

# WaveLogic™ 5 Nano 100G–400G Universal CFP2-DCO

Ciena’s WaveLogic 5 Nano (WL5n) 100G–400G Universal CFP2-DCO transceiver incorporates Ciena’s advanced coherent optical technology to deliver the power, space, and modularity benefits of pluggables across the widest range of applications, all with a single product. With embedded amplification and support for both interoperable and high-performance transmission modes, the WL5n Universal CFP2-DCO is optimized for ease of deployment across access and aggregation, single-span Data Center Interconnect (DCI), and metro/regional transport over all types of photonic line systems.

## What is the WL5n 100G–400G Universal CFP2-DCO?

The WL5n Universal CFP2-DCO is a coherent pluggable transceiver that supports up to +4 dBm Tx launch power, enabling efficient operation over all types of line systems—including colorless and brownfield environments—and alongside earlier generation coherent wavelengths. With support for both interoperable and performance-enhanced transmission modes, and support of adjustable capacity from 100G to 400G, WL5n Universal CFP2-DCO offers maximum flexibility for deployment options.

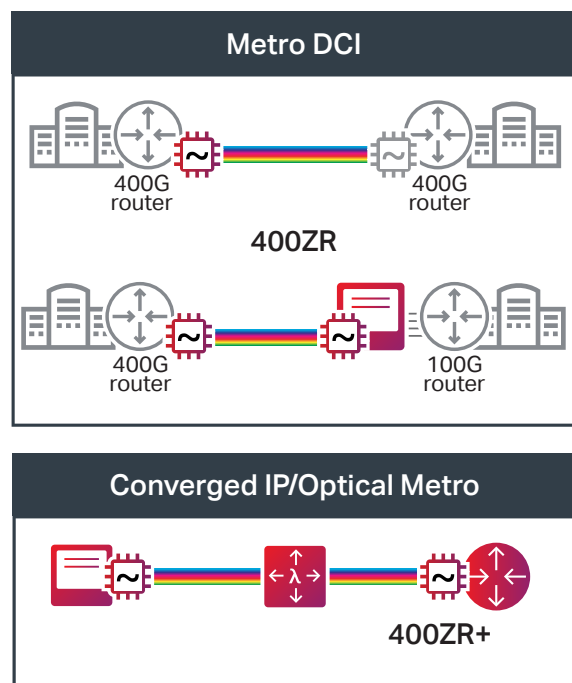
Ciena’s WL5n Universal CFP2-DCO is the result of continued investments in vertical integration and innovation in component-level design. At the heart is the WL5n Transceiver-on-Chip (ToC), a multi-chip module comprised of Ciena’s 7 nm CMOS coherent DSP and High-Bandwidth Coherent Optical Sub-Assembly (HB-COSA) mounted onto a common substrate and jointly packaged. The HB-COSA electro-optics include the Radio Frequency (RF) components—Driver and Trans-Impedance Amplifier (TIA)—as well as silicon photonics modulator/demodulator. The ToC is

a key foundational element enabling very compact, coherent pluggable form factors with the flexibility to provision for multiple different networking applications all from the same product.

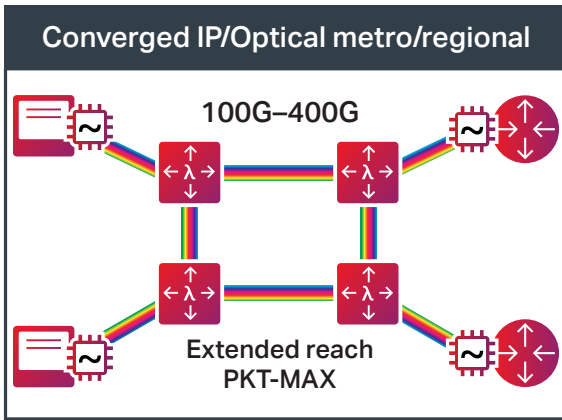
## Where does WL5n 100G–400G Universal CFP2-DCO fit?

