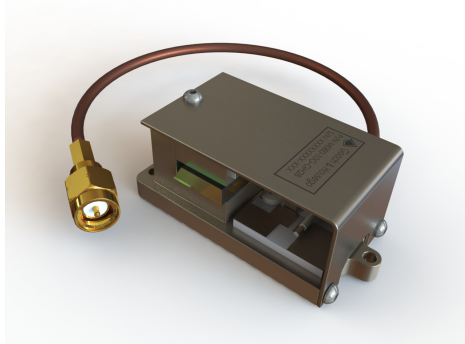


# Gooch & Housego



## Conduction-cooled Acousto-Optic Q-Switch

I-QS080-1C10G-8-GH28

A compact conduction-cooled Acousto-Optic Q-Switch, ideally suited to short cavity end pumped Nd:YAG & Nd:YVO<sub>4</sub> lasers.

Utilising top grade Crystal Quartz for increased efficiency & thermal stability, with high quality optical finishing & high damage threshold anti-reflection coatings to provide high damage threshold & low insertion loss.

In addition to the specifications indicated, we also offer alternative wavelengths, RF frequencies, active apertures & an extensive range of mechanical housing configurations. We also offer full custom design & manufacturing, enabling our customers to achieve the perfect solution.

Our scientists and engineers are available to assist in selecting the most appropriate model of Q-Switch and also RF driver for your application.

Please contact our sales team for further information.

### Key Features:

- Compact package
- Conduction-cooled
- High damage threshold
- High efficiency
- Custom configurations available

### Application examples:

- Material processing:
  - Marking
  - Engraving
  - Scribing
  - Surface treatment

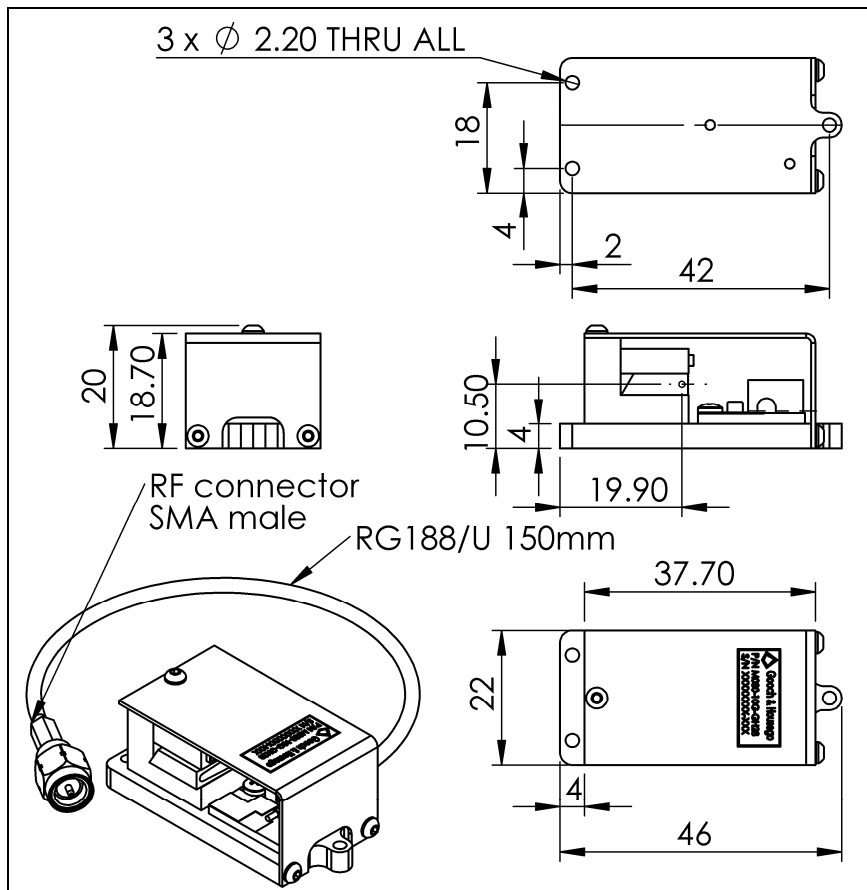
## General Specifications

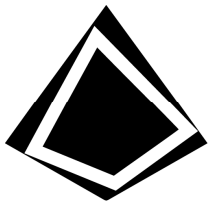
|                              |                          |
|------------------------------|--------------------------|
| <b>Interaction material:</b> | <b>Crystal Quartz</b>    |
| Wavelength:                  | 1030 to 1064nm           |
| Damage threshold:            | > 1GW/cm <sup>2</sup>    |
| AR coating reflectivity:     | < 0.2% per surface       |
| Transmission:                | > 99.6%                  |
| Frequency:                   | 80MHz                    |
| Optical polarisation:        | Linear, vertical to base |
| Active aperture:             | 1.0mm                    |
| Acoustic mode:               | Compressional            |
| Separation angle:            | 14.9mrad                 |
| Rise-time (10-90%):          | 113ns/mm                 |
| Loss modulation:             | ≥ 85%                    |
| RF power:                    | 10W (max)                |
| Storage temperature:         | -20 to +70degC           |

