



DATASHEET

EYES

v2.0

1. Datasheet

1.1. Eyes

| Camera Characteristics | | Unit |
|--------------------------------|--------------------------------------|------------------------|
| Interface | USB-C 3.x | |
| Image Sensor Technology | Rolling Shutter. Size 1.4 x 1.4 | [$\mu\text{m px}$] |
| RGB Camera Field of View (FOV) | 69.4 x 42.5 x 77 (+/- 3) | [$^{\circ}$] |
| RGB Camera Resolution | 1280x720 | [px] |
| Depth Technology | Active IR Stereo | |
| Depth FOV | 65 \pm 2 x 40 \pm 1 x 72 \pm 2 | [$^{\circ}$] |
| Depth Output Resolution | 1280 x 720 | [px] |
| Working Distance | 400-1000 | [mm] |
| | 15.75 - 39.37 | [inch] |
| Operating Temperature | 0 – 35 | [$^{\circ}\text{C}$] |
| | 32 – 95 | [$^{\circ}\text{F}$] |
| IP Rating | IP 54 | |
| Weight | 0.260 | [kg] |
| | 0.57 | [lb] |

| Eyes Features | | Unit | |
|---|--|-------------------|-----------|
| Type of vision system | 2.5 D | | |
| Minimum workpiece size | 10x10 or 15 diameter | [mm] | |
| | 0.39x0.39 or 0.59 diameter | [inch] | |
| Applications Supported | Detection, Sorting, Inspection, Landmark | | |
| Mounting options supported | Robot and External | | |
| Reconfigurability when Robot mounted | 12 configurations (4 x 3) | | |
| | Around robot's flange | Tilt orientations | |
| | 0 - 90 - 180 - 270 | 0 - 45 - 90 | [degrees] |
| | Processing time | Typical: 0.5 s | |
| Detection Repeatability | < 2 | [mm] | |
| | < 0.078 | [inch] | |
| Detection Accuracy (typical) measured at 500 mm | External Mount | Robot Mount | |
| | 2 | 2 | [mm] |
| | 0.078 | 0.078 | [inch] |

| Eyes Features | | | | | Unit |
|--------------------------------|---------------------------------|---------------|---------------|---------------|--------|
| Minimum Inspection Defect Size | 5 | | | | [mm] |
| | 0.197 | | | | [inch] |
| Landmark accuracy** | Waypoint distance from Landmark | Minimum error | Typical error | Maximum error | |
| | 200 | 0.2635 | 0.6596 | 0.9500 | [mm] |
| | 7.874 | 0.0104 | 0.0260 | 0.0374 | [inch] |
| | 500 | 0.6586 | 1.6490 | 2.3750 | [mm] |
| | 19.68 | 0.0259 | 0.0649 | 0.0935 | [inch] |
| | 1000 | 1.3173 | 3.2981 | 4.7500 | [mm] |
| | 39.37 | 0.0519 | 0.1298 | 0.1870 | [inch] |

** Depending on the distance from the waypoint (picking point) to Landmark. Obtained using dual capture approach with the camera being 300 mm (11.81 in) above the Landmark.

| Application and set-up recommendations | |
|--|-----------------------------|
| Lighting conditions | No drastic, instant changes |
| Reflections and focused light spots | Keep minimal |
| Characteristics of objects | Different from background |
| Camera with respect to workspace table | Looking straight to it |

| Eye Box | |
|-----------------------|-------------|
| Weight | 1.01 kg |
| | 2.23 lb |
| Required power supply | 24V (6.25A) |

| Power Supply (6.25A/150W) | Min | Typical | Max | Units |
|---------------------------|-----|---------|-----|-------|
| Input voltage (AC) | 100 | - | 240 | [V] |
| Input current | - | - | 2.1 | [A] |
| Output voltage | - | 24 | - | [V] |
| Output current | - | 6.25 | | [A] |

| Power input (24V connector) | Min | Typical | Max | Units |
|-----------------------------|-----|---------|-----|-------|
| Supply voltage | - | 24 | 25 | [V] |
| Supply current | - | 6.25 | - | [A] |

| Power output (Device connector) | Min | Typical | Max | Units |
|---------------------------------|-----|---------|------|-------|
| Output voltage | - | 24 | 25 | [V] |
| Output current (EB HW v1.2) | - | 4.5 | 4.5* | [A] |

