

Acousto-optic Q switch

General Situation

Acousto-optic Q-switching (AOQS) is a laser that works in the laser cavity and generates short pulse peak power by actively adjusting the Q value in the laser cavity. AOQS is usually the loss of modulating level 0 light. When the RF driver of AOQS is turned on, the laser in the cavity cannot form oscillation due to the diffraction of the level 0 light, the cavity loss increases and prevents the laser output. When the RF driver is turned off briefly, the accumulated optical power in the laser cavity is emitted in the form of a pulse to generate a pulsed laser, and the process can be repeated at a rate of more than 100kHz. AOQS can operate either in the Bragg state with only a single diffracted beam like AOM (acousto-optic modulator), or in the Raman-Nath state with multiple diffracted beams.

Product Introduction

Goptica has a complete range of polarization-oriented (cut) or unpolarized laser solutions that can be adapted to include lamp-pumped lasers, as well as LD-pumped lasers. Goptica AOQS products range in wavelength from ultraviolet to far infrared, with diameters up to 12mm. AOQS selects high-quality acousto-optic materials (fused quartz, quartz crystal, Ge crystal, etc.), which can be designed into shear and longitudinal wave modes according to needs. The process uses high-quality optical polishing, anti-reflective coatings with low reflection and high damage, reliable welding technology, and novel acoustic management and opto-mechanical design technology to achieve excellent thermal management and maintain excellent beam quality and high transmittance.



Apply

Lamp pump and end pump DPSS laser, laser marking, lithography, material processing, surgical hand, micromachining.

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Parameter

Product number	Operating wavelength (nm)	Effective aperture (mm)	Operating frequency (MHz)	Loss modulation	Optical material	Heat dissipation mode
Q0002-QL080-015-1064	1064	1.5	80	>85%	Quartz crystal	Conduction cooling
Q0003-QL080-015-1064	1064	1.5	80	>85%	Quartz crystal	Conduction cooling
Q0015-FL027-040-1064	1064	4	27.12	>90%	Fused quartz	Fused quartz
Q0016-FL041-050-1064	1064	5	40.68	>90%	Fused quartz	Fused quartz
Q0017-QL080-030-1064	1064	3	80	>85%	Quartz crystal	Conduction cooling
Q0018-QL041-015-1064	1064	1.5	40.68	>85%	Quartz crystal	Conduction cooling
Q0019-QL068-030-1064	1064	3	68	>85%	Quartz crystal	Conduction cooling
Q0020-FL027-060-1064	1064	6	27.12	>90%	Fused quartz	Fused quartz
Q0021-FS041-060-1064	1064	6	40.68	>86%	Fused quartz	Fused quartz
Q0022-QL068-060-1064	1064	6	68	>85%	Quartz crystal	Conduction cooling
Q0023-QL080-010-1064	1064	1	80	>85%	Quartz crystal	Conduction cooling
Q0029-QL080-015-1064	1064	1.5	80	>85%	Quartz crystal	Conduction cooling
Q0030-QL080-012-1064	1064	1.2	80	>85%	Quartz crystal	Conduction cooling
Q0031-QL041-015-1064	1064	1.5	40.68	>85%	Quartz crystal	Conduction cooling
Q0032-QL080-025-1064	1064	2.5	80	>85%	Quartz crystal	Conduction cooling
Q0033-QL068-030-1030	1030	3	68	>85%	Quartz crystal	Conduction cooling
Q0034-QL080-012-1064	1064	1.2	80	>85%	Quartz crystal	Conduction cooling

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Product number	Operating wavelength (nm)	Effective aperture (mm)	Operating frequency (MHz)	Loss modulation	Optical material	Heat dissipation mode
Q0036-FS041-060-2000	2000	6	40.68	>70%	Fused quartz	Fused quartz
Q0037-FS068-060-1064	1064	6	68	>85%	Fused quartz	Fused quartz
Q0038-QL080-050-1030	1030	5	80	>85%	Quartz crystal	Fused quartz
Q0040-FL027-020-1064	1064	2	27.12	>90%	Fused quartz	Fused quartz
Q0041-QL068-025-1880	1880	2.5	68	>85%	Quartz crystal	Fused quartz
Q0042-QL080-015-1064	1064	1.5	80	>85%	Quartz crystal	Conduction cooling
Q0043-QL041-040-2000	2000	4	40.68	>70%	Quartz crystal	Fused quartz
Q0044-QL041-012-1064	1064	1.2	40.68	>85%	Quartz crystal	Conduction cooling
Q0045-QL080-010-1540	1540	1	80	>80%	Quartz crystal	Conduction cooling
Q0046-FS027-020-1064	1064	2	27.12	>86%	Fused quartz	Fused quartz
Q0047-TL080-012-1030	1030	1.2	80	>85%	Tellurium dioxide	Conduction cooling
Q0048-QL080-010-1064	1064	1	80	>85%	Quartz crystal	Conduction cooling
Q0049-FL041-040-1064	1064	4	40.68	>90%	Fused quartz	Fused quartz
Q0050-FS041-040-1064	1064	4	40.68	>86%	Fused quartz	Fused quartz
Q0051-FS041-050-1064	1064	5	40.68	>86%	Fused quartz	Fused quartz
Q0052-FL027-020-1064	1064	2	27.12	>90%	Fused quartz	Fused quartz
Q0053-FL041-020-1064	1064	2	40.68	>90%	Fused quartz	Fused quartz
Q0054-QL060-040-1030	1030	4	60	>86%	Quartz crystal	Fused quartz
Q0056-QL080-030-1064	1064	3	80	>85%	Quartz crystal	Conduction cooling
Q0057-QL080-010-1064	1064	1	80	>85%	Quartz crystal	Conduction cooling
Q0058-QL080-015-1064	1064	1.5	80	>85%	Quartz crystal	Conduction cooling

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Q0059-QL080-010-1535	1535	1	80	>85%	Quartz crystal	Conduction cooling
Q0060-QL080-015-1064	1064	1.5	80	>85%	Quartz crystal	Conduction cooling
Q0061-QL080-015-1064	1064	1.5	80	>85%	Quartz crystal	Conduction cooling
Q0062-QL080-010-1064	1064	1	80	>85%	Quartz crystal	Conduction cooling
Q0063-QL041-015-1064	1064	1.5	40.68	>85%	Quartz crystal	Conduction cooling
Q0065-FL027-030-1064	1064	3	27.12	>90%	Fused quartz	Fused quartz
Q0066-QL041-050-2000	2000	5	40.68	>70%	Quartz crystal	Fused quartz
Q0067-FS050-030-1064	1064	3	50	>86%	Fused quartz	Fused quartz
Q0068-QL080-012-1064	1064	1.2	80	>85%	Quartz crystal	Conduction cooling
Q0069-QL080-015-1064	1064	1.5	80	>85%	Quartz crystal	Conduction cooling
Q0070-TL120-010-1064	1064	1.0	120	>35%	Tellurium dioxide	Conduction cooling