## Ordering Codes

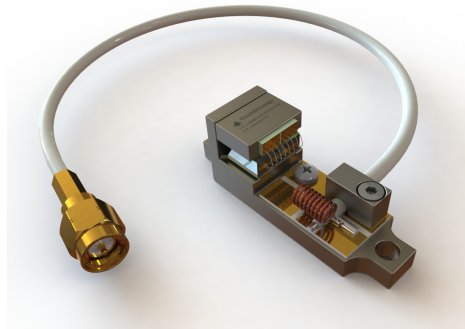
**Explanation:** I-QS080-1C10G-8-GH28 (Q-Switch, 80MHz, 1mm active aperture, compressional mode, Crystal Quartz, 1064nm, SMA male pigtail, GH28 housing).

I - QS080 - 1C10G - 8 - GH28





# Gooch & Housego



## Conduction-cooled Acousto-Optic Q-Switch

I-QS080-0.5C10G-8-GH48

An ultra-compact conduction-cooled Acousto-Optic Q-Switch, ideally suited to short cavity end pumped Nd:YAG & Nd:YVO<sub>4</sub> lasers.

Utilising top grade Crystal Quartz for increased efficiency & thermal stability, with high quality optical finishing & high damage threshold anti-reflection coatings to provide high damage threshold & low insertion loss.

In addition to the specifications indicated, we also offer alternative wavelengths, RF frequencies, active apertures & an extensive range of mechanical housing configurations. We also offer full custom design & manufacturing, enabling our customers to achieve the perfect solution.

Our scientists and engineers are available to assist in selecting the most appropriate model of Q-Switch and also RF driver for your application.

Please contact our sales team for further information.

### Key Features:

- Compact package
- Conduction-cooled
- High damage threshold
- High efficiency
- Custom configurations available

### Application examples:

- Material processing:
  - Marking
  - Engraving
  - Scribing
  - Surface treatment

