

FODL-MDX

Modular rack system for fiber optic delay lines



Product overview

FODL-MDX is a plug-and-play solution for applications where multiple optical delay lines are required in a single setup - e.g. coherent beam combining. The default configuration comes with 8 delay line units + 1 controller all supplied as insert modules in a 19" subrack with 2 × 3U height. Thanks to the modularity of MDX, basically any number of delay line units can be configured.

Variants

(any combination of the parameters can be chosen)

Number of delay line units (subrack height):	1-3 (1×3U) / 4-8 (2×3U)
Operating wavelength:	1550 nm / 2000 nm
Optical delay range:	330 ps / 660 ps
Fiber type:	polarization maintaining (PM) / single mode (SM)
Fiber connectors:	FC/APC / FC/PC

Full specifications

Specification		Delay lines		
Operating wavelength [nm]	1550		2000	
Optical delay range [ps]	330	660	330	660
Typical insertion loss [dB]	1.4	1.7	2.2	2.3
Insertion loss uniformity [dB]	0.25	0.35	0.25	0.35
Return loss ¹ [dB]	> 50			
Optical delay resolution [fs]	< 0.33			
Polarization extinction ratio ² [dB]	> 20			
Max power [mW]	1000		2000	
Position accuracy [μm]	± 10			
Position repeatability [μm]	± 1			
Fiber type	PM-1550 / SM-1550		PM-1950 / SM-1950	
Fiber connectors	FC/APC, FC/PC			
Dimensions ³ [mm]	76.4 × 106 × 286.5			
Weight ⁴ [kg]	2.2 / 2.5			
Operating temperature ⁵ [°C]	10 - 40			
Storage temperature [°C]	-30 - 70			
Controller				
Power requirements	12/24V, 5A			
Control	web GUI / ethernet / USB			
Dimensions ⁶ [mm]	177.9 × 106 × 286.5			
Weight [kg]	2.2			
Operating temperature [°C]	10 - 40			
Storage temperature [°C]	-30 - 70			
Subrack (MDX)				
Number of delay lines	1-3		4-8	
Dimensions [mm]	482.6 × 265.9 × 298.5		482.6 × 132.5 × 298.5	
Weight [kg]	2.5		4.3	
Weight of fully loaded MDX [kg]	11.3 / 12.2		24.1 / 26.5	

