

Installation Instructions

Fibre distribution cabinet 3.0

FDC XL 3.0

prepared for the Langmatz fibre tray system



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1 General information

These installation instructions describe the use of the differently configured “Fibre distribution cabinet (FDC)” in housing 83.



Note:

Any person involved in the assembly, operation, maintenance and repair of the product must first have read and understood these instructions and follow them precisely. We accept no liability for damage and operating malfunctions caused by failure to comply with these instructions.

Langmatz GmbH warns against the misuse of the product.

The product described here corresponds to the latest state-of-the-art technology at the time of printing and is delivered in an operationally safe condition.

Unauthorised modifications, particularly to safety-related parts, are prohibited. Langmatz GmbH warns against the misuse of the product.

The operator is responsible for the following:

- Preventing danger to life and limb of users and third parties,
- Ensuring safe operation of the system,
- Preventing downtime and environmental impact due to incorrect handling.

In the interest of further development, we reserve the right to change individual assemblies and accessories as considered necessary for enhanced safety and performance improvements, while preserving the main features.

The copyright of these instructions remains with Langmatz GmbH.

2 Safety information



- Note the possibility of laser/LED radiation in the non-visible spectrum!
- Never look into open fibre ends if there is an unknown level of risk posed by laser/LED radiation.



Attention!

The level of risk should ultimately be decided by the system fitter/operator of the communication system, who is responsible for labelling the system accordingly (e.g. attaching warning signs in accordance with DIN EN/IEC 60825-1, as revised, and in compliance with the BGV (Employers' Liability Association) B2 “Laser radiation”, as revised).

If the technical data changes, and this affects the level of risk, the warnings must be adapted accordingly and occupational safety measures should be taken, see also DIN EN/IEC 60825-2, as revised.

- Use of a damaged product is prohibited. Please contact the hotline (see reverse).
- The operator is responsible for installing, operating and maintaining the fixtures.



Note:

The relevant occupational safety regulations must be adhered to during installation, operation and repair work.

3 Product description

The FDC consists of the following main product components:

- Cabinet and pedestal 83 (manufacturer's installation instructions: https://anleitungen.langmatz.de/open/791000107-000_1)



- FDC installation kit
- FTTH base plate

The correct and proper installation and configuration of the fibre distribution cabinet is described in detail in these installation instructions.