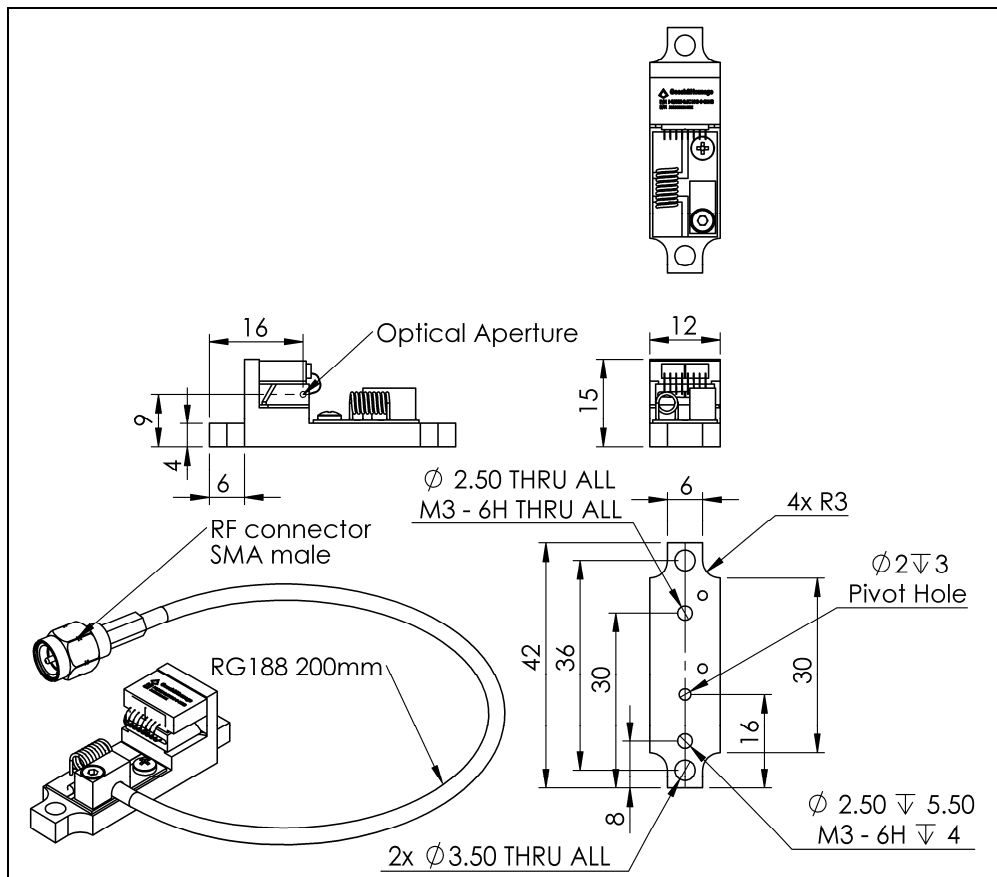
## General Specifications

|                              |                          |
|------------------------------|--------------------------|
| <b>Interaction material:</b> | <b>Crystal Quartz</b>    |
| Wavelength:                  | 1064nm                   |
| Damage threshold:            | > 1GW/cm <sup>2</sup>    |
| AR coating reflectivity:     | < 0.2% per surface       |
| Transmission:                | > 99.6%                  |
| Frequency:                   | 80MHz                    |
| Optical polarisation:        | Linear, vertical to base |
| Active aperture:             | 0.5mm                    |
| Acoustic mode:               | Compressional            |
| Separation angle:            | 14.9mrad                 |
| Rise-time (10-90%):          | 113ns/mm                 |
| Loss modulation:             | ≥ 85%                    |
| RF power:                    | 10W (max)                |
| Storage temperature:         | -20 to +70degC           |

## Ordering Codes

**Explanation: I-QS080-0.5C10G-8-GH48** (Q-Switch, 80MHz, 0.5mm active aperture, compressional mode, Crystal Quartz, 1064nm, SMA male pigtail, GH48 housing).

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | - | Q | S | 0 | 8 | 0 | - | 0 | . | 5 | C | 1 | 0 | G | - | 8 | - | G | H | 4 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|





## DEVICE SPECIFICATIONS

MODEL NUMBER:

**33080-16-.7-I-TB**

(PROTECTED UNDER US PATENT NUMBER 5,268,911)

DOCUMENT NUMBER: **56A20469A**

| <u>PARAMETER</u>       | <u>SPECIFICATION</u>  |
|------------------------|---|
| Interaction Material   | Crystal Quartz  |
| Acoustic Mode          | Longitudinal  |
| Operating Wavelength   | 1.06 $\mu\text{m}$  |
| Window Configuration   | AR "V" coated   |
| Static Transmission    | $\geq 99\%$   |
| Operating Frequency    | 80 MHz  |
| Loss Modulation        | $\geq 80\%$ with linear polarization<br>perpendicular to acoustic propagation |
| Acoustic Aperture Size | 0.7 mm  |
| Rise Time              | $\leq 115$ nsec/mm beam dia.  |
| Deflection Angle       | 14.7 mrad   |
| RF Power Level         | $\leq 16$ Watts   |
| Impedance              | 50 Ohms nominal   |
| VSWR                   | $\leq 1.2:1$ @ 80 MHz   |
| Package:               | 53B4055   |
| Cooling                | Conductive, must maintain<br>housing temperature $< 50^\circ\text{C}$         |

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## DEVICE SPECIFICATIONS

MODEL NUMBER:

**33041-16-.7-I-TB-SMA**

**33041-16-.7-I-TB-BNC**

(PROTECTED UNDER US PATENT NUMBER 5,268,911)

DOCUMENT NUMBER: 56A15803D

| <u>PARAMETER</u>       | <u>SPECIFICATION</u>   |
|------------------------|--|
| Interaction Material   | Crystal Quartz   |
| Acoustic Mode          | Longitudinal   |
| Operating Wavelength   | 1.06 $\mu\text{m}$   |
| Window Configuration   | AR "V" coated  |
| Static Transmission    | $\geq 99 \%$   |
| Operating Frequency    | 40.68 MHz  |
| Loss Modulation        | $\geq 80 \%$ with linear polarization<br>perpendicular to acoustic propagation |
| Acoustic Aperture Size | 0.7 mm   |
| Rise Time              | $\leq 115$ nsec/mm beam dia.   |
| Deflection Angle       | 7.5 mrad   |
| RF Power Level         | $\leq 16$ watts  |
| Impedance              | 50 ohms nominal  |
| VSWR                   | $\leq 1.2:1$ @ 40.68 MHz   |
| Package SMA            | 53B4055  |
| BNC                    | 53B4056  |
| Cooling                | Conduction, housing must remain below 50°C                                     |

