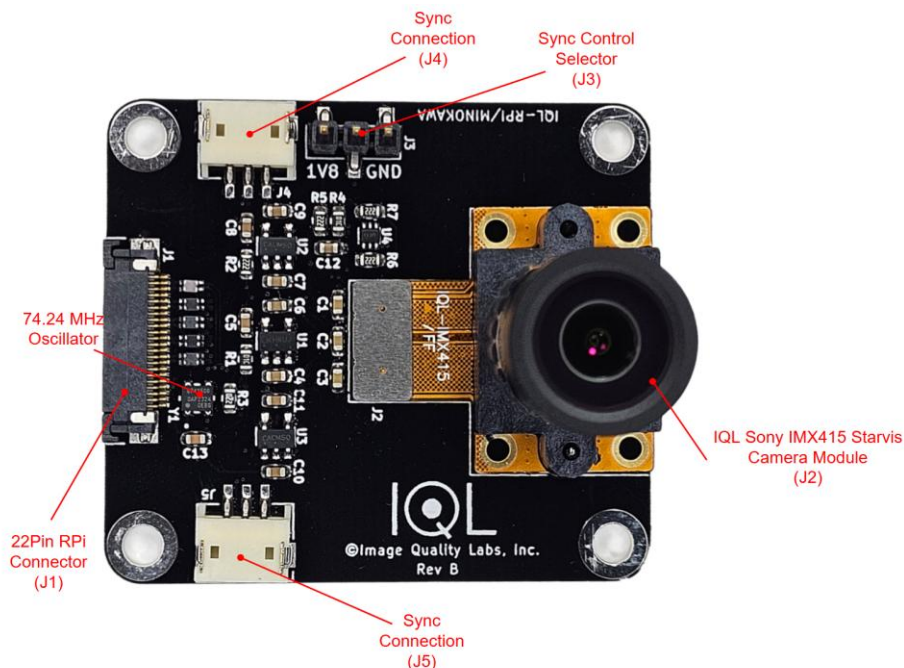




| Part Number            | Body Size       |
|------------------------|-----------------|
| IQL-IMX415/FF/Minokawa | 39.8 mm × 45 mm |

## 1 Description

The [IQL-IMX415/FF/Minokawa](#) interfaces the [IQL-IMX415/FF 8MP Camera Module](#) with a Raspberry Pi. This evaluation/development board is meant to provide a stable platform for driver development and image tuning. There is also a sync connection provided to facilitate the development of multiple synchronized cameras.

## 2 Compatibility

- Raspberry Pi
- Other platforms utilizing Raspberry Pi Camera Interface

## 3 Applications

- Research and Development
- Educational Projects
- Prototype Testing
- Robotics and Automation
- Wildlife and Environmental Monitoring
- Time-lapse and Slow Motion Photography
- IoT devices

## 4 Pin Configurations

### 4.1 22Pin RPi Connector Configuration

| Header | Pin Number | Name     |
|--------|------------|----------|
| J1     | 1          | GND      |
|        | 2          | D0_N     |
|        | 3          | D0_P     |
|        | 4          | GND      |
|        | 5          | D1_N     |
|        | 6          | D1_P     |
|        | 7          | GND      |
|        | 8          | C_N      |
|        | 9          | C_P      |
|        | 10         | GND      |
|        | 11         | D2_N     |
|        | 12         | D2_P     |
|        | 13         | GND      |
|        | 14         | D3_N     |
|        | 15         | D3_P     |
|        | 16         | GND      |
|        | 17         | CAM_GPIO |
|        | 18         | NC       |
|        | 19         | GND      |
|        | 20         | CSI_SCL  |
|        | 21         | CSI_SDA  |
|        | 22         | VCAM     |