*Peak currents

Eye Box I/O interface:

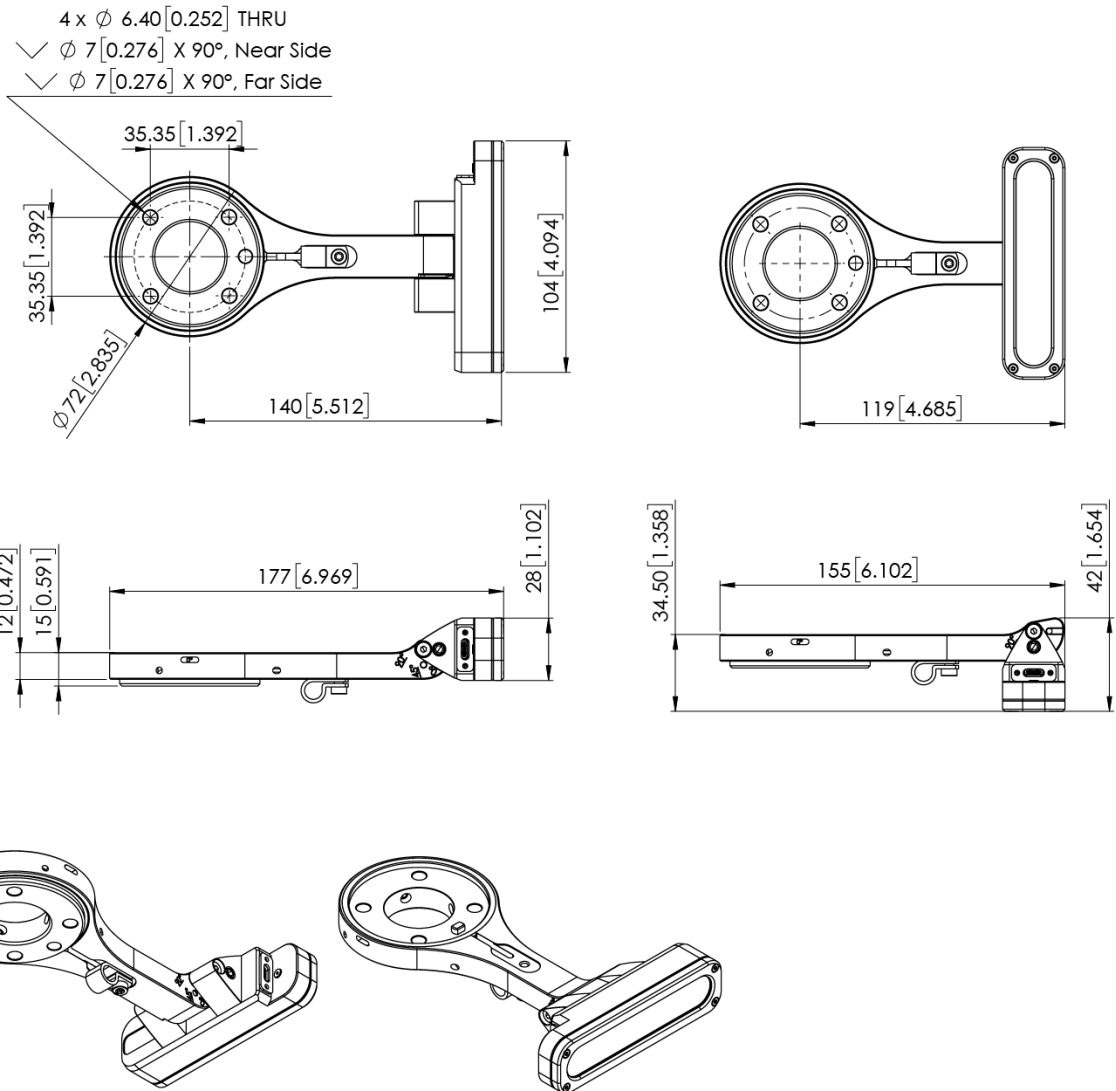
| Power Reference (24V, GND) | Min | Typical | Max | Units |
|----------------------------|-----|---------|-----|-------|
| Reference output voltage | - | 24 | 25 | [V] |
| Reference output current | - | - | 100 | [mA] |

