

Ecomb Systems

For integration with optical clocks & quantum systems

IMRA America offers integrated Ecomb systems with multiple high stability wavelength outputs. The system is based on modularized rack-mounted sub-systems with relevant cw inputs that can all be referenced to a master clock signal via the comb system.

Features

- 100 - 250 MHz repetition rate
- Up to 1 MHz repetition rate tuning range
- PM fiber-coupled output
- Integrated f_{ceo} detection
- IR continuum option from 950 - 2300 nm
- Visible continuum option from 500 - 1060 nm
- Vibration and temperature insensitive
- Compatible with IMRA ULC locking electronics
- In-field replaceable pump diode
- Remote operation via ethernet
- Mix and match rack-mounted subsystems

Available Extensions

- 100 W Yb comb
- 5 W Er comb
- Integration with Hz level reference cavities



Ecomb System Specifications	
Repetition Rate	100 - 250 MHz (factory selectable)
Tuning Range	Up to 1 MHz
F_{rep} Control Bandwidth	> 300 kHz
Free-running f_{ceo} SN	35 - 45 dB at 100 kHz resolution
IR Supercontinuum Output	950 - 2400 nm
Visible Supercontinuum Output	500 - 1050 nm
Monitor per Port	> 100 μW
Number of Output Ports	10
Power per Port	> 1 mW
Er High Power Option	> 5 W
Yb High Power Option	> 100 W
Relative Stability	$< 3 \times 10^{-16}/\text{tau}$
Ultra-high Stability Option	$1 \times 10^{-17}/\text{tau}$
Accuracy	1×10^{-18} in 100 sec
Operational Temperature	20 - 25 $^{\circ}\text{C}$
Warm-up Time	< 2 hours
Interlock	via Limo connector
Laser On/Off	via PC

Compatible with IMRA's
Universal Locking Electronics (pictured)



Product Features

- Up to 10 PM fiber-coupled outputs
- Compatible with IMRA clock tools software for clock analysis



*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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