



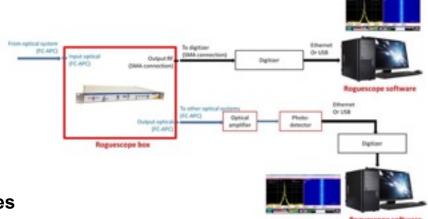
## **Applications**

- Laser Transients, Non-repetitive Dynamics of Laser Mode Locking
- Rare Events in Optical System
- Measurements of Fast Stochastic Processes
- Capturing Non-Gaussian Statistics
- Modulation Instability
- · High Through-put Spectroscopy
- Transients (Non-Linear Optics)



## **Description**

Roguescope is a real-time single-shot optical spectrometer with a frame rate of up to 100 million frames per second, at least one thousand times faster than the next fastest spectrometer. The Roguescope real-time capability is enabled by Time-Stretch Dispersive Fourier Transform. The Roguescope can capture large data sets to reveal optical dynamics and rare events with high accuracy.



# **Key Features**

- Real-time Single-shot at Extremely High Measurement Rate: > 100 Millions Frames per Second
- Wide Spectral Bandwidth: 200nm 650nm
- High Spectral Resolution: > 10pm
- · High Sensitivity: sub-mW
- Fiber-base for Rugged and Field-use





#### **Specifications**

OPTICAL AND ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)		
Model Number	TS-DFT-100-NIR	TS-DFT-100-IR
Wavelength Range	650 – 1000 nm	1000 – 1650 nm
Spectral Bandwidth	< 650 nm	
Spectral Resolution	>10 pm	
Pulse Length Range	10 fs to > 330 ps	
Acquisition Frame Rate	Up to 100 Millions frames/sec	
Temporal Range	330 ps	
Temporal Resolution	>15 fs	
Pulse Complexity	TBWP < 2000	
Optical Input Sensitivity	300 μW	
Maximum Optical Input	10 mW	
Intensity Accuracy	3%	
Input polarization	Not required	
Input Fiber Type	Singlemode Fiber or PM	
Fiber Connector Type	FC/APC	
Electrical Power Supply	90 to 270 VAC, 50/60 Hz	
Dimensions (WxHxD) and Weight	16.73"x1.72"x12", 8.3 lbs.	

MINIMUM SOFTWARE REQUIREMENTS		
Operating System	Windows 7 32-bit or 64-bit	
Processor (CPU)	2 GHz processor	
Memory	4 GB of RAM	
Storage	160 GB HDD or 32 GB SDD	
Graphic	Less than or equal to DX9	

#### Software

The Roguescope spectrometer comes with analytics software to enable real-time capturing of large datasets and perform signal analysis. It works on major operating systems like Mac OS and Windows. The software features includes multi-device interface capability, USB compatible, multi-windows analytics, reporting and recording functions, custom skins and color settings.

Amonics undertakes continuous and intensive product development to ensure its product performance at the highest technical standards. As a result, the specifications in this document are subject to change without notice.

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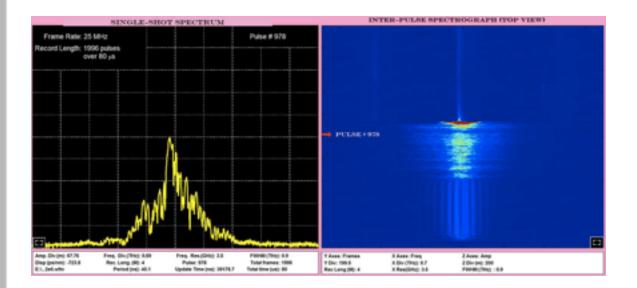




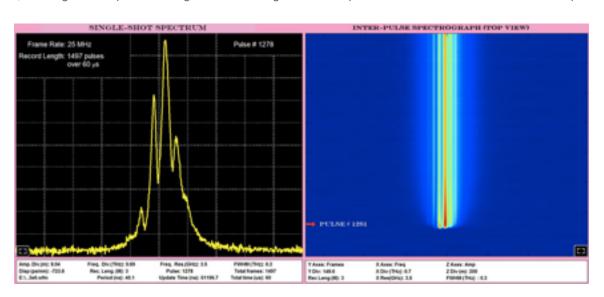


### **Sample Application Spectra**

1,996 single-shot spectra during a Q-switching event is captured at 25 Million frames/sec over 80 µs.



1,497 single-shot spectra during a mode-locking off event captured at 25 Million frames/sec over 60 µs.



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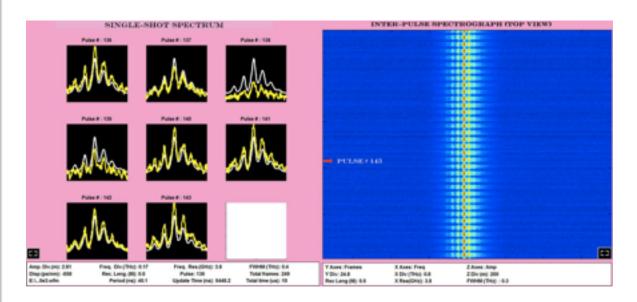
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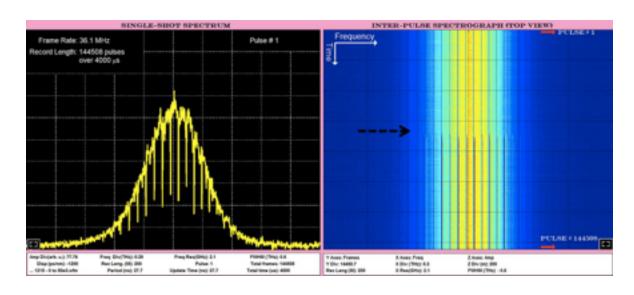


## **Sample Application Spectra**

249 single-shot spectra of a controlled transient event is captured at 25 Million frames/sec over 10 µs.



144,508 single-shot Acetylene gas absorption spectra captured at 36.1 Million frames/sec over 4 ms.



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