MINI-BEAM® Expert™ Sensors

MINI-BEAM® Expert, 10-30V dc

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<th>Output</th>
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<th>Excess Gain</th>
<th>Beam Pattern</th>
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<td>POLAR RETRO</td>
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</table>

Connection options: A model with a QD requires a mating cordset (see page 118).

For 9 m cable, add suffix W/30 to the 2 m model number (example, SME312D W/30).

* NOTE: For clear object detection, sensing range varies, according to the efficiency and reflective area of the retroreflector(s) used. For these low-contrast applications, the model BRT-2X2 reflector is recommended and is included with each SME312LPC(QD) sensor.

† NOTE: Retroreflective range is specified using one model BRT-3 retroreflector, unless otherwise noted. Actual sensing range may differ, depending on the efficiency and reflective area of the retroreflector used. See Accessories section for more information.

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com

More information online at bannerengineering.com
### MINI-BEAM® Expert, 10-30V dc (cont’d)

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<th>Beam Pattern</th>
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<tr>
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<tr>
<td><strong>PLASTIC FIBER</strong></td>
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<tr>
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<tr>
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<tr>
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<td>SME312FPQD</td>
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**Connection options:** A model with a QD requires a mating cordset (see page 118).

For 9 m cable, add suffix W/30 to the 2 m model number (example, SME312CV W/30).

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**Photoelectric Sensors**
- Fiber Optic Sensors
- Special Purpose Sensors
- Measurement & Inspection Sensors
- Vision
- Wireless
- Lighting & Indicators
- Safety
- Light Screens
- Safety Laser Scanners
- Fiber Optic Safety Systems
- Safety Controllers & Modules
- Safety Two-Hand Control Modules
- Safety Interlock Switches
- Emergency Stop & Stop Control

---

**Accessories**
- page 118

---

**MINI-BEAM®**
- WORLD-BEAM QS18
- WORLD-BEAM Q20
- MID-SIZE
- FULL-SIZE

---

*Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com*
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<td>Red: OFF when no signal is received.</td>
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<td>Yellow (TEACH Mode): ON to indicate sensor is ready to learn output ON condition</td>
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<td>OFF to indicate sensor is ready to learn output OFF condition</td>
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<td>Yellow (RUN Mode): ON when outputs are conducting</td>
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Excess Gain Curves (Diffuse mode performance based on 90% reflectance white test card)

- **O** = Infrared LED
- **●** = Visible Red LED
- **P** = Visible Red LED Polarized
- **□** = Visible Red Clear Object Detection Polarized

**Opposed Mode**
- MINI-BEAM®
  - EGC-1: Range: 3 m, LED: O
  - EGC-2: Range: 30 m, LED: O
  - EGC-3: Range: 6 m, LED: O
  - EGC-4: Range: 5 m, LED: ●

**Polarized**
- Retroreflective Mode MINI-BEAM®
  - EGC-5: Range: 2 m, LED: P
  - EGC-6: Range: 3 m, LED: P
  - EGC-7: Range: 5 m, LED: ●
  - EGC-8: Range: 3 m, LED: P

**Retroreflective Mode**
- MINI-BEAM® Expert™
  - EGC-9: Range: 1 m, LED: □
  - EGC-10: Range: 5 m, LED: ●
  - EGC-11: Range: 2 m, LED: P
  - EGC-12: Range: 380 mm, LED: O

**Diffuse Mode**
- MINI-BEAM®
  - EGC-13: Range: 300 mm, LED: O
  - EGC-14: Range: 130 mm, LED: O
  - EGC-15: Range: 380 mm, LED: O
  - EGC-16: Range: 130 mm, LED: O

More information online at [bannerengineering.com](http://bannerengineering.com)
**Excess Gain Curves**  
(Diffuse and Convergent mode performance based on 90% reflectance white test card)

- O = Infrared LED
- O = Visible Red LED
- N = Visible Green LED
- C = Visible Blue LED
- O = Visible White LED

**MINIATURE**

- **Diffuse Mode**
  - MINI-BEAM® Expert™
    - Range: 1100 mm
    - LED: O

- **Convergent Mode**
  - MINI-BEAM®
    - Range: 43 mm
    - LED: O

**COMPACT**

- **Diffuse Mode**
  - MINI-BEAM® NAMUR
    - Range: 380 mm
    - LED: O

- **Convergent Mode**
  - MINI-BEAM®
    - Range: 49 mm
    - LED: O

**MIDSIZE**

- **Diffuse Mode**
  - MINI-BEAM® NAMUR
    - Range: 100 mm
    - LED: O

- **Convergent Mode**
  - MINI-BEAM®
    - Range: 16 mm
    - LED: O

**FULL SIZE**

- **Diffuse Mode**
  - MINI-BEAM® NAMUR
    - Range: 100 mm
    - LED: O

- **Convergent Mode**
  - MINI-BEAM®
    - Range: 16 mm
    - LED: O
Excess Gain Curves  (Convergent and Diffuse mode performance based on 90% reflectance white test card)
Excess Gain Curves  (Diffuse mode performance based on 90% reflectance white test card)

○ = Infrared LED  ● = Visible Red LED  ★ = Visible Green LED  ▲ = Visible Blue LED  ○ = Visible White LED
Beam Patterns  (Diffuse mode performance based on 90% reflectance white test card)