3.1 Dimensions

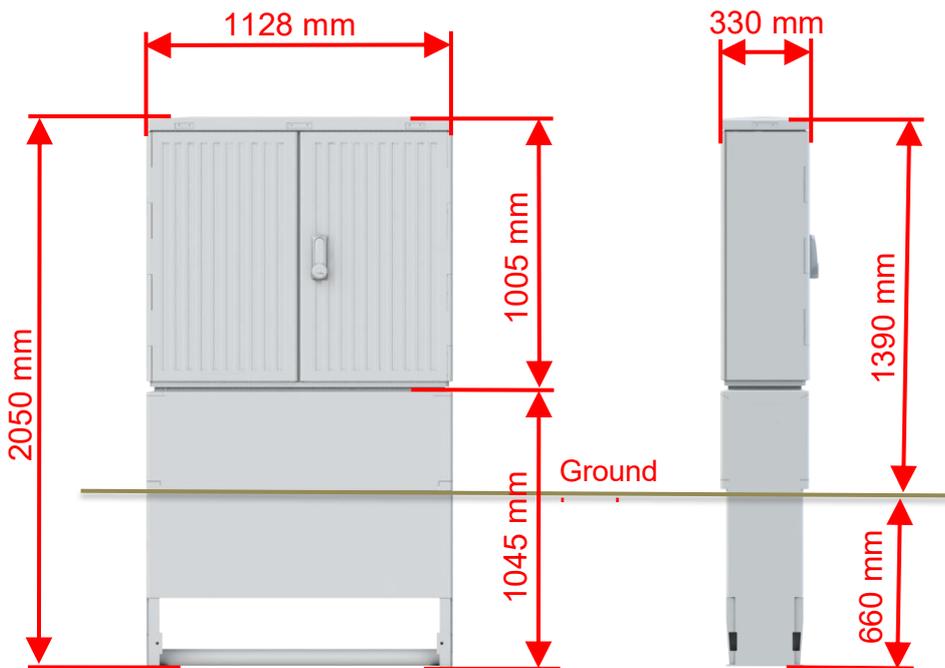


Fig. 1

Fig. 2



Fig. 3 Illustrated example

3.2 Technical data

W x H x D:	1128 x 2050 x 330 mm
Weight including packaging with pallet:	135 kg
Cabinet material:	polycarbonate
Degree of protection:	IP54
Resistance:	<ul style="list-style-type: none">• UV-resistant, weather-resistant and self-extinguishing• environmentally-friendly plastic and recyclable
Colour:	cabinet body coated in RAL 7038 with environmentally-friendly paint
Version:	<ul style="list-style-type: none">• ribbed surface (difficult to adhere posters to the surface)• 3-lever lock door with swivel lever, prepared for one or two profile half-cylinders

4 Scope of delivery

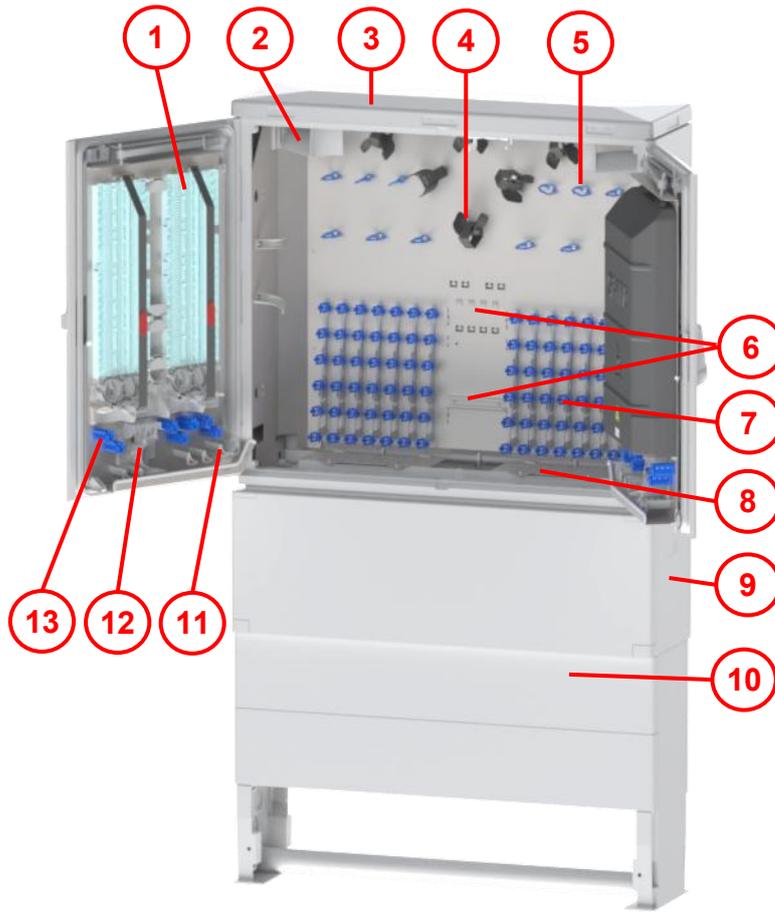
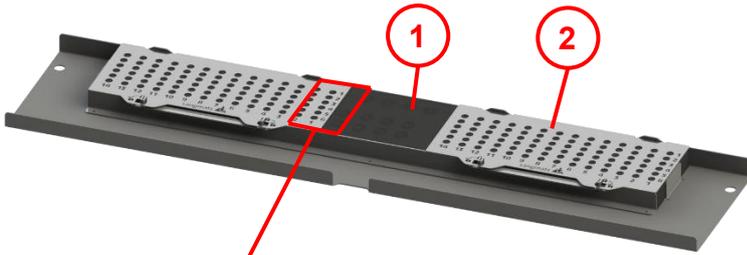


