新特光电
Sintec Optronics

‘Industry Standard’
Acousto-Optic Q-Switch

A water-cooled Acousto-Optic Q-Switch for use in high power lamp or diode pumped Nd:YAG lasers.

Combining top grade fused silica with high quality optical finishing and in-house anti-reflection coatings, this Q-Switch exhibits very low insertion loss and high damage threshold. It’s design characteristics and repeatable manufacturing process enable RF powers of up to 100W (for shear mode options).

Standard options include a choice of RF frequency (24 to 68MHz), active apertures (1.6 – 8.0mm), acoustic modes (compressional for linear polarisation, shear for random polarisation). Custom options, including alternative mechanical designs & wavelengths are available upon request.

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 for Nd:YAG lasers
- High damage threshold
- Low insertion loss
- Up to 100W RF power handling
- Custom configurations available

Application examples:
- Material processing:
  - Marking
  - Engraving
  - Scribing
  - Surface treatment
- Medical (surgery)
- Scientific (PIV)

General Specifications

Interaction material:	Fused Silica
Wavelength:	1064nm
AR coating reflectivity:	< 0.2% per surface
Damage threshold:	> 1GWcm^{-2}
Transmission (single pass):	> 99.6%
Static insertion loss:	≤ 6% at 50W laser power
VSWR:	< 1.2:1 (<1.4:1 at 50W RF power)
RF power rating (maximum):	50W cw for Compressional acoustic mode 100W cw for Shear acoustic mode
Water flow rate:	> 190cc / minute
Water-cooling channel material:	Aluminium (**de-ionised water is strongly recommended**)
Recommended water temperature:	+22°C to +32°C
Thermal switch cut-off:	+55°C +/- 5°C
Storage temperature:	0 to +50degC

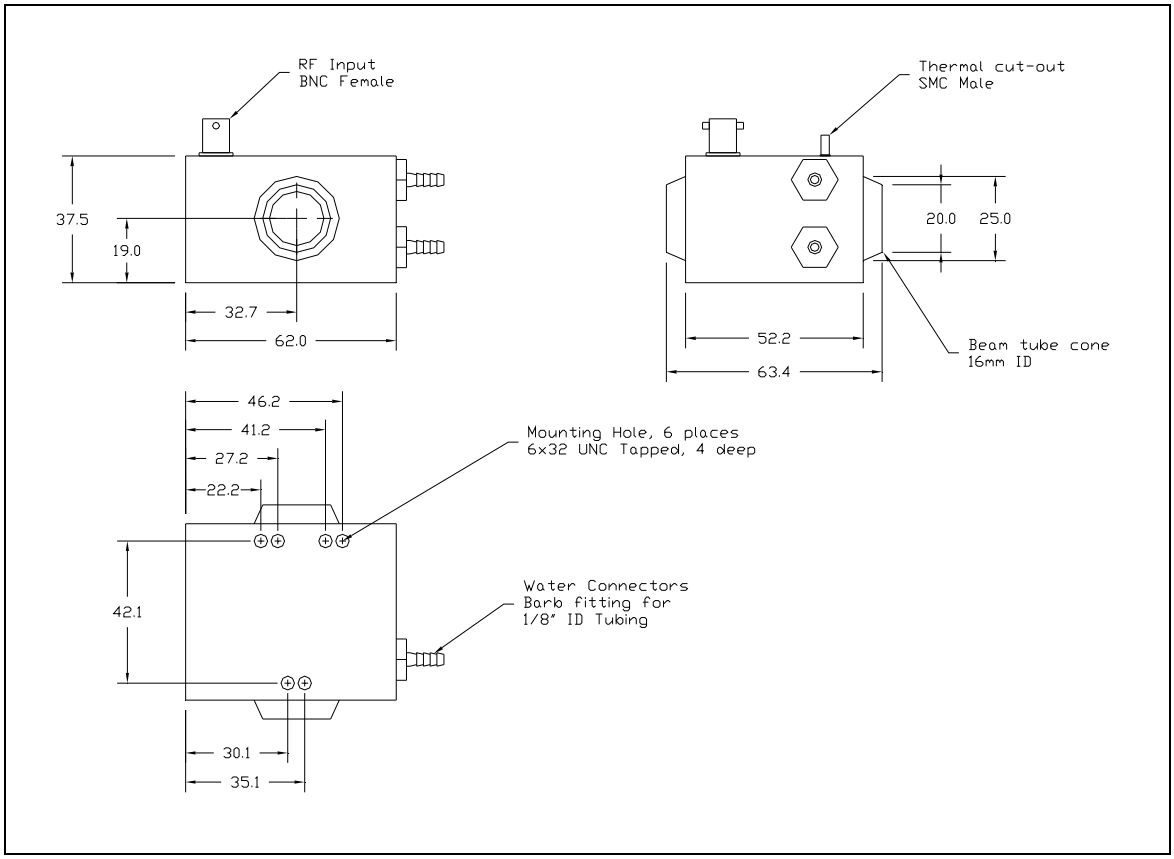
Ordering Codes

Example: I-QS027-4S4G-B5-AT1 (Q-Switch, 27.12MHz, 4mm active aperture, shear mode, fused silica, 1064nm, Barbed water-connectors, BNC, standard housing with M3 mounting holes) Note: As indicated, the –AT1 designation indicates M3 mounting holes, for imperial 6-32UNC mounting holes, no prefix is required.

I	-	Q	S	x	x	x	-	x	x	x	X	4	G	-	x	5	-	A	T	1

Code	Frequency		Code	Active aperture		Code	Acoustic mode		Code	Water connector
024	24.00MHz		1.6	1.6mm		C	Compressional		B	Barbed, push on
027	27.12MHz		2	2.0mm		S	Shear		S	Screw on (1/8" OD tube)
041	40.68MHz		3	3.0mm						
068	68.00MHz		4	4.0mm						
			5	5.0mm						
			6.5	6.5mm						
			8	8.0mm						

1. 40.68 & 68MHz options are only rated for use with 50W RF drive power
2. 40.68 & 68MHz options are only available in active apertures of up to 5.0mm


RF Input
BNC Female
37.5
19.0
32.7
62.0
Thermal cut-out
SMC Male
20.0
25.0
52.2
63.4
Beam tube cone
16mm ID
46.2
41.2
27.2
22.2
Mounting Hole, 6 places
6x32 UNC Tapped, 4 deep
42.1
Water Connectors
Barb fitting for
1/8" ID Tubing
30.1
35.1