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# Gooch & Housego

## DEVICE SPECIFICATIONS

### MODEL NUMBER:

**34027-1.5-SF10-TB-BNC**

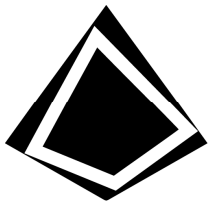
**34027-1.5-SF10-TB-SMF**

### DOCUMENT NUMBER: 56A8689G

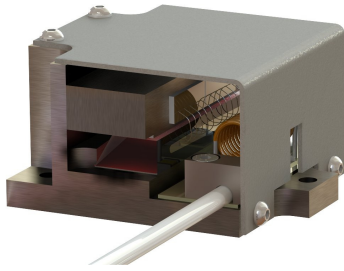
| <u>PARAMETER</u>       | <u>SPECIFICATION</u>   |
|------------------------|--|
| Interactive Material   | SF10   |
| Acoustic Mode          | Longitudinal   |
| Operating Wavelength   | 1064 nm  |
| Window Configuration   | AR Coated  |
| Static Transmission    | ≥99 %  |
| Operating Frequency    | 27.12 MHz  |
| Diffraction Efficiency | ≥30 % @ 2 watts with random polarization<br>≥60 % @ 4 watts with random polarization |
| Acoustic Aperture Size | 1.5 mm   |
| Rise Time              | 165 nsec / mm beam diameter  |
| Deflection Angle       | 7.6 mrad   |
| RF Power Level         | ≤4 watts   |
| Impedance              | 50 ohms nominal  |
| VSWR                   | ≤1.5:1 @ 27.12 MHz   |
| Package: BNC Female    | 53B3535  |
| SMF Female             | 53B3534  |
| Cooling                | Conduction, must maintain<br>Housing temperature <50°C.                              |

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# Gooch & Housego



## Conduction-cooled Acousto-Optic Q-Switch

I-QS080-1C10G-4-GH25

A conduction-cooled Acousto-Optic Q-Switch, ideally suited to short cavity end pumped Nd:YAG & Nd:YVO<sub>4</sub> lasers.

Utilising top grade Crystal Quartz for increased efficiency & thermal stability, with high quality optical finishing & high damage threshold anti-reflection coatings to provide high damage threshold & low insertion loss.

In addition to the specifications indicated, we also offer alternative wavelengths, RF frequencies, active apertures & an extensive range of mechanical housing configurations. We also offer full custom design & manufacturing, enabling our customers to achieve the perfect solution.

Our scientists and engineers are available to assist in selecting the most appropriate model of Q-Switch and also RF driver for your application.

Please contact our sales team for further information.

### Key Features:

- Compact package
- Conduction-cooled
- High damage threshold
- High efficiency
- Custom configurations available

### Application examples:

- Material processing:
  - Marking
  - Engraving
  - Scribing
  - Surface treatment