¹ For version with FC/APC connectors

² For version with PM fibers

³ Front plate dimensions 81 × 128.4 mm

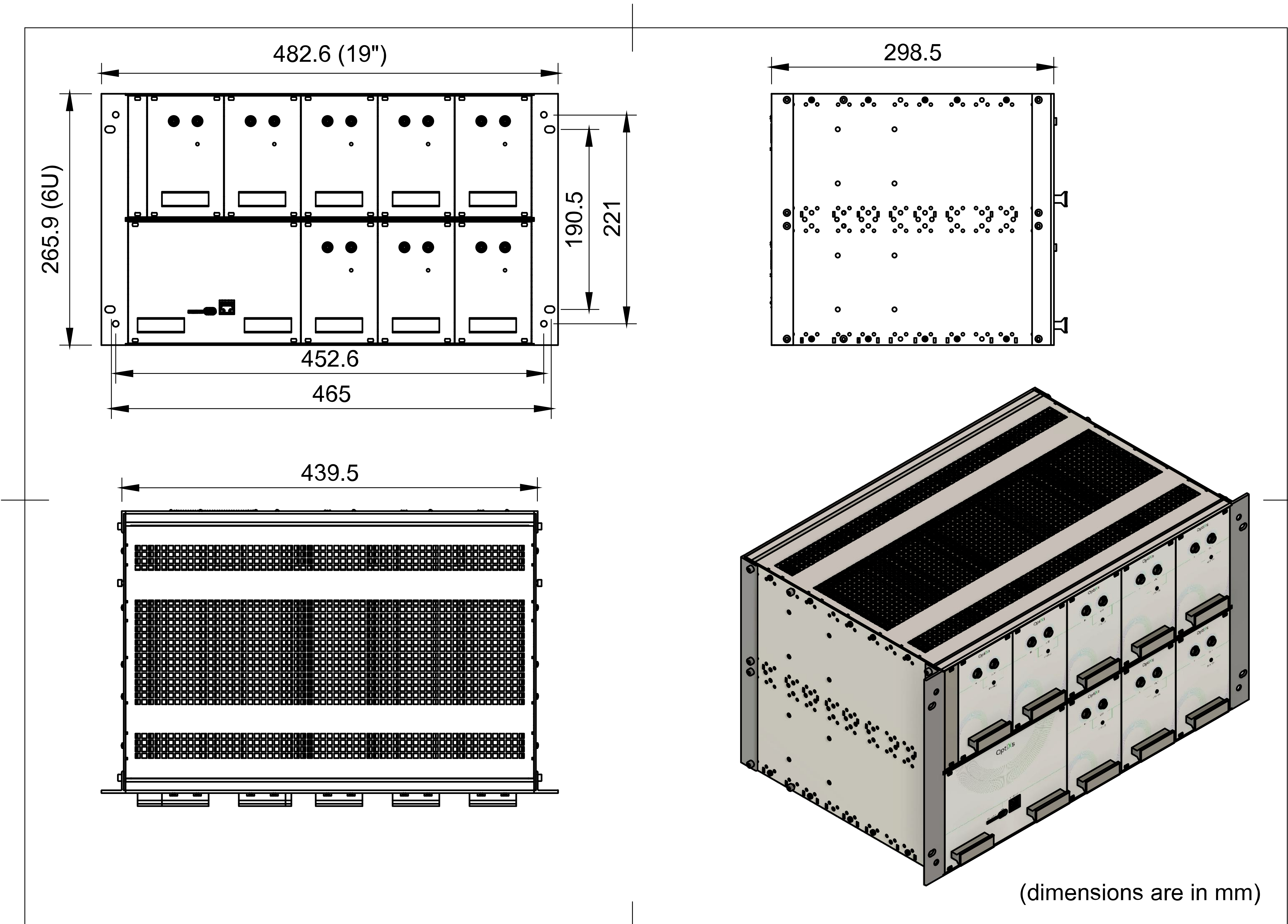
⁴ Values for 330 ps and 660 ps versions, respectively

⁵ Range of temperatures where temperature-driven additional insertion loss < 1 dB is maintained

