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MODEL 5055SC
INTEGRATED DRIVER / POCKELS CELL
Q-SWITCHING SYSTEM

LASERMETRICS® 5055SC Systems incorporate the latest HV MOSFET technology with the company's well known high speed Pockels cell Q-switches. The combination is intended primarily for laser Q-switching and cavity dumping and can also be utilized for pulse selection, extraction, seeding and chopping. With appropriate Pockels cells, a system can operate over a wavelength range of 250 nm to 1300 nm.

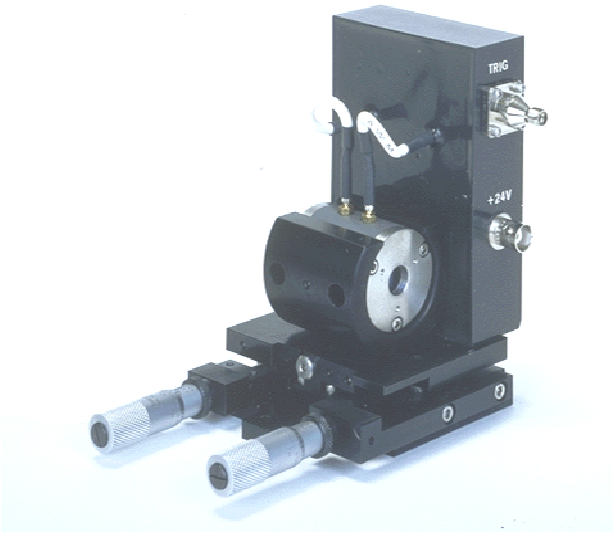
FEATURES

- Self-contained HV Power Supply
- Gimbal Mounted Pockels Cell
- Accepts most 1 3/8"D Pockels Cells
- High Reliability & Small Footprint
- ≤3 Nanosecond Optical Rise Time
- Optical or Electrical Triggering
- Repetition Rates up to 1000 pps
- EMI/RFI shielded enclosure

5055SC Systems feature a High Voltage Pulse Module with a self-contained high voltage supply which requires only +24 volts DC input. An AC to +24VDC miniature converter is available for supplying the required DC voltage. High voltage is adjusted to the required level by an integral miniature potentiometer. The HV Pulse Module can be triggered from conventional TTL pulse sources. Repetition rates of 1000 pulses per second are attained with the standard HV Pulse Module. Higher repetition rates, up to 5,000 pps, are available at lower voltages and with a larger module. 5055SC Systems incorporate an EMI/RFI shielded enclosure with no exposed HV terminals as shown on the outline drawing.

The Pockels cell operates with no static DC high voltage applied - the driving pulse switches from zero to the preset operating HV level. This feature prevents cumulative ion migration damage which occurs in KD*P crystals with application of continuous DC voltage. Since both Pockels cell and HV Pulse Module are rigidly fixed to the gimbal mounting surface and no stiff HV cables are required, there is no tendency for the alignment to change because of pressure from cables.

KD*P Pockels cells (Series 1059) are useful with large beam diameters and where peak power densities exceed 750 MW/cm^2, 20 ns pulse width. RTP Pockels cells (Series 1147) are recommended for operation where high average power, freedom from piezoelectric ringing or wavelengths longer than 1100 nm are needed. Both types of Pockels cells offer highest transmittance, nominally 98.5%, in the range of 800 nm to 1100 nm.



5055SC with Pockels Cell Cover Shield Removed.

Sol Gel antireflection coatings for the KD*P crystal surfaces can reduce reflectance to 0.05% per surface. These coatings are valuable in high fluence lasers - they do not cause non-linear absorption effects or contribute to thermally induced beam distortions.

NOTE: The 5055SC is available without a Pockels cell to accommodate customers who have a suitable device. It can be supplied with an adaptor to hold an industry standard, 1.375" diameter cell or with an aluminum plate adaptor which mates with the system mounting gimbal. The plate can be modified to hold a variety of Pockels cell shapes.