Fig. 4

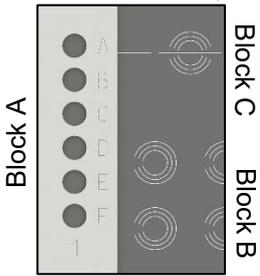
Item 1	Fibre tray system level	Item 7	Mount for micro-duct pipes
Item 2	Cable diverter	Item 8	Base plate with sealing plate and strain relief (strain relief only for outlet area)
Item 3	Cabinet KVz22		Pedestal
Item 4	Excess cable tray	Item 9	Strain relief rail (in the pedestal)
Item 5	Guide rings	Item 10	Bending radius limiter
Item 6	Optical fibre main cable strain relief, micro-duct pipes and core of fibre cable Not shown: Optional mounting and strain relief in the inlet area for second and third row	Item 11	Cable organiser access
		Item 12	Micro-duct cable organiser
		Item 13	

5 Layout of the base plate



Sealing plate (1)
Strain relief plate (2)

Fig. 5



Block A: e.g. 168x 7/10 (Micro-duct pipe $\varnothing 7/\varnothing 10\text{mm}$)
 Block B: 8x 12-22 mm (Micro-duct pipe optical fibre main cable)
 Block C: 4x 12-22 mm (Micro-duct pipe/splittable optical fibre main cable router for loop)

Feeder | Drop

Fig. 6

Installation matrix



Splittable sealing plate for cable entry in Block C:

- Entry point of the optical fibre main cable or micro-duct pipe
- Provides for a loop (uncut cable)

Fig. 7

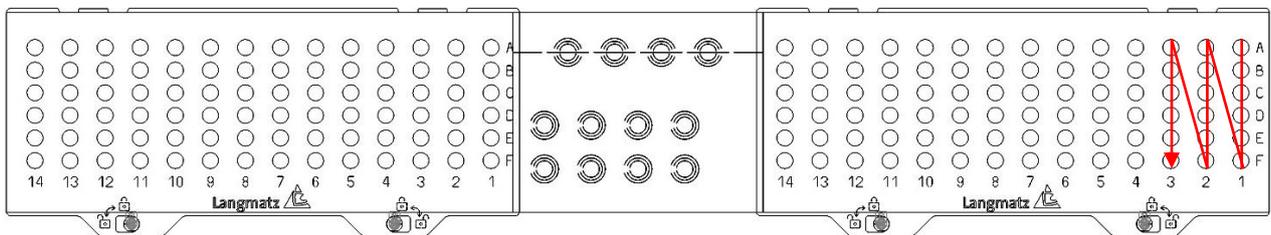


Fig. 8 Illustrated example

6 Installing the cabinet on the pedestal

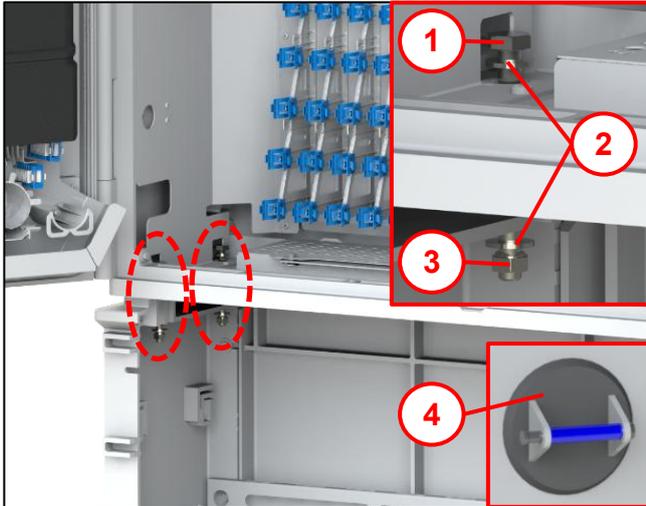


Fig. 9

Two people are needed to install the cabinet.