= Infrared LED  = Visible Red LED  P = Visible Red LED Polarized  = Visible Red Clear Object Detection Polarized

Opposed Mode MINI-BEAM®

Effective Beam: 3.5 mm

Range: 3 m  LED: O

BP-1

Opposed Mode MINI-BEAM®

Effective Beam: 13 mm

Range: 30 m  LED: O

BP-2

Opposed Mode MINI-BEAM®

Effective Beam: 13 mm

Range: 6 m  LED: O

BP-3

Opposed Mode MINI-BEAM®

Effective Beam: 13 mm

Range: 5 m  LED: O

BP-4

Polarized Retroreflective Mode MINI-BEAM®

Range: 2 m  LED: P

BP-5

Polarized Retroreflective Mode MINI-BEAM®

Range: 3 m  LED: P

BP-6

Polarized Retroreflective Mode MINI-BEAM®

Range: 5 m  LED: O

BP-7

Polarized Retroreflective Mode MINI-BEAM®

Range: 3 m  LED: P

BP-8

Retroreflective Mode MINI-BEAM® Expert™

Range: 1 m  LED: |

BP-9

Retroreflective Mode MINI-BEAM® NAMUR

Range: 5 m  LED: O

BP-10

Retroreflective Mode MINI-BEAM® NAMUR

Range: 2 m  LED: P

BP-11

Retroreflective Mode MINI-BEAM® NAMUR

Range: 380 mm  LED: O

BP-12

Diffuse Mode MINI-BEAM®

Range: 300 mm  LED: O

BP-13

Diffuse Mode MINI-BEAM®

Range: 130 mm  LED: O

BP-14

Diffuse Mode MINI-BEAM®

Range: 380 mm  LED: O

BP-15

Diffuse Mode MINI-BEAM® Expert™

Range: 130 mm  LED: O

BP-16

More on next page
# Beam Patterns

(Convergent and Diffuse mode performance based on 90% reflectance white test card)

- ⬤ = Infrared LED
- ⬤ = Visible Red LED
- ⬤ = Visible Green LED
- ⬤ = Visible Blue LED
- ⬤ = Visible White LED

## MINIATURE

**BP-17**
- Range: 1100 mm
- LED:

## COMPACT

**BP-18**
- Range: 380 mm
- LED:

**BP-19**
- Range: 75 mm
- LED:

**BP-20**
- Range: 16 mm
- LED:

## MIDSIZE

**BP-21**
- Range: 43 mm
- LED:

**BP-22**
- Range: 16 mm
- LED:

**BP-23**
- Range: 43 mm
- LED:

**BP-24**
- Range: 16 mm
- LED:

## FULLSIZE

**BP-25**
- Range: 49 mm
- LED:

**BP-26**
- Range: 16 mm
- LED:

**BP-27**
- Range: 49 mm
- LED:

**BP-28**
- Range: 16 mm
- LED:

**BP-29**
- Range: 43 mm
- LED:

**BP-30**
- Range: 16 mm
- LED:

**BP-31**
- Range: 16 mm
- LED:

**BP-32**
- Range: 16 mm
- LED:

More information online at [bannerengineering.com](http://bannerengineering.com)
Beam Patterns  (Convergent and Diffuse mode performance based on 90% reflectance white test card)

- = Infrared LED  = Visible Red LED  = Visible Green LED  = Visible Blue LED  = Visible White LED

Convergent Mode
MINI-BEAM® NAMUR

BP-33
Range: 16 mm  LED: 

Opposed Mode—Glass Fiber
MINI-BEAM®

BP-34
Range: 43 mm  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-35
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-36
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-37
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-38
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-39
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-40
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-41
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-42
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-43
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-44
Range: Varies  LED: 

Diffuse Mode—Glass Fiber
MINI-BEAM®

BP-45
Range: Varies  LED: 

More information online at bannerengineering.com
Beam Patterns

(Diffuse mode performance based on 90% reflectance white test card)

- = Infrared LED
- = Visible Red LED
- = Visible Green LED
- = Visible Blue LED
- = Visible White LED
DC Hookups

DC05  Complementary Current Sinking (NPN) Standard Hookup

Current Sinking (NPN) Plus Current Sinking Alarm

Key
1 = Brown
2 = White
3 = Blue
4 = Black

10-30V dc

Load

Alarm

DC06  Complementary Current Sourcing (PNP) Standard Hookup

Current Sourcing (PNP) Plus Current Sourcing Alarm

Key
1 = Brown
2 = White
3 = Blue
4 = Black

10-30V dc

Load

Alarm

DC07  Current Sinking (NPN)

Current Sourcing (PNP)

Key
1 = Brown
2 = White
3 = Blue
4 = Black

10-30V dc

Load

Remote Programming (N.O.)

DC08  Bipolar (NPN + PNP)

Key
1 = Brown
2 = White
3 = Blue
4 = Black
5 = Gray
6 = Pink

10-30V dc

Load

Remote Teach

5

*NOTE: For some QS30 models, gray wire is used for LO/DO Select. See data sheet.
** Bussable Power models are 12-30V dc

† Not Used

More on next page