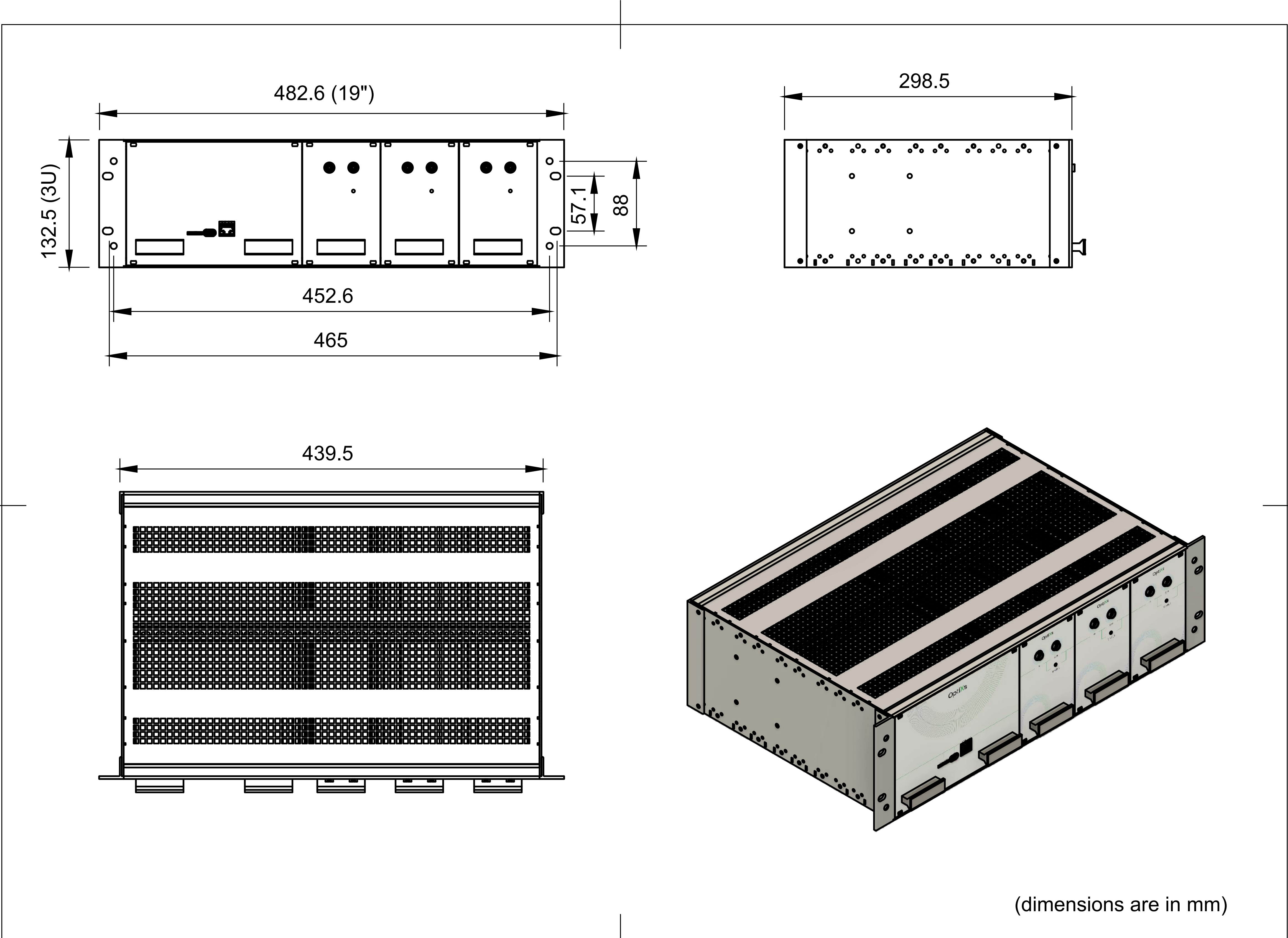
⁶ Front plate dimensions 182.5 × 128.4 mm

