



GEOLA

# Solid State Blue Pulsed Lasers

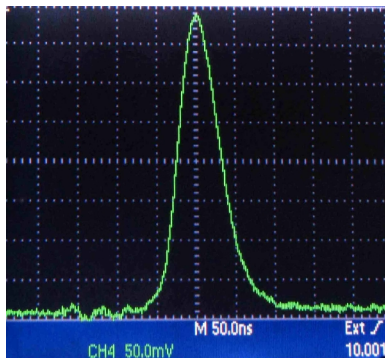
The BlueBird Series of Pulsed Nd:YAG Lasers



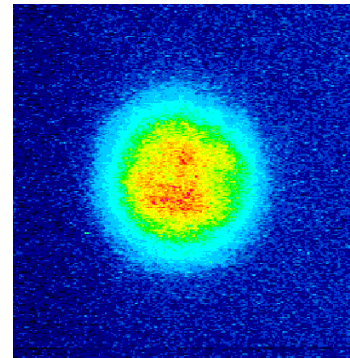
Geolas BlueBird series lasers emit 440nm and are particularly designed to replace CW lasers in embossed holograms master originating process. Having SLM with coherence length greater than 3 meters, peak power of up to 300kW, continuous power of up to 450mW and low maintenance cost. BlueBirds are reliable replacement for HeCd CW lasers.

Because of just 50ns laser pulse duration, no vibration will affect your hologram recording. Moreover, our latest development shows that photoresist is more sensitive to pulsed than to CW radiation, so you will need much less power to expose the same photomaterial area.

## Beam Characteristics



Typical temporal pulse shape  
BlueBird 2



Typical transversal shape at 440nm  
BlueBird 2

## System Features

- ⊕ Optimized laser characteristics for hologram recording;
- ⊕ Pure Solid State laser design;
- ⊕ Low maintenance costs;
- ⊕ Low electrical consumption;
- ⊕ No water consumption;
- ⊕ Active cavity stabilization system;
- ⊕ Long coherence length > 3m source;
- ⊕ PC control via RS232 using advanced Geola software or LabView drivers;
- ⊕ Lasers are CE marked according to IEC 60825-1:2001/EN 60825-1:2001.



GEOLA

The BlueBird Series of Pulsed Nd:YAG Lasers

Technical Specifications

Base Model	BlueBird 1	BlueBird 2	BlueBird 3
Output Wavelength:	440 nm		
Max Output Energy:	3/2 mJ	6 mJ	15 mJ
Peak Power (at 50 ns):	60/40 kW	120 kW	300 kW
CW Power (at 30/60 Hz):	90/120 mW	180 mW	450 mW
Pulse Duration:	~50 ns		
Pulse repetition rate:	30/60 Hz	30 Hz	30 Hz
Energy Stability (StDev) for 20.000 shots at 30 Hz repetition rate:	3 %		
Beam Divergence:	Near Diffraction Limit for beam size		
Line width:	< 0.003 cm <sup>-1</sup>		
Beam Diameter (1/e <sup>2</sup> ):	~ 3...8 mm		
Beam Profile:	Gaussian in far field (Top-Hat optional)		
Beam Pointing:	< 150 μrad		
Polarization:	Vertical, > 98%		
Q-Switching Type:	Passive		
Triggering:	External / Internal		
Cooling	Air-watter		
<b>DIMENSIONS</b>			
Laser Head standard: (L x W x H)	860x250x180 mm	860x350x180 mm	860x400x180 mm
Power Cabinet: (L x W x H)	600 x 550 x 550 mm		
Umbilical length:	2.5 m		
<b>ENVIRONMENTAL REQUIREMENTS</b>			
Room Temperature:	22 - 24 °C		
Relative Humidity:	< 70% (non-condensing)		
Mains Voltage:	210...240 VAC, single phase 50/60 Hz		
Power Consumption:	~ 1.5 ... 4 kW		

Geola Digital reserves the right to change specification without notice

Options

- ⊕ Laser output (integrated) energy meter;
- ⊕ Programmable (PC) energy attenuator;
- ⊕ Programmable (PC) shutter - for single pulse to 300 seconds exposure;
- ⊕ Model with two colors output 440nm and 660nm;
- ⊕ Laser output beam - Top-Hat profile;
- ⊕ C++ libraries for laser controll software integration into customer production software.

Manufacturer

GEOLA DIGITAL uab

Address: 41 Naugarduko, LT-03227 Vilnius, Lithuania

Phone: +370 5 2132 737, [info@geola.com](mailto:info@geola.com)

[www.geola.com](http://www.geola.com)