

One connectivity plan for the whole campus

Building entrance, MDF and IDF enclosures, preterminated OSP between buildings and Category 6 copper to the edge, for universities, hospitals and corporate campuses. Configured to order in Henderson, NV.

CAMPUS IT

NETWORK ENGINEERS

CABLING CONTRACTORS

HEALTHCARE FACILITIES

HIGHER EDUCATION



HD3U rack enclosure, WMHD2X wall mount and Cat 6 jumpers.

OVERVIEW

Entrance, backbone and edge from one supplier

A campus network is a hierarchical star: OSP cable between buildings, an entrance facility and MDF where the core sits, fiber backbone to an IDF on each floor or wing, and Category 6 horizontal cable to outlets, access points and PoE devices. One Optics supplies the passive pieces at every tier, with the same HD adaptor plates in rack and wall enclosures so a 1U panel in a closet and a 3U panel in the MDF patch the same way.

WHAT WE SUPPLY

- **Enclosures:** FEC-6912, HD3U, HD3US, HD1U, HD Slim 1U, WMHD2X, WMHD6X
- **Fiber assemblies:** PTO- preterm OSP, PTP- plenum preterms, MPO trunks, jumpers, pigtails
- **Copper:** Cat 6 jumpers, 1,000 ft pull boxes, RJ45 plates

SUPPLIED BY OTHERS

- Core, distribution and access switches; optics; APs and devices
- Outlets, jacks and faceplates; racks, ladder rack and pathway
- Bulk backbone fiber, OSP placement, closures and conduit

288 LC
RIBBON IN 3U
(HD3U)

12-144F
PRETERM OSP (PTO-)

48 LC
WALL MOUNT
(WMHD2X)

1,000 ft
CAT 6 PULL BOXES

THE CHALLENGE

Campuses grow one building at a time

A new hospital wing, residence hall or lab building needs fiber from the core, a telecom room on every floor and copper to every access point, camera and desk. The plant follows the TIA-568 series: a hierarchical star from the main cross-connect in the MDF, through intermediate cross-connects, to horizontal cross-connects in each IDF, with Category 6 channels of up to 100 m (90 m permanent link plus cords) to the edge.

IDFs are often small, shared closets with more wall than rack space. Links between buildings run aerial or in duct, where field termination takes the longest. PoE access points and cameras keep adding copper drops, and every new building has to patch the same way as the last so campus IT can maintain it.

DESIGN NOTES

Rate the cable for the space. Plenum (CMP) in air-handling spaces, riser (CMR) in vertical shafts.

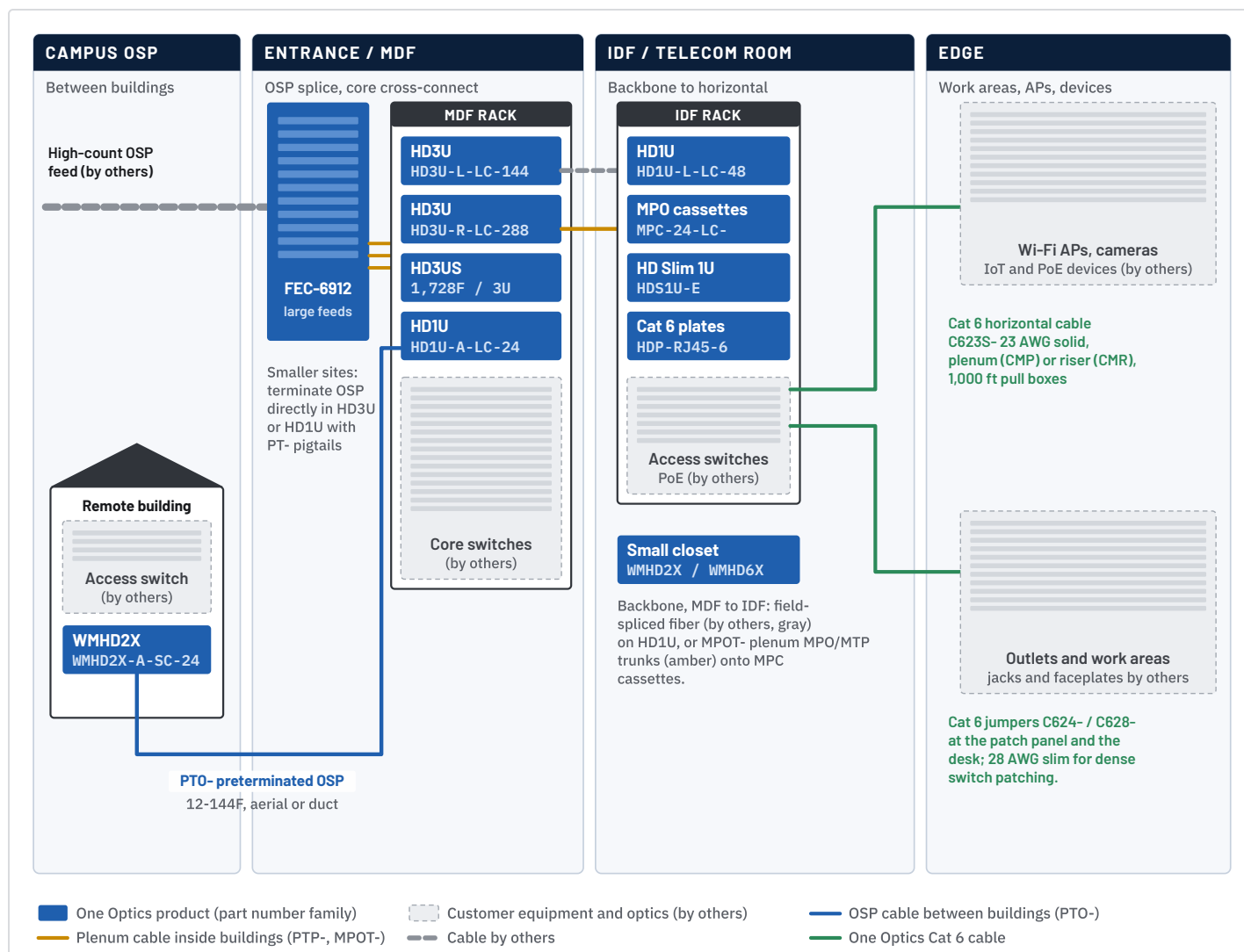
Keep copper within the channel. 90 m permanent link, 100 m channel including cords.