Mechanical drawing

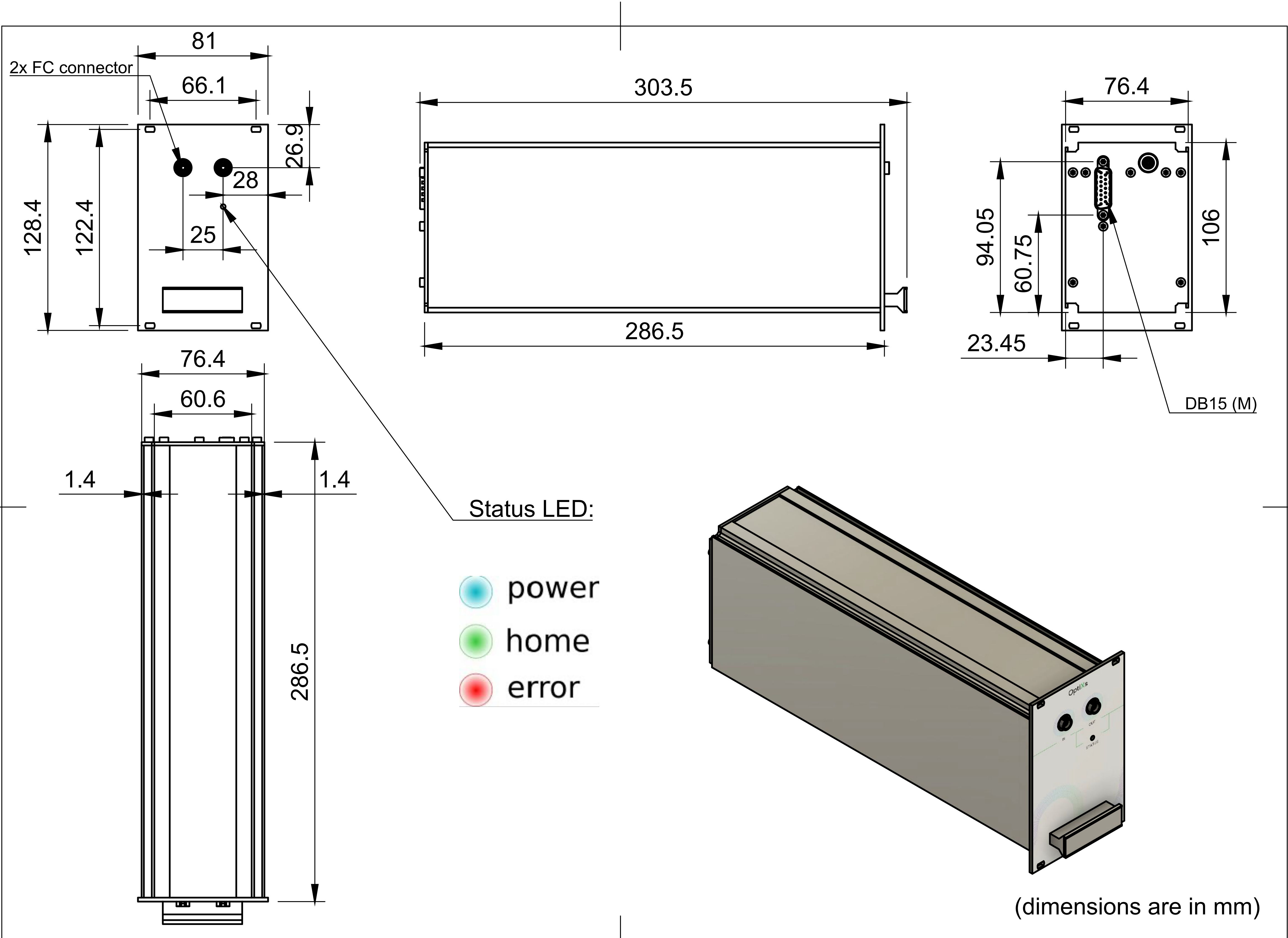
Rack (4-8 units + controller):