## 4.2 Sync Configuration

| Header                                                      | Pin Number | Name    | Description                             |
|-------------------------------------------------------------|------------|---------|-----------------------------------------|
| Sync Control Selector                                       |            |         |                                         |
| J3                                                          | 1          | GND     | See Leader–Follower Mode Settings below |
|                                                             | 2          | XMASTER |                                         |
|                                                             | 3          | 1V8     |                                         |
| Sync Connection (Connector Part Number: S3B-ZR-SM4A-TFLFSN) |            |         |                                         |
| J4                                                          | 1          | XHS     | Horizontal sync signal                  |
|                                                             | 2          | XVS     | Vertical sync signal                    |
|                                                             | 3          | GND     | Ground                                  |
| Sync Connection (Connector Part Number: S3B-ZR-SM4A-TFLFSN) |            |         |                                         |
| J5                                                          | 1          | GND     | Ground                                  |
|                                                             | 2          | XVS     | Vertical sync signal                    |
|                                                             | 3          | XHS     | Horizontal sync signal                  |

| Leader–Follower Mode Settings |                |                |                                    |
|-------------------------------|----------------|----------------|------------------------------------|
| Pin Name                      | Pin Processing | Operating Mode | Remarks                            |
| XMASTER                       | Fixed to Low   | Leader mode    | High: OV <sub>DD</sub><br>Low: GND |
|                               | Fixed to High  | Follower mode  |                                    |

## 5 Electrical Characteristics

### 5.1 Absolute Maximums

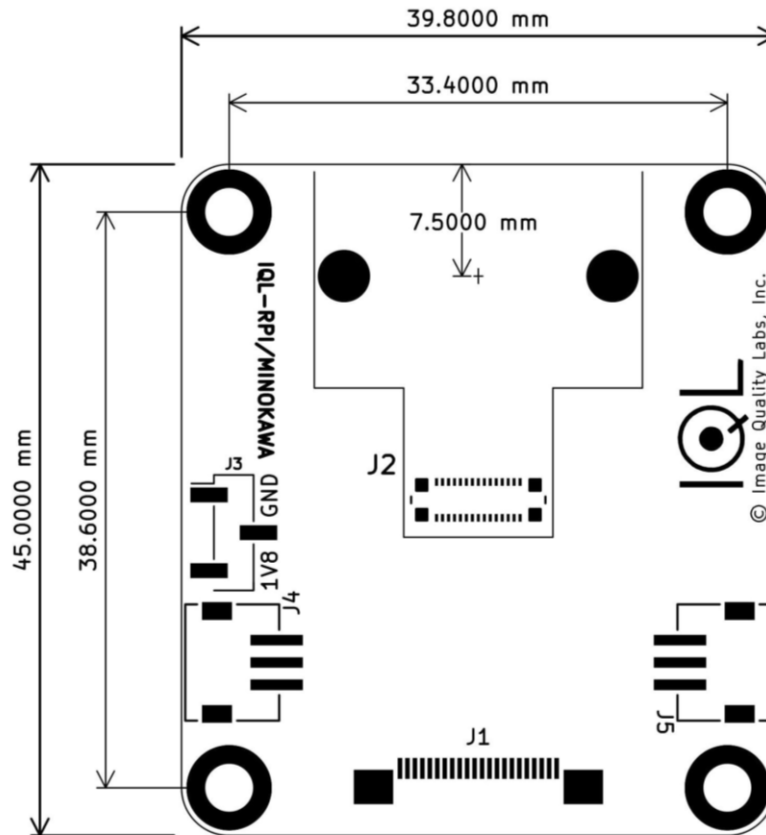
| Net      | Minimum | Maximum | Unit |
|----------|---------|---------|------|
| CAM_GPIO | 0       | 5.5     | V    |
| CSI_SCL  | 0       | 5.5     | V    |
| CSI_SDA  | 0       | 5.5     | V    |
| VCAM     | 3.1     | 5.5     | V    |

### 5.2 Recommended Operating Conditions

| Net      | Minimum | Typical | Maximum | Unit |
|----------|---------|---------|---------|------|
| CAM_GPIO | 1.6     | 3.3     | 5.5     | V    |
| CSI_SCL  | 1.8     | 3.3     | 5.5     | V    |
| CSI_SDA  | 1.8     | 3.3     | 5.5     | V    |
| VCAM     | 3.1     | 3.3     | 3.8     | V    |

Minimum CAM\_GPIO, CSI\_SCL, CSI\_SDA is  $V_{IH}$   
IMX415 Input Clock Frequency: 74.24MHz

## 6 Mechanical Information



## 7 Raspberry Pi 5 Connection (Type B FFC)

