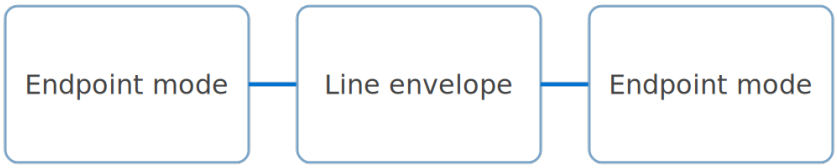
Define the coherent operating envelope.

A distance label is only the beginning of a DCI specification.

Editorial revision 2026-11-01. Planning guidance; not a released model specification, warranty, compatibility certification or installation approval.



Keep the complete connection in view

Name the mode and its reference

Keep the exact model, management revision, host electrical application, network frame, FEC and modulation together. A rate label or media code alone does not identify a compatible connection. The WBN reference includes different FEC choices under the same 100G code and different code meanings between 400G and 800G models.

OIF 400ZR distinguishes an amplified, noise-limited DWDM application from an unamplified, loss-limited application. OIF 800ZR addresses single-span amplified DWDM DCI. These application scopes do not establish a WBN model's qualified reach. OIF 400ZR §7 · OIF 800ZR §2 .

Enhanced OpenZR+ and non-MSA modes require explicit matching at the peer. Do not assume they interoperate with the base mode. See the documented WBN mode tables for the source distinctions.

Describe the line path

Specify the operating frequency and mode channel width separately. A module's 6.25 GHz provisioning grid is not a 6.25 GHz optical channel. Check the complete filter path against the selected signal, including mux/demux and any ROADM passbands.

• Unamplified path: record fiber attenuation, connector/splice losses, passive insertion loss and margin. Check receive power against the selected mode's documented conditions.

• Amplified path: retain span losses, amplifier placement, gain and noise assumptions, launch-power plan, filter penalties and received OSNR with its measurement bandwidth.

• Dispersion: check accumulated CD against the selected default or extended range; retain the corresponding module-power condition. A ps/nm compensation limit is not a guaranteed kilometer reach.

• Receive limits: keep sensitivity, operating overload, total power, monitor range and absolute maximum ratings separate.

Leave unknown conditions open

The specification reference preserves WBN document values without resolving them by inference. Missing OSNR bandwidth, unspecified per-mode FEC, conflicting temperature limits and ambiguous power additions remain open.

Host acceptance also requires the package and thermal interface, permitted module power, CMIS application support and exact firmware qualification. A supported aggregate traffic rate does not prove that a switch exposes every documented host mapping.

Keep a route conditional until both endpoint configurations and the complete line envelope have evidence. This reference site does not simulate or certify an amplified line design.

In practice / Worked example

A loss budget is only the first check.

Assume an unamplified 20 km route. These planning values are illustrative, not measurements or WBN specifications.

Contribution	Calculation
Fiber	20 km × 0.25 dB/km = 5.0 dB
Four mated connector pairs	4 × 0.35 dB = 1.4 dB
Splices	0.6 dB
Estimated physical loss	7.0 dB
Engineering allowance	2.0 dB
Planned loss requirement	9.0 dB

OIF 400ZR application 0x02 specifies an unamplified budget of 11 dB minus link impairments. A 9 dB planning result alone therefore does not prove operation. Check transmit and receive limits, dispersion, reflections and other impairments for the selected application. Amplified paths additionally require noise and OSNR assessment; amplifier gain cannot simply be subtracted to prove feasibility.

Source: OIF · 400ZR Implementation Agreement ↗ OIF-400ZR-03.0 · 8 October 2024 · §7.2, Table 19 (page 63)

Before you specify

• Exact host and line mode at both endpoints

• Frequency, signal width and complete filter path

• Launch / receive power, OSNR and dispersion conditions

• Host power, thermal and firmware support

• Unresolved source conflicts and release evidence

Sources & scope

General engineering guidance. External examples describe their own products and do not establish WBN availability or qualification.

• 400ZR implementation agreement ↗ OIF · OIF-400ZR-03.0 · 8 Oct 2024 — https://www.oiforum.com/wp-content/uploads/OIF-400ZR-03.0.1.pdf

• 800ZR implementation agreement ↗ OIF · OIF-800ZR-01.0 · 8 Oct 2024 — https://www.oiforum.com/wp-content/uploads/OIF-800ZR-01.0.pdf

• WBN coherent document reference Six mapped WBN Rev 1.0 documents; unreleased values and gaps retained per model