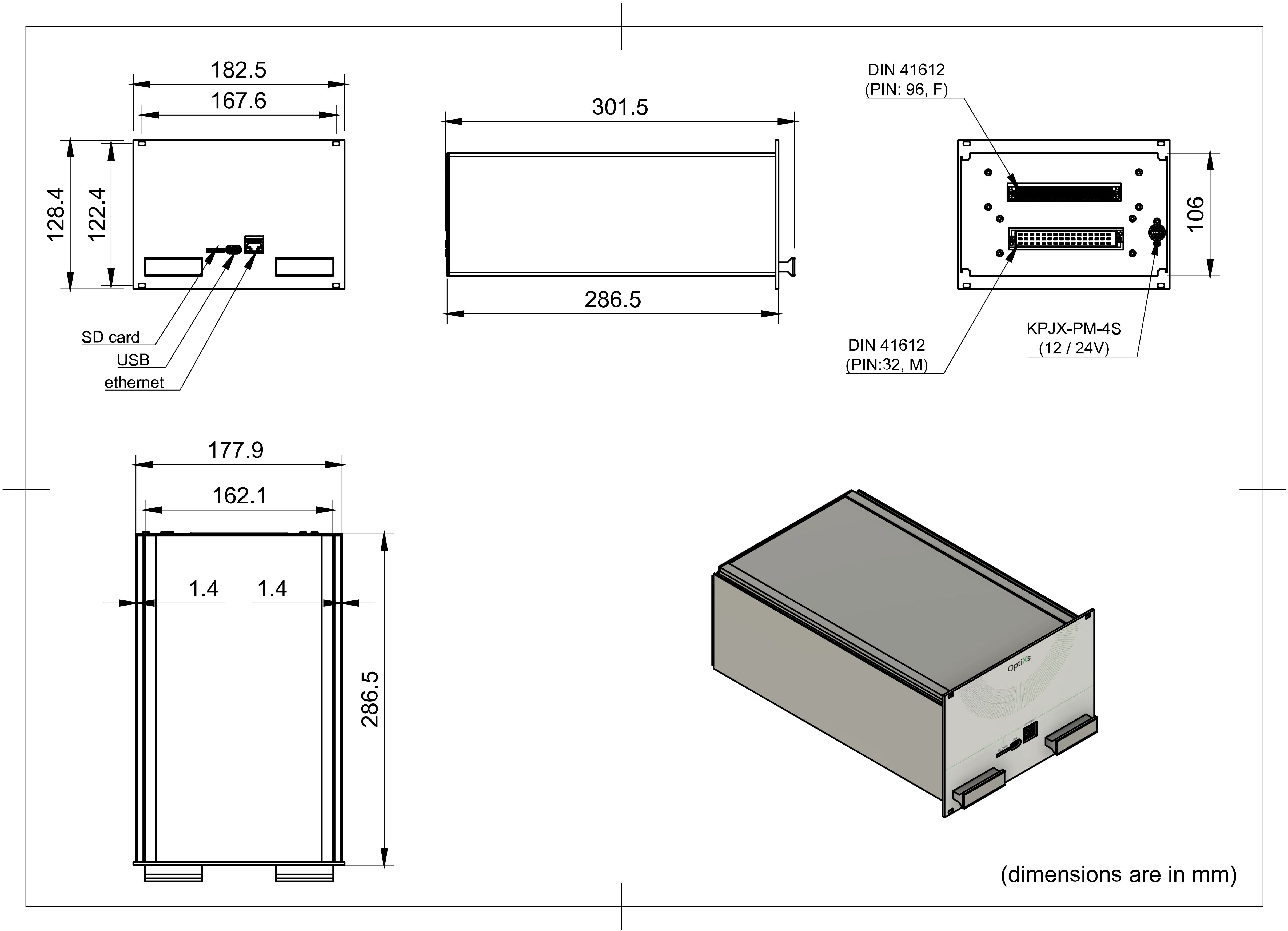
Rack (1-3 units + controller):



