1. Board dimensions (top view)  
   Scale 3:1

2. Connector callouts (bottom view)  
   Scale 3:1

3. Isometric view  
   Scale 3:1

4. Profile  
   Scale 3:1

5. QTR sensor  
   Scale 3:1

6. Actual size  
   Scale 1:1

Intended for #2 and M2 screws.  
Grid lines indicate 2.54 mm [100 mil] spacing.  
To get the specified scale, select 100% in print settings.  
Drill location tolerance: ±0.1 [±5].  
Board edge tolerance: ±0.3 [±10].

Name: QTR-HD-01x Reflectance Sensor  
Item number: 4101, 4201

Drawing date: 15 February 2019  
Dev code: irs21a

Units: mm [mil]  
Material: mixed

https://www.pololu.com/category/123

© 2019 Pololu Corporation
Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].
1. Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].
1. Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].
Intended for #2 and M2 screws.
1. Grid lines indicate 2.54 mm [100 mil] spacing.
2. To get the specified scale, select 100% in print settings.
3. Drill location tolerance: ±0.1 [±5].
4. Board edge tolerance: ±0.3 [±10].

Name: QTR-HD-02x Reflectance Sensor Array
Item number: 4102, 4202
Dev code: irs22a
Drawing date: 15 February 2019
Units: mm [mil]
Material: mixed

https://www.pololu.com/category/123
1. Board dimensions (top view)  
   Scale 3:1

2. Connector callouts (bottom view)  
   Scale 3:1

3. Isometric view  
   Scale 3:1

4. Profile  
   Scale 3:1

5. QTRX/QTRXL sensor  
   Scale 3:1

6. Actual size  
   Scale 1:1

Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].
1. Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].

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**Item numbers***

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<th>N (number of sensors)</th>
<th>B (hole count)</th>
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*Some items available by special order only.

---

https://www.pololu.com/category/123

**Name:**
QTR Reflectance Sensor Array

**Drawing date:**
15 February 2019

**Dev code:**
irs23a-irs39a

**Units:**
mm [mil]

**Material:**
mixed

**Item number:**
see table

© 2019 Pololu Corporation
### Board dimensions (top view)

- **W**: 20.0 [787]
- **P**: 11.65 [459]
- **B**: 2.5 [98]

### Connector callouts (bottom view)

- **Emitter**
- **Phototransistor**

- **C**: 1.02 [40]
- **P**: 2.18 [86]

### Profile

- **W**: 2.0 [80]
- **B**: 1.02 [40]

### QTRX/QTRXL sensor

- **W**: 2.5 [98]
- **P**: 2.5 [98]

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<th>W (width)</th>
<th>P (pitch)</th>
<th>N (number of sensors)</th>
<th>B (hole count)</th>
<th>C (hole count)</th>
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*Some items available by special order only.

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**Name:** QTRX Reflectance Sensor Array  
**Item number:** see table  
**Drawing date:** 15 February 2019  
**Dev code:** irs23j-irs39j  
**Units:** mm (mil)  
**Material:** mixed  

---

1. Intended for #2 and M2 screws.  
2. Grid lines indicate 2.54 mm [100 mil] spacing.  
3. To get the specified scale, select 100% in print settings.  
4. Drill location tolerance: ±0.1 [±5].  
5. Board edge tolerance: ±0.3 [±10].

---

[https://www.pololu.com/category/123](https://www.pololu.com/category/123)
1. Board dimensions (top view)  
   Scale 4:3

2. Connector callouts (bottom view)  
   Scale 4:3

3. Profile  
   Scale 4:3

4. QTR sensor  
   Scale 4:3

---

### Item numbers

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<tr>
<th>Item numbers*</th>
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<th>P (pitch)</th>
<th>N (number of sensors)</th>
<th>B (hole count)</th>
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<td>4129, 4229</td>
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<td>4.00 [157]</td>
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<td>35.64 [1403]</td>
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<td>8.00 [315]</td>
<td>15</td>
<td>44.53 [1753]</td>
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</tbody>
</table>

*Some items available by special order only.

---

1. Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].

---

https://www.pololu.com/category/123

Name: QTR Reflectance Sensor Array  
Item number: see table

Drawing date: 15 February 2019  
Dev code: irs41a-irs49d  
Units: mm [mil]  
Material: mixed

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# QTRX/QT XL Sensor Array

**Board dimensions (top view)**

<table>
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<tr>
<th>Item numbers*</th>
<th>W (width)</th>
<th>P (pitch)</th>
<th>N (number of sensors)</th>
<th>B (hole count)</th>
<th>C (hole count)</th>
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<td>27.45 [1081]</td>
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<td>8.00 [315]</td>
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<td>35.07 [1381]</td>
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<tr>
<td>4353, 4453</td>
<td>8.00 [315]</td>
<td>8.00 [315]</td>
<td>13</td>
<td>37.80 [1488]</td>
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<tr>
<td>4354, 4454</td>
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<td>8.00 [315]</td>
<td>14</td>
<td>41.80 [1646]</td>
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<tr>
<td>4329, 4429</td>
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<td>4.00 [157]</td>
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<td>35.64 [1403]</td>
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<td>15</td>
<td>44.53 [1753]</td>
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</tbody>
</table>

*Some items available by special order only.

**Connector callouts (bottom view)**

1. Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].

**QTRX/QT XL sensor**

- **Emitter**
- **Phototransistor**

- Shown in same orientation as in view 1.

---

**Documentation:**

- **Name:** QTRX Reflectance Sensor Array
- **Item number:** see table
- **Drawing date:** 15 February 2019
- **Dev code:** irs41j-irs49m
- **Units:** mm [mil]
- **Material:** mixed
- **URL:** https://www.pololu.com/category/123

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1. Board dimensions (top view)  Scale 1:1

2. Connector callouts (bottom view)  Scale 1:1

3. Profile  Scale 1:1

4. QTR sensor  Scale 2:1

5. Isometric view  Scale 1:1

---

1. Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±0.05].
5. Board edge tolerance: ±0.3 [±0.1].

---

**QTR-HD-31x Reflectance Sensor Array**

**Item number:** 4131, 4231

**Dev code:** irs51a

**Units:** mm [mil]

**Material:** mixed

**Drawing date:** 15 February 2019

---

Visit [https://www.pololu.com/category/123](https://www.pololu.com/category/123) for more information.
Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].
Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].
1. Intended for #2 and M2 screws.
2. Grid lines indicate 2.54 mm [100 mil] spacing.
3. To get the specified scale, select 100% in print settings.
4. Drill location tolerance: ±0.1 [±5].
5. Board edge tolerance: ±0.3 [±10].

**Board dimensions (top view)**

Scale 1:1

- 2.5 [98]
- 28.0 [1102]
- 64.0 [2520]
- 28.0 [1102]
- 125.0 [4921]
- 8.00 [315]
- 2.50 [98]
- 11.65 [459]
- 16.5 [650]

**Connector callouts (bottom view)**

Scale 1:1

- 2.5 [98]
- 48.53 [1911]
- 1.27 [50]
- 48.53 [1911]
- 2.50 [98]
- 2.0 [80]
- 1.57 [62]
- 24× Ø 1.02 [40]

**Profile**

Scale 1:1

**QTRX/QTRXL sensor**

Scale 2:1

**Isometric view**

Scale 1:1

https://www.pololu.com/category/123

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