



## IOE 1130 L Booster Amplifier

The Onetta IOE 1100 L-Band EDFA Series are high-performance intelligent L-band erbium-doped fiber amplifiers (EDFAs) for long-haul and ultra long-haul applications. The IOE 1130 L Booster Amplifier is part of the IOE 1100 L-Band EDFA Series and features high output power and low noise figure, which allows cascading of multiple optical amplifiers carrying high channel counts at high bit rates<sup>1</sup>. Onetta's automatic gain control and versatile software simplify tuning in the factory or in the field to accommodate diverse fiber spans and varying network operating conditions such as channel add/drop and protection switching. The high-level of electronic and optical integration saves system design time and valuable real estate.

### LOW NOISE FIGURE:

Onetta's leading expertise and proprietary designs enable noise figures in the L-Band that are equivalent to the attractive noise figures obtained in C-Band applications.

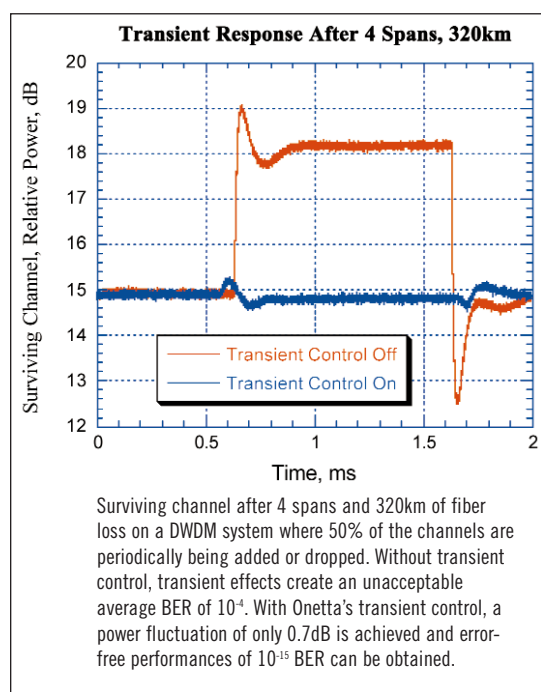
### BEST-IN-CLASS ULTRA-FAST OPTICAL POWER TRANSIENT CONTROL:

Onetta's transient control allows a fiber optic system to dynamically compensate for sub-millisecond fluctuations in network power levels that are caused by channel loading changes, passive loss variations, and network protection switching. Dynamic network scenarios lead to optical power transients that may degrade quality of service in networks using conventional EDFAs. As more conventional amplifiers are cascaded, the speed and magnitude of transients are compounded. Onetta's proprietary design dramatically reduces transient effects, allowing for much longer amplifier cascades, more flexibility in network configuration, and reliability in network operation.

### FULLY INTEGRATED CONTROL ELECTRONICS:

Onetta's integrated control electronics reduce system design time and save real estate by providing a simple electrical interface to equipment manufacturers' line cards. Drivers for pumps and other

components are built-in. The digital control system features an easy-to-use interface and command set. Integration of the IOE 1130 L Booster Amplifier is simple with standard +5VDC and GND power lines and a RS-232 interface. Additional monitor and alarm pins are provided for subsequent incorporation into element and network management systems.



## ADDITIONAL FEATURES AND BENEFITS:

- ▶ Low noise figure: Advanced optical design results in low noise figure, which allows longer amplifier cascades and extends network reach.
- ▶ Excellent gain flatness: Gain across the entire band is extremely uniform over the full input power dynamic range under normal operating conditions<sup>2</sup>, which allows longer amplifier cascades and system reach.
- ▶ Variable gain: The IOE 1130 L Booster Amplifier accommodate a wide range of dynamic network scenarios, such as varying span lengths and their associated transmission fiber losses, as well as changes in network passive losses. The IOE 1130 L Booster Amplifier can be configured via simple software commands in the factory or in the field.
- ▶ Mid-stage access ports: Dispersion compensation and optical add/drop functionality can be built into the mid-stage of the EDFA.
- ▶ High reliability: All of the optical components used in the IOE 1130 L Booster Amplifier have been qualified to Telcordia standards.
- ▶ Volume production: Onetta's IOE 1130 L Booster Amplifiers are designed for volume production.

## IOE 1130 L BOOSTER AMPLIFIER OPTICAL SPECIFICATIONS

The IOE 1130 L Booster Amplifier is ideal for terminal or node applications requiring low noise figures with high input powers. This amplifier can compensate for terminal or node losses from optical add/drop multiplexers (OADMs) and optical routing or switching. The following table represents performance under typical operating conditions. Contact Onetta for more information regarding performance under specific run conditions.

IOE1130L-11680D000		Units
Bandwidth	1570.42 – 1603.17	nm
Total input power (fully loaded spectrum)	+5	dBm
Total output power (fully loaded spectrum)	21	dBm
Gain ripple (over entire operating temperature range)	1.7	dB
Gain ripple (over single temperature)	1.0	dB
Noise figure (at +5dBm total input power and 16dB gain)	8.0	dB
Total power into the mid-stage (fully loaded spectrum)	16	dBm
Mid-stage loss	7	dB
Polarization Mode Dispersion (PMD)	0.4	ps
Polarization Dependent Gain (PDG)	0.3	dB
Warm-up time	3	min
Transient response with 3dB power add/drop	50	μs
Maximum excursion with 3dB power add/drop	0.7	dB
Physical dimensions	200 x 130 x 29	mm
Power consumption	60	W

For more information on product specifications,  
please contact the Onetta Sales Department at [sales@onetta.com](mailto:sales@onetta.com)

<sup>1</sup> Typical applications include 40 ITU-T channels at 100GHz spacing carrying bit rates of up to 40Gbps.

<sup>2</sup> Refer to specific product specifications.