- Position the cabinet on the pedestal and screw together with 4x hex bolts M10x100 **(1)**, 8x washers 10 **(2)** and 4x washers M10 **(3)**.

Note: An appropriate suction lifter **(4)** can be used to lift the cabinet.

7 Installing the pipe bundles/micro cables

7.1 Preparing the pipe bundles/micro cables

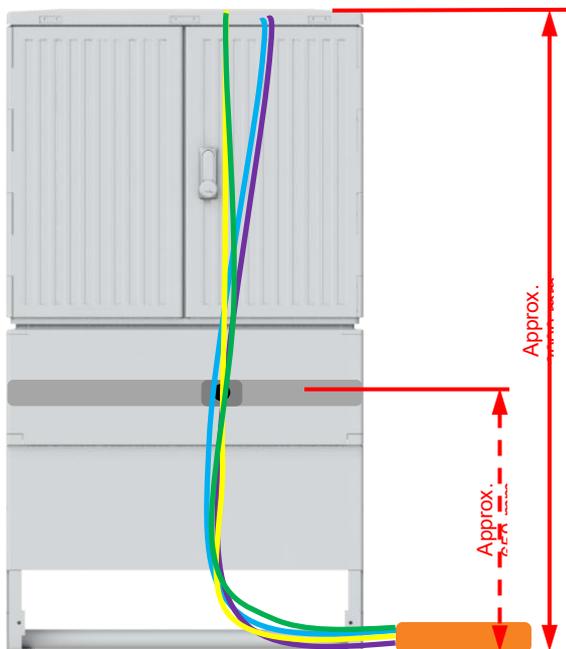


Note: Use the specified tools to handle pipe bundles/micro cables.

For pipe bundles (1)

For micro cables (2)

Fig. 10



The length of the micro-duct pipes is approx. 2 m from the pedestal inlet

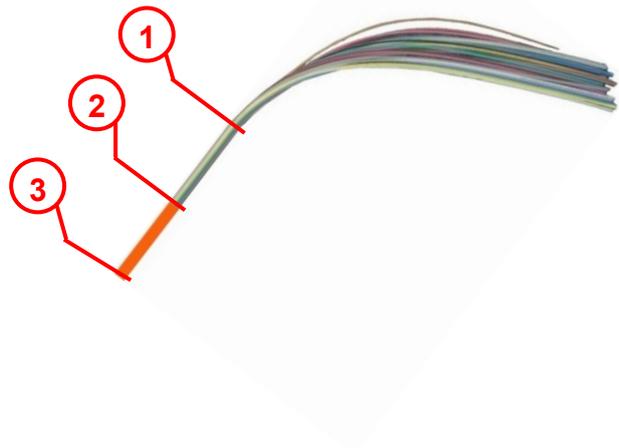


Fig. 11

- Item 1 Upper edge of U-clamp – pedestal
- Item 2 Remove the sheath
- Item 3 Pedestal inlet

Note: The design, colour coding and the number of micro-duct pipes can deviate from the illustration shown depending on the manufacturing version of the pipe bundle.

7.2 Attaching the micro-duct pipes in the pedestal

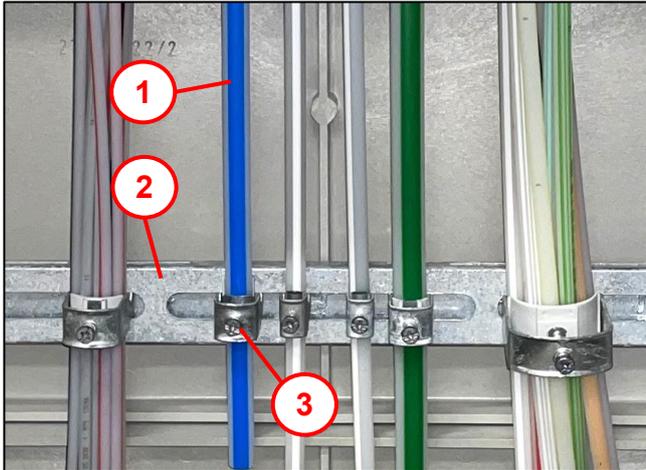


Fig. 12

- Attach micro-duct pipes (1) to the C-DIN rail (2) with U-clamps (3) .