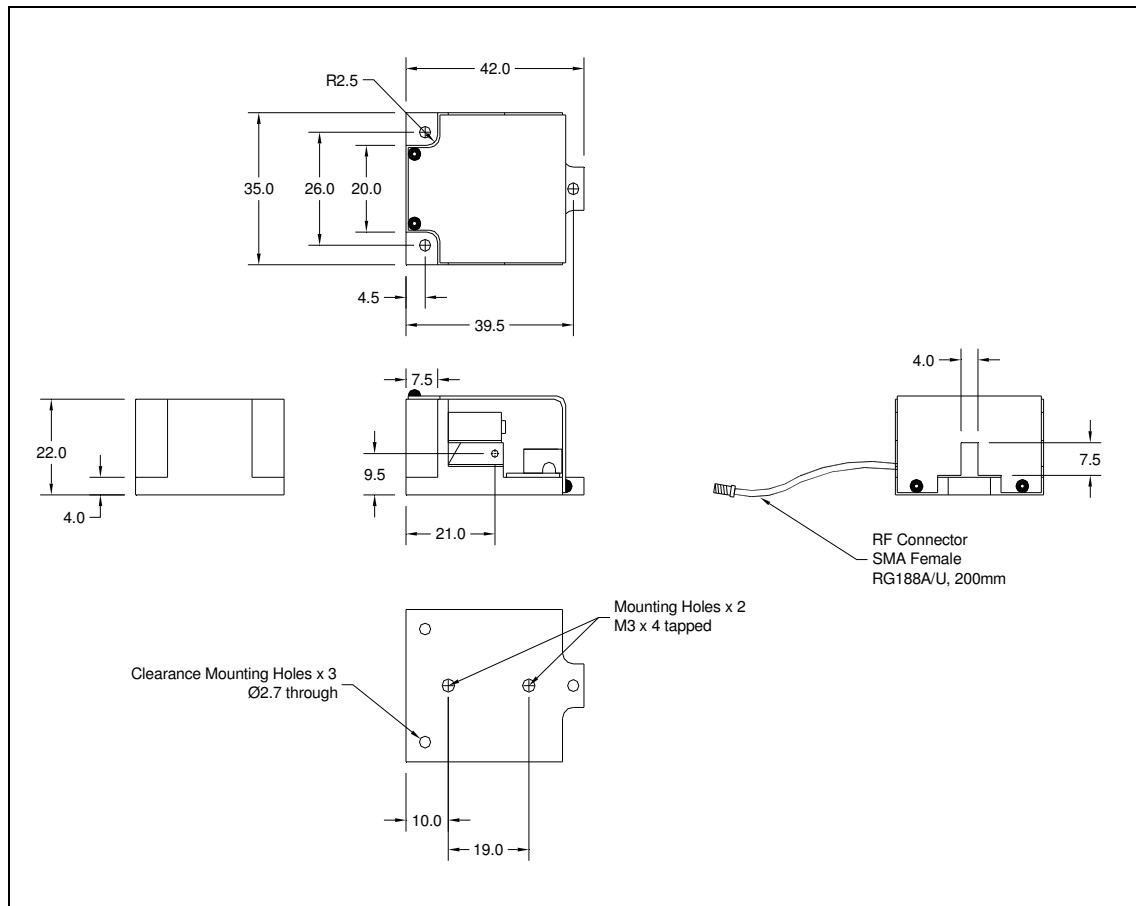
## General Specifications

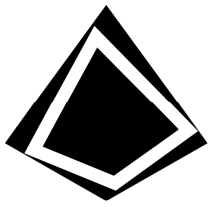
|                             |                          |
|-----------------------------|--------------------------|
| Interaction material:       | Crystal Quartz           |
| Wavelength:                 | 1064nm                   |
| Optical polarisation:       | Linear, vertical to base |
| AR coating reflectivity:    | < 0.2% per surface       |
| Damage threshold:           | > 1GWcm <sup>-2</sup>    |
| Transmission (single pass): | > 99.6%                  |
| RF frequency:               | 80MHz                    |
| VSWR:                       | < 1.2:1                  |
| Active aperture:            | 1.0mm                    |
| Rise-time:                  | 113ns/mm                 |
| Loss modulation:            | > 85%                    |
| RF power rating:            | 15W (max)                |
| Storage temperature:        | -20 to +70degC           |

## Ordering Codes

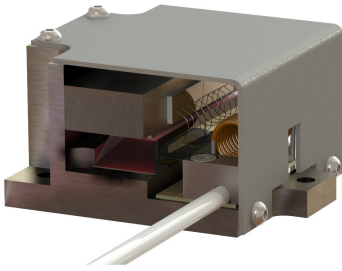
**Explanation: I-QS080-1C10G-4-GH25** (Q-Switch, 80MHz, 1mm active aperture, compressional mode, Crystal Quartz, 1064nm, SMA female pigtail, GH25 housing).

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | - | Q | S | 0 | 8 | 0 | - | 1 | C | 1 | 0 | G | - | 4 | - | G | H | 2 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|





# Gooch & Housego



## Conduction-cooled Acousto-Optic Q-Switch

I-QS041-1.8C10G-4-GH21

The 'Industry standard' conduction-cooled Acousto-Optic Q-Switch for end pumped Nd:YAG & Nd:YVO<sub>4</sub> lasers.

Utilising top grade Crystal Quartz for increased efficiency & thermal stability, with high quality optical finishing & high damage threshold anti-reflection coatings to provide high damage threshold & low insertion loss.

In addition to the specifications indicated, we also offer alternative wavelengths, RF frequencies, active apertures & an extensive range of mechanical housing configurations. We also offer full custom design & manufacturing, enabling our customers to achieve the perfect solution.

Our scientists and engineers are available to assist in selecting the most appropriate model of Q-Switch and also RF driver for your application.

Please contact our sales team for further information.

### Key Features:

- Industry standard
- Conduction-cooled
- High damage threshold
- High efficiency
- Custom configurations available

### Application examples:

- Material processing:
  - Marking
  - Engraving
  - Scribing
  - Surface treatment

