新特光电
Sintec Optronics

AODF - UV

Acousto-Optic Beam Deflectors for UV Systems

PRODUCT DATASHEET

G&H acousto-optic beam deflectors are state of the art, specialized designs for high-speed scanning applications.

Acousto-optic (AO) beam deflectors induce an angular shift of the diffracted first order proportional to the applied RF frequency carrier signal. Current devices will handle UV wavelengths down to 266 nm. Aperture heights of up to 7 mm Ø are offered while custom devices have demonstrated aperture widths exceeding 60 mm. Beam deflectors offer scan angles up to 5 mrad. These AO devices offer agile, accurate and reproducible, control of the beam position for linear scanning or randomly addressable beam positioning.

A variety of designs using optimized optical materials are available. Devices range from conduction cooled to high-power water-cooled designs. Our expert design staff can tailor deflector performance to meet your specific needs.

G&H UV deflectors are ideal for applications such as micro machining, inspection systems, via drilling and graphic imaging. Two-dimensional scanning can be achieved by cascading two deflectors in series.

As with all of our acousto-optic devices, the deflector line utilizes our high-quality crystals and AR coatings housed in a rugged and reliable package. The solid state design offers unsurpassed reliability and consistency.

KEY FEATURES

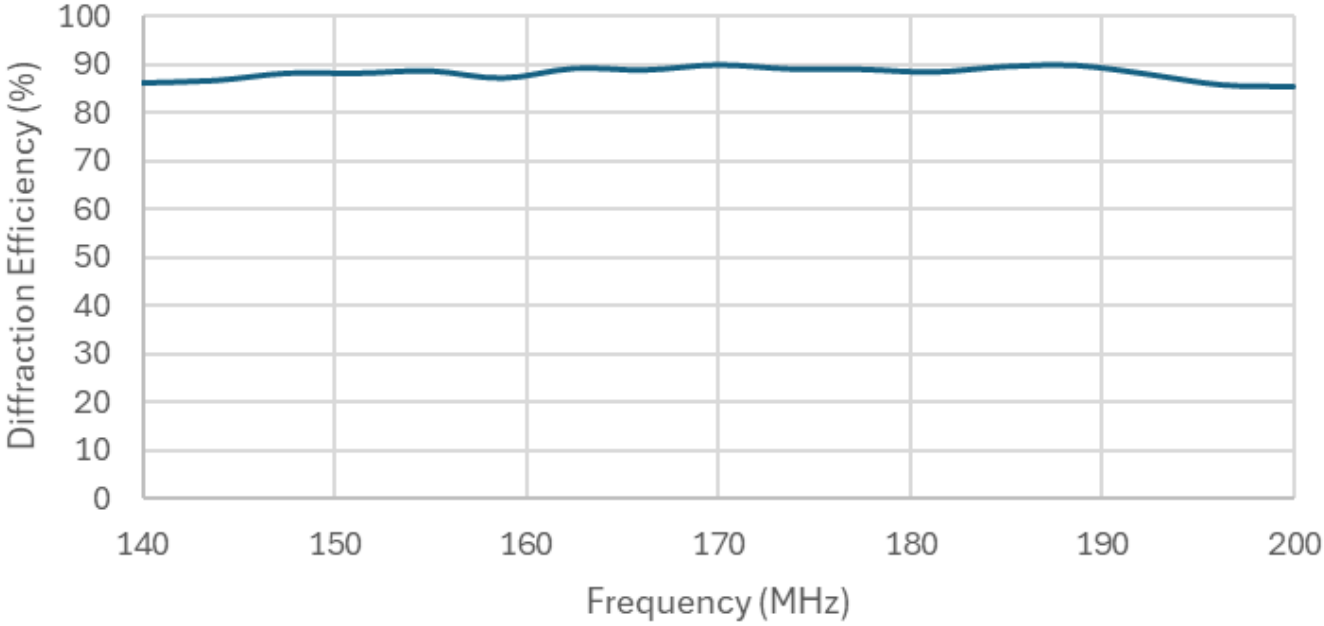
- Solid state design
- Accurate and reproducable position control
- Fast scan speeds
- Good temperature stability
- Variety of offerings
- Other wavelengths available
- Design expertise

