

Ecomb-200/250R: Erbium Fiber Comb

Rack-mounted, ultra-low noise

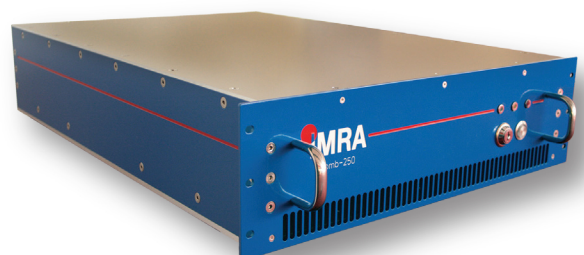
IMRA America offers a high performance frequency comb for advanced metrology applications, such as optical clocks and comb spectroscopy. The rack-mounted comb integrates easily, especially where a portable system is premium. An all-erbium platform, the frequency comb comes with fiber-coupled outputs and provides ultra-low phase noise, timing jitter, and superior frequency stability.

Features

- 200/250 MHz repetition rate
- 500/600 kHz repetition rate tuning range
- High coherence 1050 - 2200 nm continuum
- PM fiber-coupled output
- Vibration and temperature insensitive
- Integrated f_{ceo} detection
- Compatible with IMRA ULC locking electronics
- Remote operation via ethernet

Available Extensions

- 2 W Er comb
- 5 W Tm comb
- High coherence visible continuum
- Clock wavelength outputs selectable from 530 - 1200 nm
- > 10 mW mid-IR comb
- Radiation-hardened design
- OEM versions



Ecomb-200R/250R Specifications	
Repetition Rate	200/250 \pm 0.5 MHz
Tuning Range	> \pm 500/600 kHz
F _{rep} Control Bandwidth	>500 kHz
Free-running f _{ceo} SN	>40 dB at 100 kHz resolution
Supercontinuum Output	1050 – 2200 nm
Outputs via PM FC/APC-coupled Fiber	2.0 meter
Power per Port	> 5 mW
High Power Option 1	> 450 mW (with separate table unit)
High Power Option 2	> 2.0 W (with separate table unit)
Center Wavelength per Port	1560 \pm 20 nm
Spectral Width per Port	> 25 nm at -3 dB point
Comb Linewidth	< 1 Hz (with sub-Hz optical reference)
Relative Frequency Stability	< 5 \times 10 ⁻¹⁸ in 1 second
Relative Frequency Stability	< 5 \times 10 ⁻²⁰ in 1000 seconds
Frequency Accuracy	< 3 \times 10 ⁻¹⁸ in 100 seconds
System Size	19", 3U rack-mountable, 22" long
Storage Temperature	-20 °C to +50 °C
Warm-up Time	< 2 hours
Operational Temperature	20 \pm 2.5 °C
Power Consumption	< 150 W
Laser On/Off	via PC

Product Features

- Up to 3 PM fiber-coupled outputs
- Tunable repetition rate via PC
50 - 250 MHz available
- > 300 kHz f_{ceo} control bandwidth available, upon request



Front and back view of Ecomb-250R standard module



IMRA

*Er-fiber comb is currently not certified to the Laser Product Performance Standard from the U.S. FDA/Center for Devices and Radiological Health (CDRH). U.S. federal regulations require that lasers that are not certified to the CDRH standard be sold only to manufacturers of electronic products for use as components in such products.

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