Including the broadest range of transmission modes in the WL5n family, the WL5n Universal CFP2-DCO enables reliable, practical deployment across a wide range of applications: converged IP/optical metro and metro-regional transport, single-span DCI, high-capacity edge interconnect, and access aggregation, including dark fiber extension.

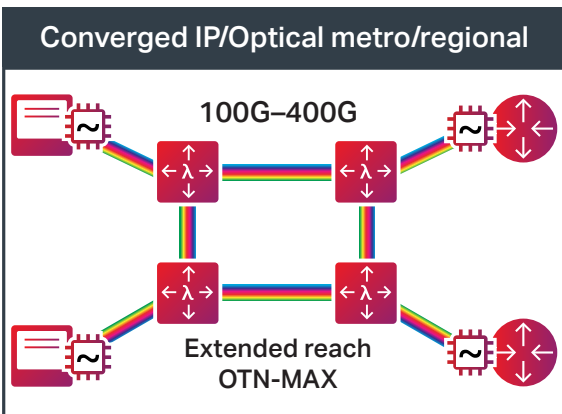
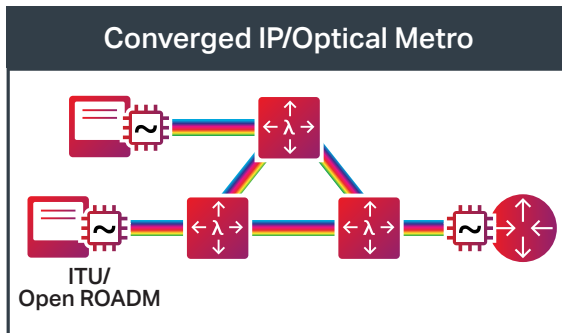
For packet-optimized interoperable transport, WL5n Universal CFP2-DCO supports both OIF-compliant 400ZR for single-span DCI and Multi-Source Agreement (MSA) 400ZR+ for extended-reach, multi-span transport.



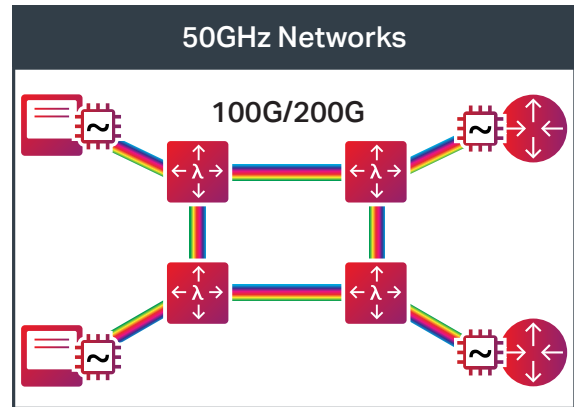
To meet needs of longer reach and challenging link environments, industry-leading high performance PKT-MAX transmission modes leverage Ciena's Probabilistic Constellation Shaping (PCS) to deliver maximum span coverage for Ethernet transport.



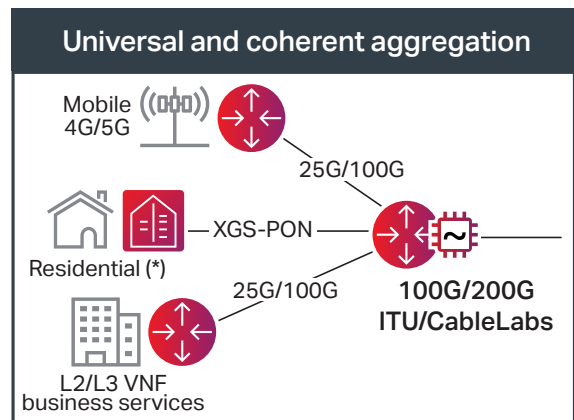
For metro Reconfigurable Optical Add/Drop Multiplexer (ROADM) networks, WL5n Universal CFP2-DCO supports Optical Transport Network (OTN) modes for both ITU-T/FlexO and Open ROADM MSA-based interoperability as well as performance-enhanced OTN-MAX modes for maximum reach from a CFP2-DCO form factor.