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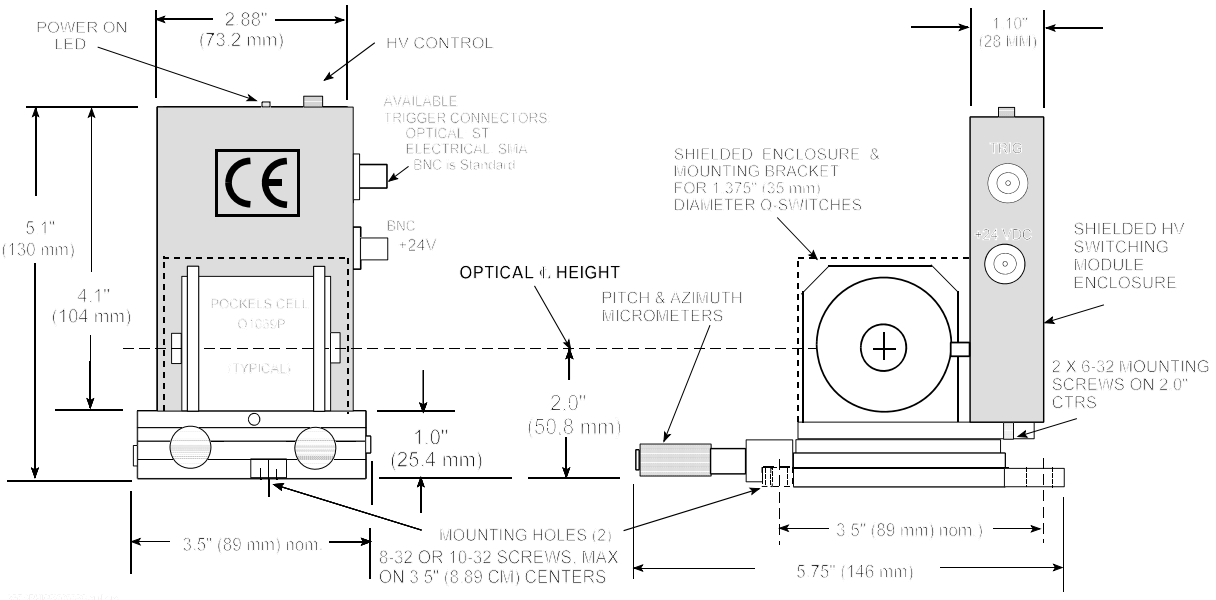
5055SC System -- NOMINAL SPECIFICATIONS

Wavelength Range	With RTP, (Series 1147) With KD*P, (Series Q1059P)	700 nm to ≈2500 nm 300 nm to 1100 nm
Optical Transmission (With appropriate antireflection coatings)	RTP & KD*P-with sol gel crystal coatings	≥98.5%
Optical Switching Speed (10%-90%)		<5 nanoseconds
Optical Center Line Height		2.0" (5 cm)
Recommended Peak Power Density, 1064 nm, no hot spots,	KD*P & RTP Pockels cells	850 MW/cm^2, 10 ns PW 750 MW/cm^2, 20 ns PW ≈10 GW/cm^2, ≤250 ps PW
High Voltage DC Range		1000 to 5000 volts
High Voltage Pulse Output Range		0.96 X HV DC, Typical
Output Pulse Repetition Rate		One Shot to 1000 pps Standard,
Output Pulse Width, nominal		≈5 µseconds
Output Jitter, Trigger Input to HV Output		<2 nanoseconds
Input Trigger Level: Electrical Pulse, SMA Connector, Option 1		TTL Levels, (5 Volts max.)
Input - Output Time Delay		<50 nanoseconds
DC Power Input (BNC Connector)		+24 ±5% volts DC, 7 Watts
Mounting Gimbal, Pitch & Azimuth		Model MG-145
Power Supply AC 100 - 240VAC, 50/60Hz to 24 Volt DC,1.6Amps		Model MW4024F (optional)



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Prices & Specifications subject to change without notice