KEY G&H BENEFITS

- Proven reliability
- Consistent performance
- Expert support
- Every device factory tested
- Volume production
- One year limited warranty

APPLICATIONS

- Micro machining
- Inspection
- Via drilling
- Graphic imaging

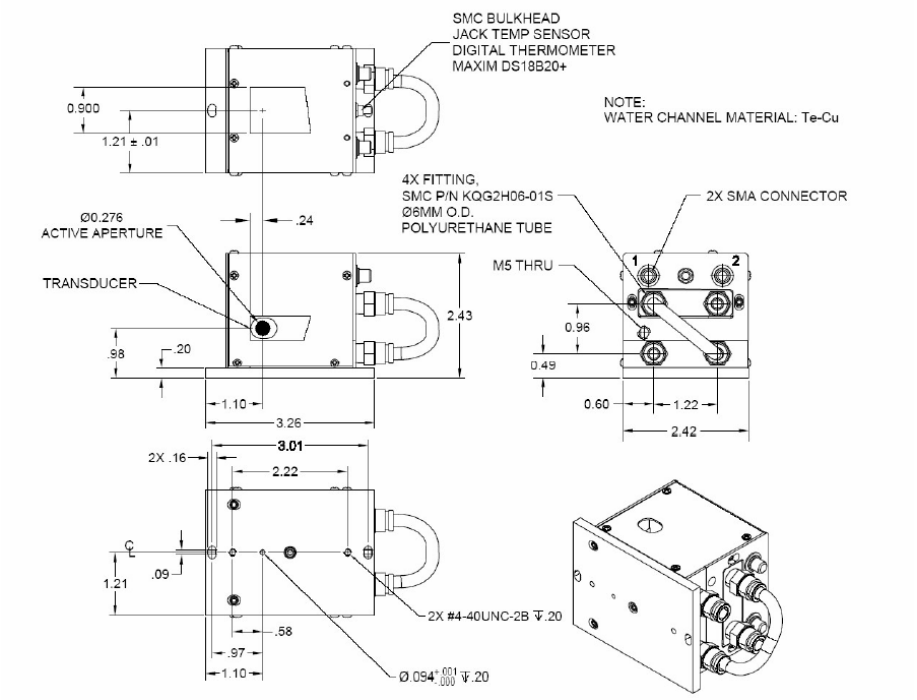

Example of Diffraction Efficiency at 355nm of AODF 4170
with 6000 Series AO Driver
Diffraction Efficiency (%)
100
90
80
70
60
50
40
30
20
10
0
140
150
160
170
180
190
200
Frequency (MHz)

OPTICAL PERFORMANCE*		
Model / Part Number	AODF 4170 / 97-03430-02	AODF 4210 / 97-03495-01
AO medium	Crystal quartz	Crystal quartz
Acoustic mode	Longitudinal	Longitudinal
Acoustic velocity	5.74 mm/µs	5.74 mm/µs
Wavelength	343 and 355 nm	266 nm
Input polarization	90° to mounting plane	90° to mounting plane
Output polarization	90° to mounting plane	90° to mounting plane
Insertion loss	1%	1%
Center frequency (Fc)	170 MHz	210 MHz
RF bandwidth	80 MHz	100 MHz
RF power	20 W nominal	<15 W
Active aperture	7 mm Ø	5 mm Ø
Diffraction efficiency	85%** minimum	>85% average
Peak valley at 633 nm	0.2	0.1
RMS at 633 nm	N/A	N/A
VSWR	1.8:1	2:1
Scan angle	4.95 mrad	4.6 mrad, (>5 mrad typical)
Input Impedance	50Ω	50Ω
Cooling water flow rate	2-3/L min. @ <25°C (Water channels Te-Cu)	2-3/L min. @ <25°C (Water channels Aluminum)