| Digital Output (DO1-DO8) | Min | Typical | Max | Units |
|----------------------------------|-----|---------|-----|--------------|
| Output current - altogether | - | - | 100 | [mA] |
| Output resistance (active state) | - | 24 | - | [Ω] |

| Digital Input (DI1-DI8) as PNP | Min | Typical | Max | Units |
|--------------------------------|------|---------|-----|---------------|
| Voltage level - TRUE | 18 | 24 | 30 | [V] |
| Voltage level - FALSE | -0.5 | 0 | 2.5 | [V] |
| Input current | - | - | 6 | [mA] |
| Input resistance | - | 5 | - | [k Ω] |

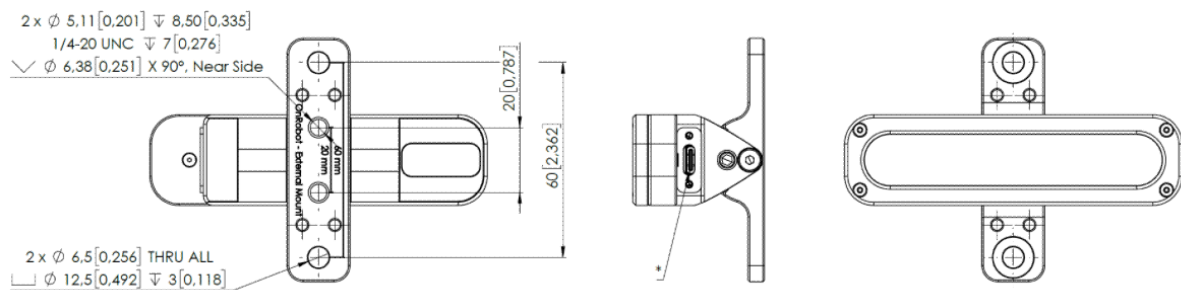
| Digital Input (DI1-DI8) as NPN | Min | Typical | Max | Units |
|--------------------------------|------|---------|-----|---------------|
| Voltage level - TRUE | -0.5 | 0 | 5 | [V] |
| Voltage level - FALSE | 18 | 24 | 30 | [V] |
| Input current | - | - | 6 | [mA] |
| Input resistance | - | 5 | - | [k Ω] |

1.2. Robot Mount



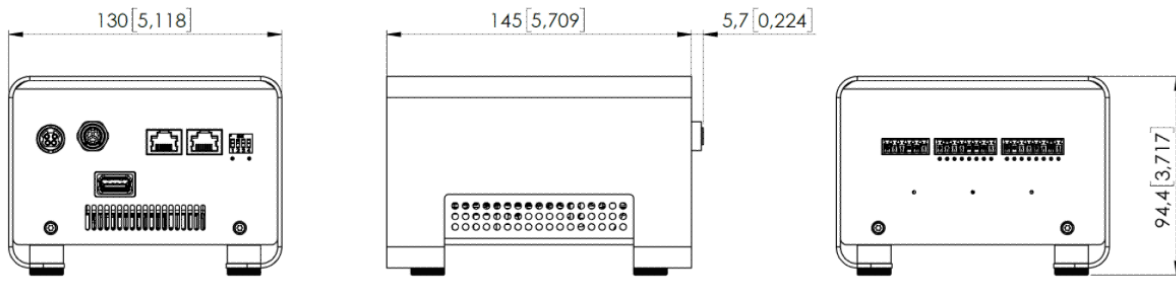
All dimensions are in mm and [inches].

1.3. External Mount



All dimensions are in mm and [inches].

1.4. Eye Box



All dimensions are in mm and [inches].