新特光电
Sintec Optronics

CHIRON SERIES

BBO Pockels Cell

PRODUCT DATASHEET

Chiron BBO Pockels cells raise the bar for high repetition rate and high-average power laser applications.

The Chiron BBO Pockels cell design builds on the dual crystal geometry successfully used to minimize drive voltage (~2.3 kV quarter-wave voltage @ 1064 nm for the Chiron 3). BBO Pockels cells operate from approximately 0.2 to 1.65 µm and are not subject to tracking degradation. Due to the low piezoelectric coupling coefficients of BBO, the Chiron cells function at repetition rates up to 1 megahertz.

Chiron Pockels cells work in regenerative amplifiers, high pulse repetition rate micro-machining lasers, and high-average power lasers for material processing and metal annealing.

Key Features

- High pulse rate operation to 1 MHz
- Solid state – no index matching fluid
- Low acoustic noise
- Damage resistant ceramic apertures
- Compact design
- High-reliability
- Operation at high average power

Key Benefits

- Ideal for high average power systems
- Low absorption leading to reduced thermal lensing/thermal depolarization
- Exceptional high repetition rate performance
- Excellent, accessible technical support

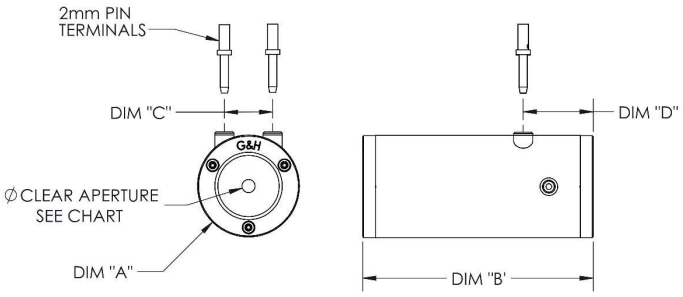
Applications

- Military
- OEM and replacement laser systems:
  - Machining, marking, via drilling
  - Ophthalmology
  - Q-switching and regenerative amplifiers
  - Research

Performance Data

Typical specifications for standard cell	Chiron 2.6	Chiron 3	Chiron 4	Chiron 5	Chiron 7
PHYSICAL					
Hard aperture diameters in mm	2.6	3.25	4	5.5	7
Single pass insertion loss @ 1064 nm	< 1.5%	< 1.5%	< 1.5%	< 1.5%	< 1.5%
Intrinsic contrast ratio (ICR) @ 1064 nm	> 1000:1	> 1000:1	> 1000:1	> 1000:1	> 1000:1
Voltage contrast ratio (VCR) @ 1064 nm (parallel polarizers)	> 1000:1	> 1000:1	> 1000:1	> 1000:1	> 1000:1
Single pass wavefront distortion @ 1064 nm	< λ /6	< λ /6	< λ /6	< λ /6	< λ /6
LIDT[1], 10 Hz @1064 nm, 10 ns, ~1 mm diameter	10 J/cm^2	10 J/cm^2	10 J/cm^2	10 J/cm^2	10 J/cm^2
ELECTRICAL					
Capacitance (DC)	~4 pF	~4 pF	~4 pF	~4 pF	~4 pF
DC quarter wave voltage (±6%) @ 1064 nm	1.9 kV	2.3 kV	2.9 kV	3.8 kV	4.7 kV
Temperature range exposure to simulate storage and shipping conditions [2]	-25°C to 50°C				
10-90% rise time (theoretical) into 50 Ω line	~ 1 ns	~ 1 ns	~ 1 ns	~ 1 ns	~ 1 ns
Duty cycle in 1 s (applied voltage time/total time)	< 5%	< 5%	< 5%	< 5%	< 5%

1 Recommended operation at 1/2 this fluence level for increased longevity. LIDT will vary with wavelength and beam parameters.
2 May require 48 hours, or more, to equilibrate following exposure to temperature extremes for contrast ratio values to recover.



MODEL	CLEAR APERTURE	DIM "A"	DIM "B"	DIM "C"	DIM "D"
CHIRON 2.6	0.102 [2.6]	0.998 [25.3]	2.255 [57.2]	0.472 12.0]	0.685 [17.4]
CHIRON 3	0.128 [3.2]	0.998 [25.3]	2.255 [57.2]	0.472 12.0]	0.685 [17.4]
CHIRON 4	0.157 [4.0]	0.998 [25.3]	2.255 [57.2]	0.472 12.0]	0.685 [17.4]
CHIRON 5	0.217 [5.5]	0.998 [25.3]	2.255 [57.2]	0.472 12.0]	0.685 [17.4]
CHIRON 7	0.276 [7.0]	1.375 [34.9]	2.982 [75.7]	0.633 [16.1]	1.491 [37.8]