Standardize the patch face. The same HD plates fit HD1U, HD3U, HD Slim 1U and the WMHD wall mounts.

Preterminate between buildings.

PTO- OSP cables arrive connectorized and cut to length; runs inside a building use PTP- plenum preterms.

WHERE ONE OPTICS FITS · ENTRANCE TO EDGE



Simplified, not to scale. Switches, outlets, devices and bulk backbone fiber are supplied by others; One Optics supplies the connectivity shown in blue, amber and green.

PRODUCT FIT

Entrance, MDF, IDF and edge

	PRODUCT	PART NUMBERS	TIER	ROLE ON THE CAMPUS
	Fiber Entrance Cabinet 44.5 x 21.5 x 13.25 in, aluminum	FEC-6912	Building entrance	For the largest campuses: the customer's 6,912F armored or dielectric ribbon OSP cable, spliced to 24 x 288F or 48 x 144F plenum cables (PTP- plenum preterms).
	HD3U enclosure 3U rack mount	HD3U-L-LC-144 HD3U-R-LC-288	MDF	Main cross-connect: 144F loose tube or 288 LC ribbon in 3U; up to 432 LC with cassettes.
	HD3US splice panel 3U, splice only	HD3US	MDF	6 trays x 288F = 1,728F; keeps OSP splicing apart from the patch field.
	HD1U enclosure 1U, 4 HD positions	HD1U-L-LC-48 HD1U-A-LC-24	MDF · IDF	48F loose tube spliced, or 96 LC adaptors-only for preterminated cable.
	HD Slim 1U Open 1U, 8.66 in deep	HDS1U-E	IDF	Patch-only panel for shallow racks; mix LC, SC, MTP and Cat 6 RJ45 plates or cassettes.
	WMHD2X wall mount Lockable doors	WMHD2X-[L/R/A]-	IDF · small building	Up to 24 SC or 48 LC on the wall where there is no rack.
	WMHD6X wall mount Lockable doors	WMHD6X-[L/R/A]-	IDF · building entrance	72 SC or LC loose tube, 144 LC ribbon, with room for splice trays and slack.
	HD adaptor plates LC, SC, MTP, Cat 6 RJ45	HDP-LC- · HDP-SC- HDP-RJ45-6	All tiers	One plate footprint across rack and wall enclosures; 6-port Cat 6 RJ45 coupler plates for copper.
	MPO cassettes + trunks US Conec MTP, plenum trunks	MPC-24-LC-A / -U MPOT-	MDF → IDF	Preterminated in-building backbone: trunks up to 288F, broken out to LC at each end.
	Preterminated OSP Corning ALTOS, SMF-28 Ultra	PTO-	Between buildings	12 to 144F, factory terminated and built to length for aerial and duct runs.
	Jumpers and pigtails Corning SMF-28 Ultra	SX- / DX- · PT-	All tiers	LC and SC, UPC and APC jumpers; loose tube or ribbon pigtails for spliced builds.
	Cat 6 bulk cable 1,000 ft pull boxes	C623S-U-P-CC-PB C623S-U-R-CC-PB	IDF → edge	23 AWG solid, plenum (CMP) or riser (CMR) horizontal cable; 24 and 28 AWG stranded boxes also available.
	Cat 6 jumpers TIA-568.2-D Category 6	C624- · C628-	IDF · edge	24 AWG, or 28 AWG slim for dense switch patching, in multiple colors.

TYPICAL BUILDS

Three building blocks, MDF to edge



BUILD 01 · MDF MAIN CROSS-CONNECT

288 LC in 3U for the campus backbone

Ribbon backbone cables from each building land in one 3U enclosure with mass-fusion ribbon pigtails and splice trays. A loose tube backbone takes the same chassis at 144F. LC duplex jumpers patch to the core switches.