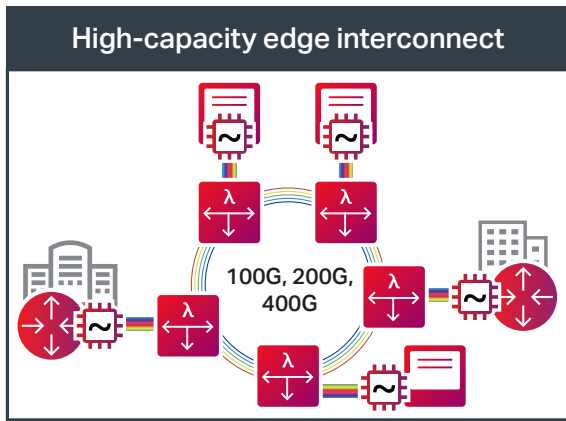


The CFP2-DCO form factor enables extended reach and simple deployment over all types of photonic line systems, including Colorless-Directionless-Contentionless (CDC) and brownfield deployments, and alongside earlier generation coherent wavelengths. In addition to using the WL5n Universal CFP2-DCO for network upgrades to 400G, network providers can also evolve and reduce energy consumption in existing 50 GHz fixed-grid networks, using the lower baud transmission options (31.5 GBaud, 35 GBaud) of the product to deploy lower power, lower cost 100G/200G wavelengths.



For access applications where platforms are optimized for faceplate density and multi-vendor interoperability delivers needed deployment flexibility, the WL5n Universal CFP2-DCO provides 100G and 200G transmission compliant to the ITU-T FlexO standards and 200G CableLabs specifications.





WL5n Universal CFP2-DCO coherent pluggables are supported across a range of Ciena's optical and routing and switching platforms as well as select third-party host platforms. With WL5n in Ciena systems, service providers benefit from the power, footprint, and granular capacity benefits associated with pluggables, as well as the photonic layer integration and link-budget guarantees needed to accelerate and optimize network deployments.

### Why WL5n 100G–400G Universal CFP2-DCO?

With this product, users can:

- Sustainably evolve more links of their network with smaller/lower-power 400 Gb/s wavelengths, achieved through through industry-leading 400G pluggable performance
- Deploy in both transport and router platforms, facilitating the evolution to converged IP/Optical architectures
- Realize operational savings related to reduced footprint and energy consumption in metro/regional applications for sustainable network upgrades
- Reduce transport costs of existing brownfield networks, with the ability to deploy coherent pluggables over any type of line system including CDC and to deploy alongside earlier generation coherent wavelengths
- Support multi-vendor environments through transmission mode support for interoperable standards and MSAs
- Reduce operational costs, including certification and sparing, with a single pluggable that is deployable in numerous applications and over any type of line system

Key features include:

- Single carrier transmission:
  - 100/200/300/400 Gb/s
  - 50/75/100 GHz grid compliant
  - Flexible grid compliant
- PCS-16QAM, 16QAM, and QPSK modulation
- 31.5, 35, 58, 60, 63, 65, 70 GBaud symbol rate
- High Tx launch power (up to +4 dBm)
- Client support:
  - 100/200/400GbE
  - OTU4, OTNcN/FlexO
- Management interface
  - MDIO
- Form factor: CFP2-DCO



### Summary

Ciena's WL5n coherent pluggables bring the strength of coherent optics into compact form-factor solutions that support a wide range of efficient transport options. With WL5n 100G–400G Universal CFP2-DCO, a large portion of your network infrastructure can be sustainably transitioned to lower power and cost per bit. WL5n 100G-400G Universal CFP2-DCO can be deployed without compromise across any type of photonic line system. With support for both interoperable modes underpinned by global standards and MSAs, as well as unmatched performance-enhanced modes for extended reach-capacity in pluggable form, WL5n 100G-400G Universal CFP2-DCO offers you maximum flexibility.

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