

# WaveLogic™ 5 Nano 400ZR Transceiver

Ciena's WaveLogic 5 Nano (WL5n) 400ZR transceiver incorporates Ciena's advanced coherent optical technology to deliver footprint-optimized 400G interconnect for extended-fabric, next-generation Data Center Interconnect (DCI) and high-capacity access applications.

## What is WaveLogic 5 Nano 400ZR?

The evolution of data center architectures toward highly interconnected, extended fabric designs has placed extreme demands on optical transport interconnects. High-capacity bandwidth in next-generation DCI, over short single-span links, needs the capacity that only coherent optical technology can deliver in the power and area envelope of small, pluggable form factors. WL5n 400ZR provides an ultracompact coherent pluggable optical transceiver enabling DCI in a metro area, offering 400 Gb/s capacity per wavelength.

As Communications Service Providers (CSPs) push high-bandwidth applications closer to end-users, they require high-capacity, highly compact solutions closer to the edge of the network. WL5n 400ZR coherent pluggables are perfectly suited for these applications, integrating into Ciena's xHaul router portfolio to provide high-capacity aggregation and switching onto 400 Gb/s wavelengths with no impact to switching density.

Compliant to the OIF Implementation Agreement, WL5n 400ZR provides 400GbE transmission at 60Gbaud, and implements transmitter pulse shaping to ensure reliable operation in 75GHz spacing, even at reaches of 120km. This product is

available in QSFP-DD and OSFP form factors, maximizing power and space efficiencies.

## Where does WL5n 400ZR fit?

The WL5n 400ZR QSFP-DD module is supported across Ciena's optical and routing and switching platforms to support high-capacity DWDM transmission in DCI applications and high-capacity aggregation and transport in converged 4G/5G xHaul, residential, and business service applications. 400ZR integration is also offered in the Waveserver® 5 compact interconnect platform for the following applications:

- To allow for 100GbE/400GbE client aggregation in a mixed-generation 100G/400G switch-router environment
- To support high-capacity, long-distance transport of 400ZR on-ramp signals

For converged 4G/5G xHaul, residential, and business service applications, the WL5n 400ZR can be used with Ciena's 5166 Router and 811X Routers to provide high-capacity aggregation and transport with no impact to switching density.

WL5n 400ZR QSFP-DD and OSFP modules are also intended to be used in conjunction with third-party host platforms to support DWDM transmission of 400GbE clients in 400G DCI fabric switches and routers. Additionally, due to the integrated 100GbE client framer capabilities, it can be used as a highly integrated muxponder for 4 x 100GbE clients for both DCI and high-capacity access applications.

## How does WL5n 400ZR deliver industry-leading performance?

Ciena's 400ZR products are a direct outcome of the company's continued investment in next-generation solutions based on innovative silicon photonics designs, ultra-dense integration and manufacturing technologies, and state-of-the-art

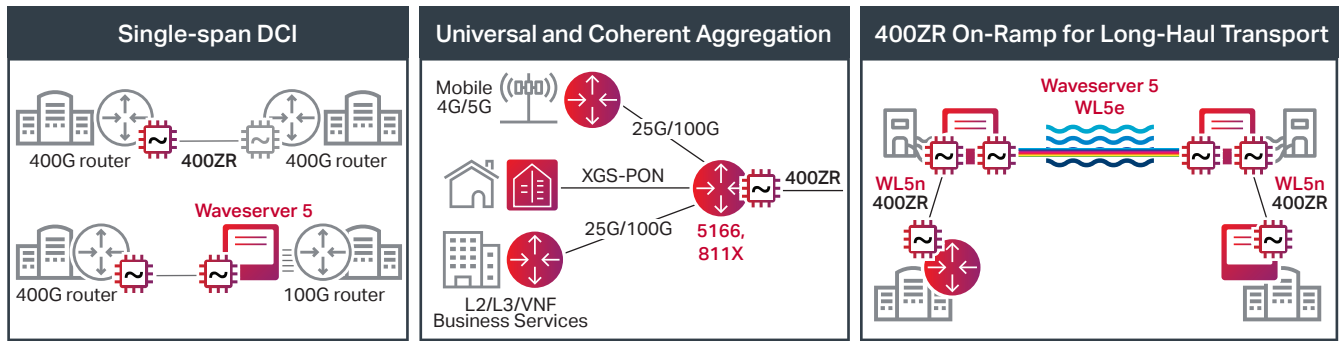
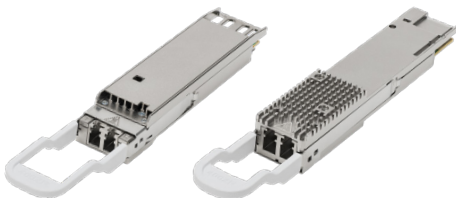


Figure 1. Examples of WaveLogic 5 Nano 400ZR transceiver applications

coherent DSP developments. The combination of coherent silicon photonics technology, highly-optimized electro-optic components, and an advanced 7nm DSP delivers the low power, performance, micro-scale, and cost-effectiveness needed to usher in a new paradigm in coherent optical networking.

Features of WL5n 400ZR include:

- Single-carrier 400 Gb/s, 75GHz grid compliant transmission
- 16QAM modulation with 60 GBaud symbol rate
- Transceiver-on-Chip compact assembly that includes 7nm low-power DSP as well as Silicon Photonics Coherent Optical Sub Assembly (COSA) comprising Modulator/Driver and Receiver/TIA
- 400GbE and 4x100GbE client support
- Form factors: QSFP-DD, OSFP



### Why Ciena WL5n 400ZR?

WL5n 400ZR delivers industry-leading performance in footprint-optimized form factors by leveraging ownership of—and investments in—critical foundational technologies. Ciena combines advanced coherent optical technology with experience in volume manufacturing, delivery of high-quality, robust products, and network operational know-how—all of which are critical to the successful deployment of new solutions. As a leading global supplier of coherent optical systems, Ciena is the ideal partner for 400ZR customers who want a trouble-free experience transitioning to this new paradigm.

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