7.3 Micro-duct pipe set-up/function in the cabinet

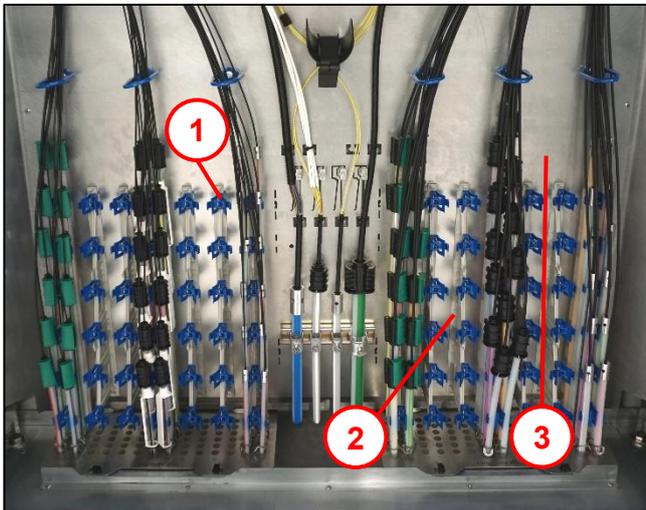


Fig. 13

The micro-duct pipes are installed according to the installation matrix from rear right to front left.

They are organised by clamp mounts (2) with Duo clamps (1) attached to the rear panel (3).



Fig. 14

The micro-duct pipes are organised and held in place by $\varnothing 7/\varnothing 10$ Duo clamps. They are installed by simply clipping the micro-duct pipes into the clamps.

7.4 Inserting the micro-duct pipes in the cabinet

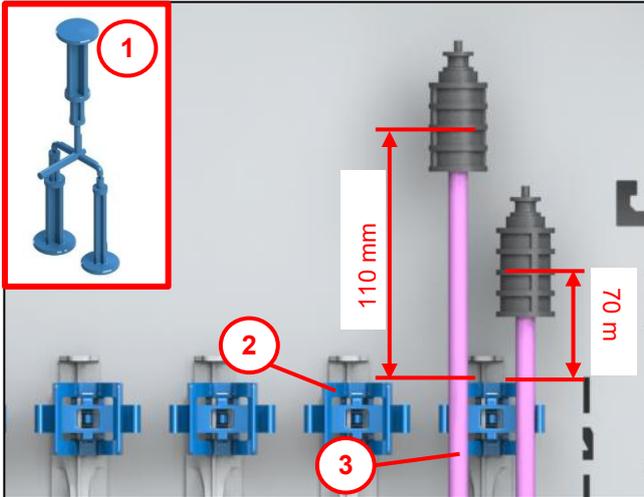


Fig. 15

- Insert the micro-duct pipes (3) into the cabinet.

Note:

- Insert the micro-duct pipes through the base plate using the mandrel (1) (pay attention to the installation note “Mandrel and insertion aid for micro-duct pipes”).
- There needs to be an alternate additional length of 70 mm or 110 mm above the Duo clamp (2) for the attachment of sealing and labelling elements and labels.

