



FEMTOCHROME[®]
RESEARCH, Inc.

FR-103 AUTOCORRELATORS
COMPARISON MATRIX

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NL Crystal (SHG) units providing background-free operation w/ high dynamic range (~10⁴).

NL Crystal (SHG) Models	FR-103XL	FR-103MN	FR-103HP	FR-103WS
Pulsewidth Resolution	1fs ⁽¹⁾	< 1fs ⁽¹⁾	1fs ⁽¹⁾	<2fs ⁽¹⁾
Wavelength Range	410nm - 10μm	410 - 5000 nm	410-5000nm	410nm - 10μm
Scan Range	> 195ps	>75ps	> 75ps	> 500ps ⁽²⁾
Pulsewidth Range	5fs → 100ps	5fs → 40ps	5fs → 40ps	10fs → 400ps
Sensitivity [(P _{av} P _{pk}) _{min}] ⁽³⁾	10 ⁻⁷ W ²	10 ⁻⁷ W ²	10 ⁻² W ²	10 ⁻⁷ W ²
Fiber Coupled (/FA)	Option	Option	Option	Option
Interferometric (/IO)	Option	Option	Option	Option
Crosscorrelation (/CC)	Option	Option	Option	Option
Min. Input Pulse Rep Rate	4Hz ⁽⁴⁾	4Hz ⁽⁴⁾	4Hz ⁽⁵⁾	4Hz ⁽⁵⁾
Computer Data Acquisition	Option	Option	Option	Option
Comment	Uniformly Rotating // Mirror Assembly	Compact version of FR-103XL	Low cost for Medium &High Power lasers	Ultra-wide Scan Range (Real-Time)

- Notes: (1) With a <25μm NL crystal thickness
 (2) Scan range ~1nsec w/WSR option
 (3) Noise Equivalent signal level with PMT, a 1mm NL crystal and 1ps resolution
 (4) Min Rep Rate: Standard: ~100kHz, w/(HS): <1kHz, w/LRR (Low Rep Rate Option): 4Hz
 (5) Min Rep Rate: Standard ('real-time'): <1kHz, w/CDA: 4Hz

TPC units featuring interferometric operation

Two-Photon Conductivity (TPC)	FR-103MC	FR-103TPM
Resolution	1fs	1fs
Wavelength Range	200-3400nm	500-2200nm
Scan Range	>50ps	>50ps
Pulsewidth Range	5fs → 25ps	5fs → 25ps
Sensitivity ⁽⁸⁾	10 ⁻⁴ W ²	10 ⁻⁴ W ²
Interferometric	Yes	Yes
Fiber Coupled Option (/FA)	Yes	No
Computer Interface Option (/CDA)	Yes	Yes
Minimum Input Pulse Rep Rate	4Hz	4Hz
Comment	Inexpensive, palm-size OEM Applications	Two Photon Microscopy, w/o affecting optical set-up