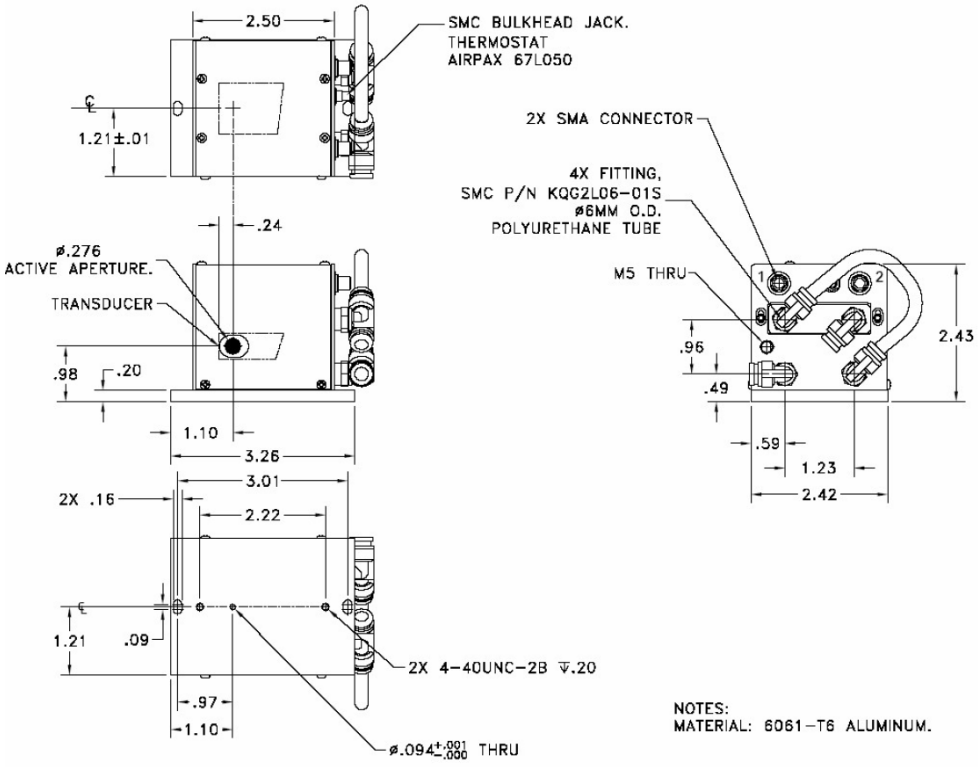
*Specifications subject to change.

**When RF power is supplied by 6000 Series NGD AO Driver in MUX configuration.

4170


SMC BULKHEAD
JACK TEMP SENSOR
DIGITAL THERMOMETER
MAXIM DS18B20+
NOTE:
WATER CHANNEL MATERIAL: Te-Cu
0.900
1.21 ± .01
4X FITTING,
SMC P/N KQG2H06-01S
Ø6MM O.D.
POLYURETHANE TUBE
2X SMA CONNECTOR
Ø0.276
ACTIVE APERTURE
.24
TRANSDUCER
M5 THRU
2.43
.98
.20
0.96
0.49
1.10
3.26
0.60
1.22
2.42
2X .16
3.01
2.22
1.21
.09
2X #4-40UNC-2B ↧.20
.58
.97
1.10
Ø.094 +.001 -.000 ↧.20

4210


2.50
SMC BULKHEAD JACK.
THERMOSTAT
AIRPAX 67L050
1.21±.01
2X SMA CONNECTOR
4X FITTING,
SMC P/N KQG2L06-01S
ø6MM O.D.
POLYURETHANE TUBE
.24
ø.276
ACTIVE APERTURE.
M5 THRU
TRANSDUCER
.96
2.43
.98
.20
.49
1.10
3.26
.59
1.23
2.42
3.01
2X .16
2.22
1.21
.09
2X 4-40UNC-2B ↧.20
.97
1.10
ø.094 +.001 -.000 THRU
NOTES:
MATERIAL: 6061-T6 ALUMINUM.