

- Pulse Voltages up to 8 kV
- Repetition Rates up to 5 kHz
- Completely Solid State
- Rise times less than 10 nanoseconds
- Wavelengths from 300 nm to 2500 nm
- Operates safely with KD*P, CdTe, BBO LiNbO₃ and other Q-switch materials
- Available with EMI/RFI suppressed HV Driver / Optical Head Assembly.
Meets European CE Mark requirements



5048 System design applies the latest technology in high voltage field effect transistor circuits. Capable of switching speeds of 5 nanoseconds and operation at up to 5 kHz, 5048 Systems provide versatility, high reliability, and ease of use.

Systems are available with KD*P Q-switches for operation at wavelengths ranging from 300 nm to 1100 nm or with lithium niobate Q-switches for wavelengths from 700 nm to 2500 nm. Wavelength range for a particular crystal material is a function of the anti-reflection coatings on the Q-switch. Brewster angle cut lithium niobate crystals are available for use over the full range of crystal transmission.

5048 Systems consist of a Power Supply / Pulse Timing Generator, a HV Pulse Output Module and a Q-switch. A Glan-Laser Air Spaced Polarizer may also be specified. The HV Pulse Module should be in close proximity to the Q-switch and the Power Supply / Timing Generator is remotely located .

5048 systems can operate over a wide range of output pulse voltages with no change in the output pulse waveform. A unique characteristic of the FET HV output switches is that the output pulse rise time remains constant over the full range of output voltages.

Pulsed output voltage of the HV Switching module can be manually adjusted by a front panel control on the power supply to accommodate quarter wave or half wave operation. This may be accomplished for wavelengths up to 2500 nm for lithium niobate Q-switches and up to 1100 nm for KD*P Q-switches.

KD*P Q-switches with sol gel antireflection coatings on the crystal are recommended for use with large beam diameters (>8 mm) and where peak power densities of more than 750 MW/cm² (≤ 10 nsec pulse width) are present. Lithium niobate is recommended for applications with high repetition rates (>100 pps) and peak power densities of <250 MW/cm².

For OEM and other applications where the HV Switching Module and Q-switch are enclosed in a shielded enclosure, the configuration pictured above is recommended. Where the Module and Q-switch are not so enclosed and high voltage switching noise must be suppressed, the Optical Head Assembly enclosure shown on the following page should be specified. This enclosure complies with all requirements of the new European EMC regulations for radiated and conducted emissions.

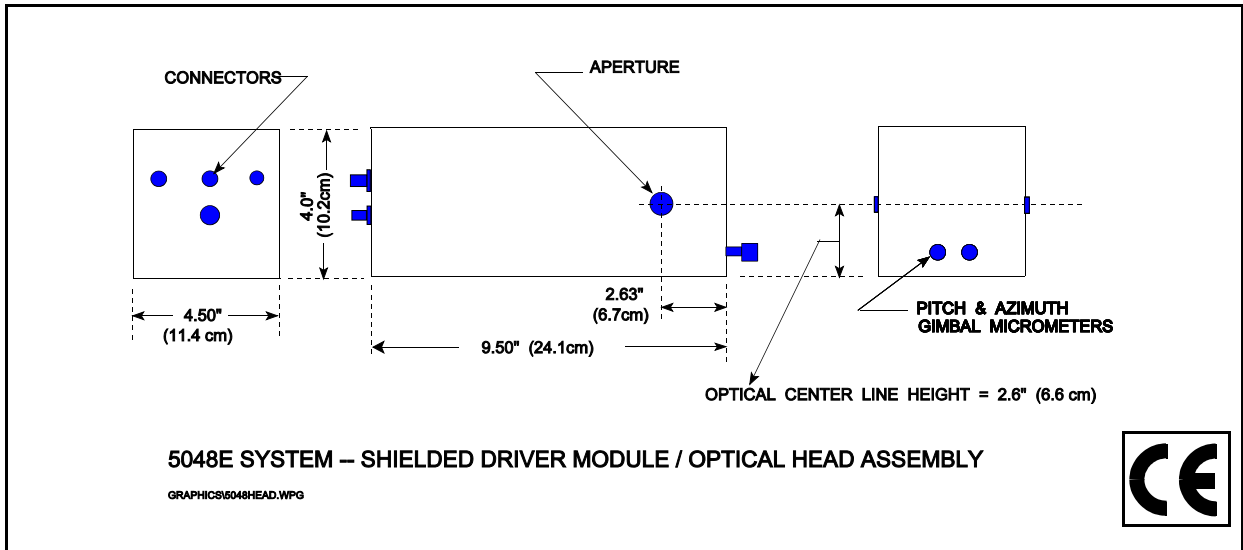
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5048 SYSTEM / TYPICAL SPECIFICATIONS*

5048 Systems are self-contained and consist of the following elements:

5048 HV Power Supply/Timing Generator & 5048 HV Pulse Module
 Series 3900 or 3910 Lithium Niobate Q-Switches or Series 1059 KD*P Q-Switches
 Cable/Connector Set

Wavelength Range:	With Lithium Niobate With KD*P	700 nm to 2500 nm (1064 nm is standard) 300 nm to 1100 nm
Optical Transmission:	Lithium Niobate KD*P	>99% >98.5% (with sol gel AR coatings)
Optical Switching Speed		5 nanoseconds, nominal
Recommended Peak Power Density, no hot spots	Lithium Niobate Q-switches KD*P Q-switches	250 MW/cm ² absolute max. 850 MW/cm ² for ≤10 ns PW
Output Pulse Repetition Rate		Single Shot to 5 kHz
Output Pulse Delay Range		35 μSec to 1.0 mSec
Output Pulse Jitter		± 0.2% of setting + 1 nSec
Output Pulse Jitter, for direct triggering of HV Pulse Module		< 1 nSec
Input Trigger Signal		TTL levels, ± polarity
AC Line		100-130 or 190-240 volts 50/60 Hz (specify)
Dimensions: Power Supply/Pulse Timing Gen.		8 H x 11 W x 11 D inches
Standard Output Pulse Module (photo, page 1)		2.5 H x 3 W x 6 D inches



*The specifications given above are for a 5048 System intended for operation at 1064 nm. This system includes a Model 3904-106 Lithium Niobate Q-switch with AR coatings for 1064 nm, a 5048 Power Supply/Pulse Timing Generator and 5048 HV Pulse Module. Maximum pulse voltage for this system is ≈4500 volts. This combination can be used at shorter wavelengths with appropriate AR coatings on the Q-switch. For KD*P Q-switches or for longer wavelengths using lithium niobate, higher voltage power supplies may be needed and additional switching stages are used in the HV Pulse Module. Contact our Engineering Sales Dept. for information and assistance in selecting the most appropriate combination of elements. The Power Supply and Driver Module are available separately for use with other manufacturers Pockels cells