MINI-BEAM™ Series

DC Operation

**Wave length**
- IR (infrared): 880 nm
- Red: 650 nm
- Green: 525 nm
- Blue: 475 nm

**Adjustments**
- Sensitivity
- Light & dark operate

**Supply**
- Supply voltage: 10 VDC ... 30 VDC
- Ripple $V_{pp}$: ≤ 10 %
- No load current: ≤ 25 mA
- Delay upon power up: 100 ms

**Protection**
- Reverse polarity
- Short-circuit (pulsed)

**Output**
- Bipolar
- Continuous load current: ≤ 150 mA
- Overload trip point: ≤ 220 mA typical at 20 °C
- Switching frequency: ≤ 500 Hz

**Material**
- Housing: PBT
- Lens: Acrylic
- Protection class: IP67 (IEC 60529/EN 60529)
- Temperature range: -20 °C ... +70 °C

**Connector**
- Cable or Euro-Style Connector

**Indicator LED’s**
- Light sensed:
- Red
- Red flashing

**Accessories**

**Brackets**
- SMB312B 37 093 00: Bottom mounting
- SMB312S 37 092 00: Side mounting
- SMB18A 34 702 00: Front mounting
- SMB18SF 30 525 19: Swivel mount bracket

**Connectors**
- MQDC-406 30 451 36: Straight type
- MQDC-406RA 30 451 36: Right-angled type

**Dimensions [mm]**

- **Cable**
  - Red LED adjustments: 12.3
  - AF 24 8 thick: 30.7
  - M18x1: 24.1
  - SM312W...
  - 53.3
  - 8

- **Connector**
  - M12x1: 18

**Wiring**

- All types except Emitter

**Emitter**

- 10 VDC to 30 VDC

- * = Load
MINI-BEAM™ Series
DC Operation

--- Retro-reflective ---

![Graph showing retro-reflective properties]

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>Colour</th>
<th>Type</th>
<th>Connector</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>red</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SM312LV</td>
</tr>
<tr>
<td>5</td>
<td>red</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SM312LQD</td>
</tr>
<tr>
<td>3</td>
<td>red</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SM312LP</td>
</tr>
<tr>
<td>3</td>
<td>red</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SM312LQD</td>
</tr>
</tbody>
</table>

--- Diffuse ---

![Graph showing diffuse properties]

<table>
<thead>
<tr>
<th>Distance (mm)</th>
<th>Type</th>
<th>Connector</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>380</td>
<td>IR</td>
<td>pnp, npn</td>
<td>cable</td>
</tr>
<tr>
<td>130</td>
<td>IR</td>
<td>pnp, npn</td>
<td>connector</td>
</tr>
</tbody>
</table>

--- Convergent ---

![Graph showing convergent properties]

<table>
<thead>
<tr>
<th>Distance (mm)</th>
<th>Colour</th>
<th>Type</th>
<th>Connector</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>red</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SM312CV</td>
</tr>
<tr>
<td>43</td>
<td>red</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SM312CV2QD</td>
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</tbody>
</table>

--- Opposed ---

![Graph showing opposed properties]

<table>
<thead>
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<th>Distance (m)</th>
<th>Type</th>
<th>Connector</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>IR</td>
<td>(emitter)</td>
<td>cable</td>
</tr>
<tr>
<td>3</td>
<td>IR</td>
<td>(emitter)</td>
<td>connector</td>
</tr>
<tr>
<td>30</td>
<td>IR</td>
<td>(emitter)</td>
<td>cable</td>
</tr>
<tr>
<td>30</td>
<td>IR</td>
<td>(emitter)</td>
<td>connector</td>
</tr>
</tbody>
</table>

--- Fibre-Optic ---

![Graph showing fibre-optic properties]

<table>
<thead>
<tr>
<th>Distance (mm)</th>
<th>Material</th>
<th>Type</th>
<th>Connector</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass</td>
<td>IR</td>
<td>pnp, npn</td>
<td>cable</td>
<td>SM312F</td>
</tr>
<tr>
<td>plastic</td>
<td>IR</td>
<td>pnp, npn</td>
<td>connector</td>
<td>SM312FPQD</td>
</tr>
</tbody>
</table>

--- Additional Information ---

1) Spot size at focus (convergent mode): SM312CV: ø 1.3 mm, SM312CVG: ø 1 mm, SM312CVB: ø 1.8 mm, SM312CV2: ø 3 mm.
2) Available LED colours: infrared, red, green and blue.
3) Available LED colours: red, green and blue.

These sensors do not include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can result in either an energised or de-energised output condition. These products should not be used as sensing devices for personnel safety.