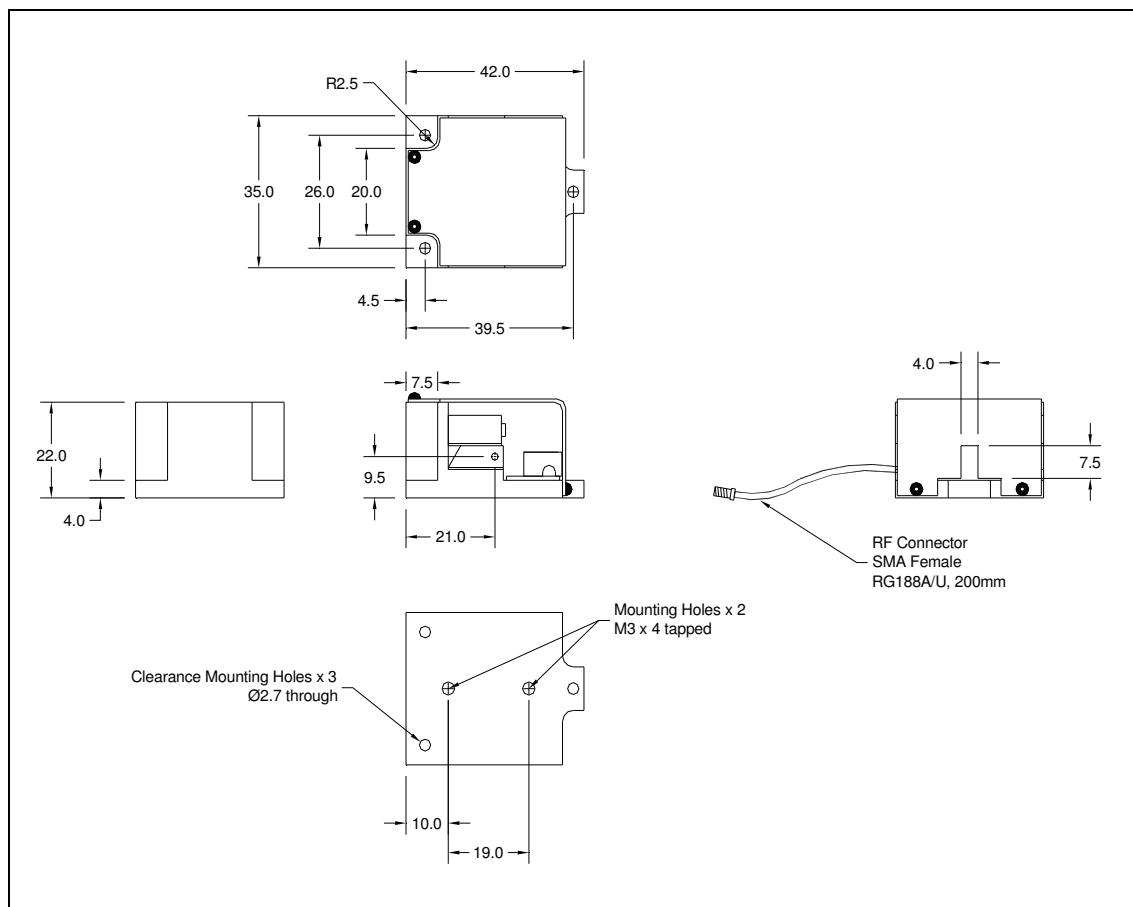
## General Specifications

|                             |                          |
|-----------------------------|--------------------------|
| Interaction material:       | Crystal Quartz           |
| Wavelength:                 | 1064nm                   |
| Optical polarisation:       | Linear, vertical to base |
| AR coating reflectivity:    | < 0.2% per surface       |
| Damage threshold:           | > 1GWcm <sup>-2</sup>    |
| Transmission (single pass): | > 99.6%                  |
| RF frequency:               | 40.68MHz                 |
| VSWR:                       | < 1.2:1                  |
| Active aperture:            | 1.8mm                    |
| Rise-time:                  | 113ns/mm                 |
| Loss modulation:            | > 85%                    |
| RF power rating:            | 20W (max)                |
| Storage temperature:        | -20 to +70degC           |

## Ordering Codes

**Explanation: I-QS041-1.8C10G-4-GH21** (Q-Switch, 41MHz, 1.8mm active aperture, compressional mode, Crystal Quartz, 1064nm, SMA female pigtail, GH21 housing).

**I - QS041 - 1 . 8 C10G - 4 - GH21**





## DEVICE SPECIFICATIONS

MODEL NUMBER:

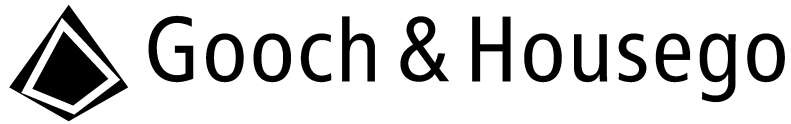
**34080-1-SF10-TB-BNC**

DOCUMENT NUMBER: 56A20419B

| <u>PARAMETER</u>       | <u>SPECIFICATION</u>                                |
|------------------------|---|
| Interaction Material   | SF10  |
| Acoustic Mode          | Longitudinal  |
| Operating Wavelength   | 1064 nm   |
| Window Configuration   | AR coated   |
| Static Transmission    | ≥ 99%   |
| Operating Frequency    | 80 MHz  |
| Loss Modulation        | ≥ 40% with random polarization                      |
| Acoustic Aperture Size | 1 mm  |
| Rise Time              | 162 nsec/mm beam diameter                           |
| Deflection Angle       | 21 mrad   |
| RF Power Level         | ≤ 3.25 Watts  |
| Impedance              | 50 Ohms nominal                                     |
| VSWR                   | ≤1.2:1 @ 80 MHz                                     |
| Package                | 53B4233   |
| Cooling                | Conductive, must maintain housing temperature <50°C |