HD3U-R-LC-288	3U, 288 LC/UPC, ribbon pigtails, 4 splice trays included	1
HD3U-L-LC-144	3U, 144 LC/UPC loose tube, 3 m 900 µm pigtails, splice trays	alt
DX-LCLC-03M	Duplex jumper, LC/UPC to LC/UPC, SMF-28 Ultra, 3 m	as req.

Result: **288 LC ports in 3 RU**; add an HD3US to splice six HD3U remotely as the campus grows.



BUILD 02 · IDF / TELECOM ROOM

Fiber on the wall, Cat 6 to the edge

In a closet without rack space, a lockable wall mount terminates the riser backbone on six 12-port LC plates. Horizontal Cat 6 runs from the access switches to outlets and PoE devices in plenum or riser cable, with slim jumpers at the switch.

WMHD6X-L-LC-72	Wall mount, 72 LC/UPC loose tube, 3 m 900 µm pigtails, splice trays	1
C623S-U-P-CC-PB	Cat 6, 23 AWG solid, plenum (CMP), 1,000 ft pull box	as req.
C628-SB-[color]-[length]	Cat 6 jumper, 28 AWG slim, snagless (e.g. C628-SB-WH-007)	as req.

Result: **72 LC** backbone ports on the wall; switches patched with slim Cat 6 cords.



BUILD 03 · BETWEEN BUILDINGS

A 24F link with no splicing at either end

A preterminated OSP cable is built to the measured route length with connectors on both ends. It plugs into an adaptors-only panel in the MDF and an adaptors-only wall mount in the remote building, so the crew pulls, lashes or ducts the cable and patches.

PT0-024-[cable]-[A]-[B]-[L]F	Preterminated OSP, 24F, Corning ALTOS, LC/UPC to SC/UPC	1
HD1U-A-LC-24	1U, 24 LC/UPC adaptors only on two 12-port LC plates (MDF end)	1
WMHD2X-A-SC-24	Wall mount, 24 SC/UPC adaptors only (remote end)	1

Result: **24 fibers** between buildings, factory terminated and tested at both ends.

WHY ONE OPTICS

Built to your drawing, tested before it ships

01 Built to order in Henderson, NV

Enclosures and cable assemblies are configured and built per order at our Henderson, Nevada facility, sized to your fiber counts and lengths rather than the nearest stock item, by a team with more than 30 years of experience in cable TV and data center fiber.

03 Configure-to-order part numbers

Part numbers encode fiber style, connector, polish, count, polarity and length, so the build on the drawing is the build on the purchase order.

Made in USA enclosures

HD1U, HD3U (including HD6U and HD9U stacks), HD3US, WMHD2X, WMHD6X and the Fiber Entrance Cabinet (FEC-6912).

02 Every assembly tested

Every assembly is tested before it ships; jumpers, pigtails and preterminated assemblies are tested for end-face cleanliness and end-face geometry. Test data and certificate of conformance available on request.

04 Components you can specify

Corning SMF-28 Ultra (G.657.A1) fiber in our jumpers, MPO jumpers and pigtails; Corning ALTOS cable on preterminated OSP and Corning plenum ribbon or loose tube cable on plenum preterms; US Conec MTP connectors on MPO jumpers, trunks and cassette adaptors.

Build America, Buy America (BABA)

BABA compliant, self-certified; compliance letter available on request. Applies to every product except fiber jumpers (simplex/duplex), MPO jumpers, pigtails and Cat 6 copper.

PLANNING CHECKLIST BY TIER

TIER	DECIDE EARLY	ONE OPTICS PARTS
Building entrance	OSP cable counts per building, loose tube or ribbon, spliced or preterminated links, wall or rack termination	FEC-6912 · HD3US · WMHD6X · PTO- · PTP-
MDF	Backbone ports per building, growth per phase, splice in the chassis or remotely	HD3U-R-LC-288 · HD3U-L-LC-144 · HD3US · HD1U
IDF	Rack or wall, rack depth, backbone fiber count, fiber and copper in the same panel	HD1U · HDS1U-E · WMHD2X · WMHD6X · HDP-RJ45-6
Edge	Plenum or riser, cable gauge, jumper colors per service (data, Wi-Fi, security)	C623S- · C624- · C628-

WHAT TO SEND FOR A QUOTE

- **Building list** with backbone fiber counts and route lengths
- **Termination style:** spliced (loose tube or ribbon) or preterminated
- **Connector and polish** at each end (LC or SC, UPC or APC)
- **IDF layout:** rack units or wall space per room
- **Copper quantities:** pull boxes by rating, jumpers by length and color

RELATED DATASHEETS

- [HD3U](#) · [HD3US](#) · [HD1U](#) · [HD Slim 1U](#) · [HD adaptor plates](#)
- [WMHD2X](#) · [WMHD6X](#) · [Fiber Entrance Cabinet \(FEC-6912\)](#)
- [Preterminated cables \(OSP and plenum\)](#) · [MPO trunks](#)
- [MPO pass-through cassette](#)
- [Fiber jumpers](#) · [fiber pigtails](#) · [Cat 6 jumpers and pull boxes](#)

Specifications are subject to change.