Delay line unit:

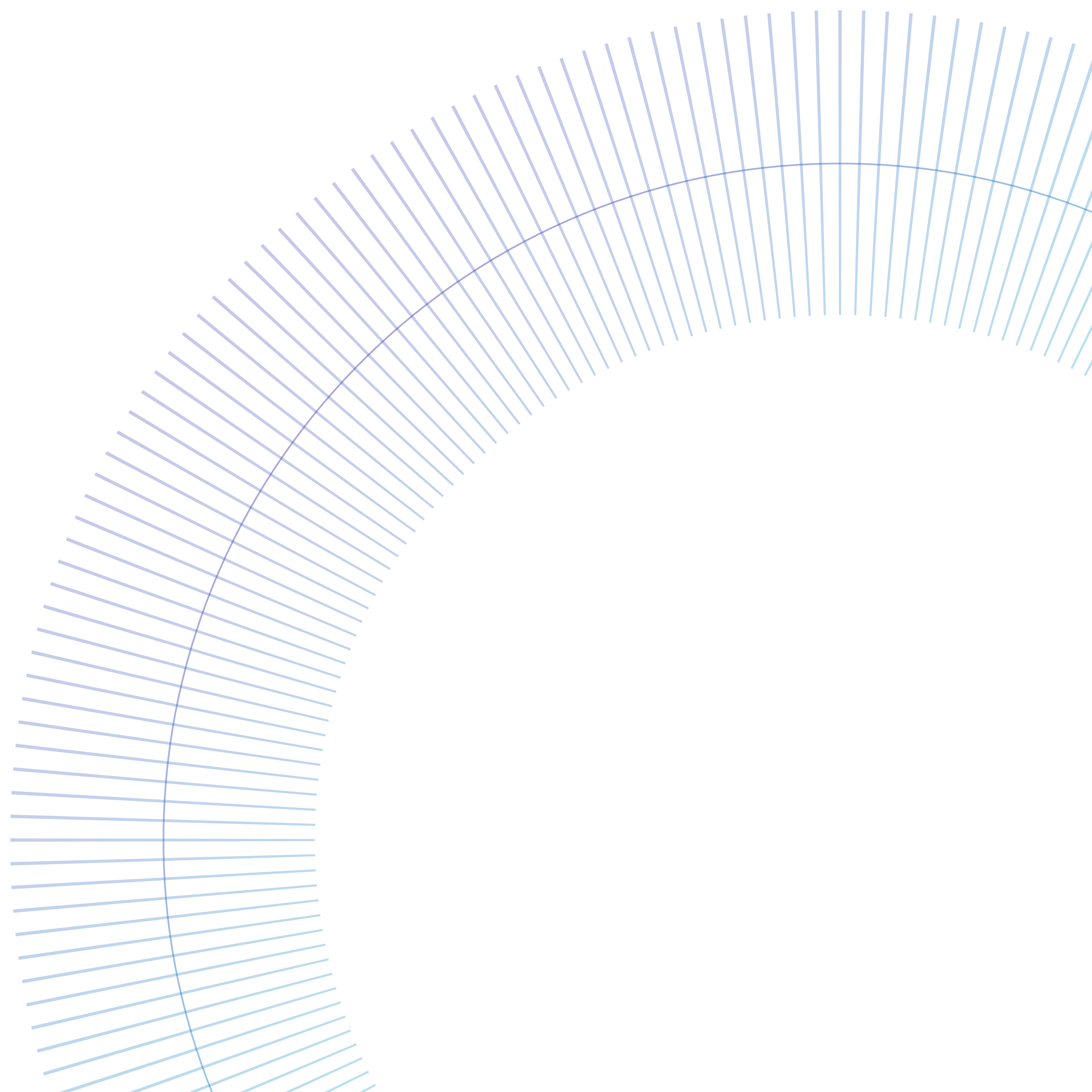


Controller:



Features

- ✓ High resolution (< 0.33 fs)
- ✓ Low insertion loss even at 2000 nm
- ✓ Controller ethernet and USB connections
- ✓ Web interface for basic use available
- ✓ Up to 8 delay line units can be driven by the same controller
- ✓ Compatible with 19" rack system
- ✓ Signal LED showing the delay line status
- ✓ Plug-and-play set of delay lines + controller + rack



Order information

FODL-MDX

A complete set of delay lines + controller + subrack with PCB connectors - ensures correct configuration of the system. The product number for ordering the FODL-MDX is as follows:

FODL-MDX-**N**-**WWW**-**DDD**-**TT**-**CCC**

- N = number of delay lines:

1-8
- WWW = operation wavelength:

1550 / 2000
- DDD = optical delay range:

330 / 660
- TT = fiber type:

PM / SM
- CCC = fiber connector:

PC / APC



Example:

FODL-MDX with 6 delay lines operating at 2000 nm, with optical delay range 660 ps, PM fibers, and APC connectors:

FODL-MDX-6-2000-660-PM-APC

Delay lines (if purchased separately)

If needed the modular inserts with delay lines can be purchased separately (outside of FODL-MDX). Note that a stand-alone version of the delay line exists for tabletop applications using individual delay lines. The product number for ordering the 19" subrack-compatible delay lines is as follows:

FODL-**WWW**-**DDD**-**TT**-**CCC**-R

WWW = operation wavelength: 1550 / 2000

DDD = optical delay range: 330 / 660

TT = fiber type: PM / SM

CCC = fiber connector: PC / APC



Example:

Delay line operating at 1550 nm, with optical delay range 330 ps, SM fibers, and PC connectors:

FODL-1550-330-SM-PC-R

Controller (if purchased separately)

If needed the controller can be purchased separately (outside of FODL-MDX). Note that a stand-alone version of the delay line with a stand-alone controller exists for tabletop applications using individual delay lines.

The product number for ordering the 19" subrack-compatible controller is as follows:

FODL-CRTL-**N**-R

N = number of delay lines: 3 (for 1-3 units) / 8 (for 4-8 units)



Example:

Controller for 5 delay lines (capable of driving up to 8 delay lines):

FODL-CRTL-8-R

19" subrack (if purchased separately)

If needed the 19" subrack compatible with our delay lines and controllers can be purchased separately (outside of FODL-MDX).

The product number for ordering the 19" subrack is as follows:

FODL-RACK-**N**

N = number of delay lines: 3 (for 1-3 units) / 8 (for 4-8 units)



Example:

Subrack for 3 delay lines:

FODL-RACK-3



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