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**DEVICE SPECIFICATIONS**

**MODEL NUMBER:**

**34041-1.5-SF10-TB-SMF**

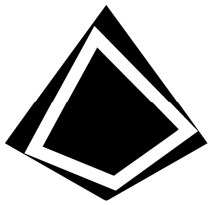
**34041-1.5-SF10-TB-BNC**

**DOCUMENT NUMBER: 56A12014D**

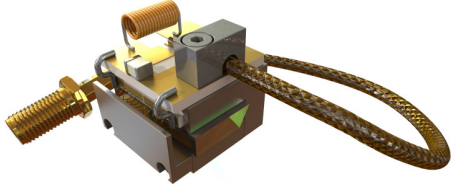
| <b><u>PARAMETER</u></b> | <b><u>SPECIFICATION</u></b>  |
|-------------------------|--|
| Interaction Material    | SF10   |
| Acoustic Mode           | Longitudinal   |
| Operating Wavelength    | 1064 nm  |
| Window Configuration    | AR coated  |
| Static Transmission     | ≥99%   |
| Operating Frequency     | 40.68 MHz  |
| Diffraction Efficiency  | ≥20 % @ 2 watts with random polarization<br>≥40 % @ 4 watts with random polarization |
| Acoustic Aperture Size  | 1.5 mm   |
| Rise Time               | 165 nsec / mm beam dia.  |
| Deflection Angle        | 10.8 mrad  |
| RF Power Level          | ≤4 watts   |
| Impedance               | 50 ohms nominal  |
| VSWR                    | ≤1.2:1 at 40.68 MHz  |
| Package SMF Female      | 53B3534  |
| BNC Female              | 53B3535  |
| Cooling                 | Conduction, must maintain<br>Housing temperature <50°C                               |

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# Gooch & Housego



## Conduction-cooled Acousto-Optic Q-Switch

I-QS080-1C10H-4-OS14

An ultra-compact conduction-cooled Acousto-Optic Q-Switch, optimised for use at 1319 – 1342nm.

Utilising top grade Crystal Quartz for increased efficiency & thermal stability, with high quality optical finishing & high damage threshold anti-reflection coatings to provide high damage threshold & low insertion loss.

In addition to the specifications indicated, we also offer alternative wavelengths, RF frequencies, active apertures & an extensive range of mechanical housing configurations. We also offer full custom design & manufacturing, enabling our customers to achieve the perfect solution.

Our scientists and engineers are available to assist in selecting the most appropriate model of Q-Switch and also RF driver for your application.

Please contact our sales team for further information.

### Key Features:

- 1319-1342nm
- Compact package
- Conduction-cooled
- High damage threshold
- Custom configurations available

### Application examples:

- Material processing
- Medical
- Scientific

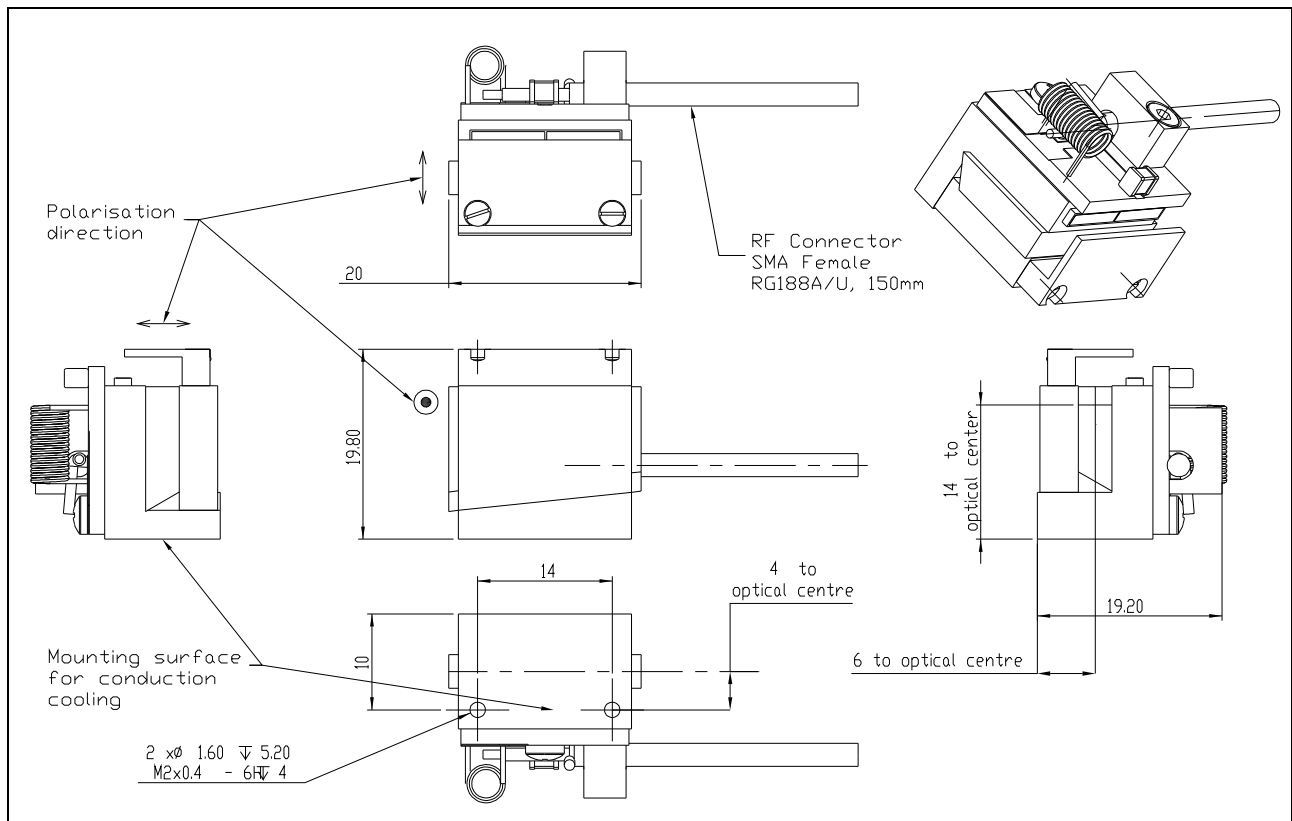
## General Specifications

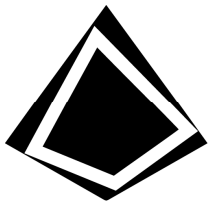
|                              |                          |
|------------------------------|--------------------------|
| <b>Interaction material:</b> | <b>Crystal Quartz</b>    |
| Wavelength:                  | 1319 to 1342nm           |
| Damage threshold:            | > 500MW/cm <sup>2</sup>  |
| AR coating reflectivity:     | < 0.2% per surface       |
| Transmission:                | > 99.6%                  |
| Frequency:                   | 80MHz                    |
| Optical polarisation:        | Linear, vertical to base |
| Active aperture:             | 1.0mm                    |
| Acoustic mode:               | Compressional            |
| Separation angle:            | 18.8mrad                 |
| Rise-time (10-90%):          | 113ns/mm                 |
| Loss modulation:             | ≥ 70%                    |
| RF power:                    | 10W (max)                |
| Storage temperature:         | -20 to +70degC           |

## Ordering Codes

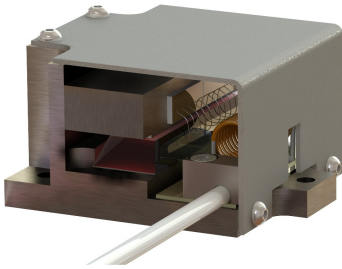
**Explanation: I-QS080-1C10H-4-OS14** (Q-Switch, 80MHz, 1.0mm active aperture, compressional mode, Crystal Quartz, 1319/1342nm, SMA female pigtail, OS14 housing).

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | - | Q | S | 0 | 8 | 0 | - | 1 | C | 1 | 0 | H | - | 4 | - | O | S | 1 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|





# Gooch & Housego



## Conduction-cooled Acousto-Optic Q-Switch

I-QS041-2C10V5-4-HC1

An example of our extensive range of custom Q-Switches. This compact device, based on our industry standard conduction-cooled Q-Switch, is optimised for operation at 1900 to 2100nm.

Utilising top grade Crystal Quartz for increased efficiency & thermal stability, with high quality optical finishing & high damage threshold anti-reflection coatings to provide high damage threshold & low insertion loss.

In addition to the specifications indicated, we also offer alternative wavelengths, RF frequencies, active apertures & an extensive range of mechanical housing configurations. We also offer full custom design & manufacturing, enabling our customers to achieve the perfect solution.

Our scientists and engineers are available to assist in selecting the most appropriate model of Q-Switch and also RF driver for your application.

Please contact our sales team for further information.

### Key Features:

- 1900 to 2100nm
- Compact package
- Conduction-cooled
- High damage threshold
- Custom configurations available

### Application examples:

- Material processing
- Medical
- Scientific



### General Specifications

|                             |                          |
|-----------------------------|--------------------------|
| Interaction material:       | Crystal Quartz           |
| Wavelength:                 | 1900 to 2100nm           |
| Optical polarisation:       | Linear, vertical to base |
| AR coating reflectivity:    | < 0.5% per surface       |
| Damage threshold:           | > 500MWcm <sup>-2</sup>  |
| Transmission (single pass): | > 99.0%                  |
| Optical polarisation:       | Linear, vertical to base |
| RF frequency:               | 40.68MHz                 |
| VSWR:                       | < 1.2:1                  |
| Active aperture:            | 2.0mm                    |
| Rise-time:                  | 113ns/mm                 |
| Loss modulation:            | > 45%                    |
| RF power rating:            | 20W (max)                |
| Storage temperature:        | -20 to +70degC           |

### Ordering Codes

**Explanation: I-QS041-2C10V5-4-HC1** (Q-Switch, 41MHz, 2mm active aperture, compressional mode, Crystal Quartz, 1900-2100nm, SMA female pigtail, HC1 housing).

**I - Q S 0 4 1 - 2 C 1 0 V 5 - 4 - H C 1**