7.5 Attaching the micro-duct pipes with strain-relief lugs

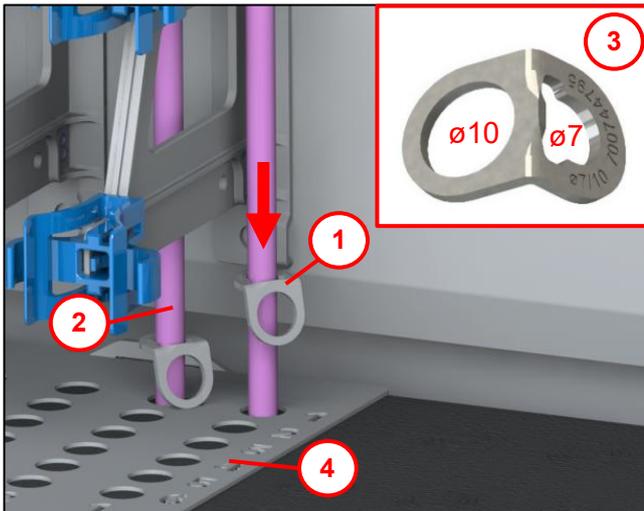


Fig. 16

- Place the strain-relief lug (1) on the micro-duct pipe (2) with the lug pointing down.

Note: Use the designated side of the strain-relief lug depending on the diameter of the micro-duct pipe and the design of the duo strain-relief lug (3) for 7/10 mm micro-duct pipes (one lug for two sizes).

- Push the strain-relief lug over the micro-duct pipe as far as the strain relief plate end stop (4). The strain relief plate also fixes the micro-duct pipes in place and provides strain relief.

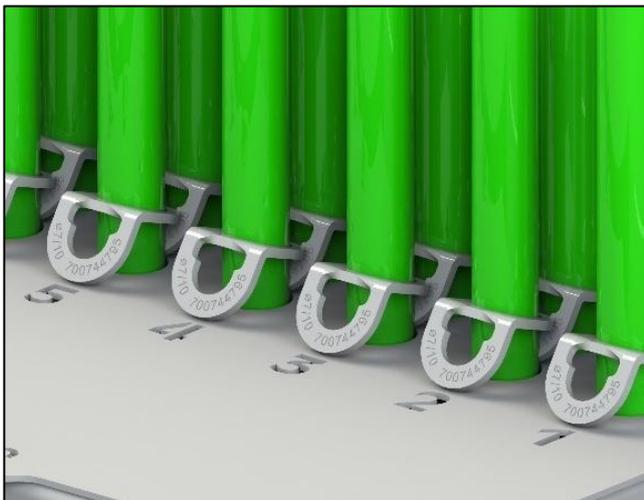


Fig. 17

Note: Arrange the strain-relief lugs to point in the same direction!

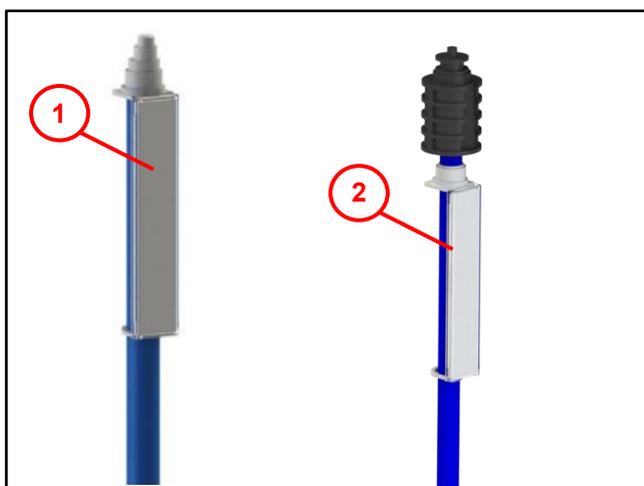


Fig. 18

If labelling plates are to be fitted, they must be installed prior to installation of the micro-duct gas stops.

(1) Closed, used as a labelling plate and cap

(2) Open, used as a labelling plate

Pay attention to the installation instructions for the labelling plates!

8 Installation of the optical fibre main cable

8.1 Inserting the main cable/mini cable/bundled loose tube fibres

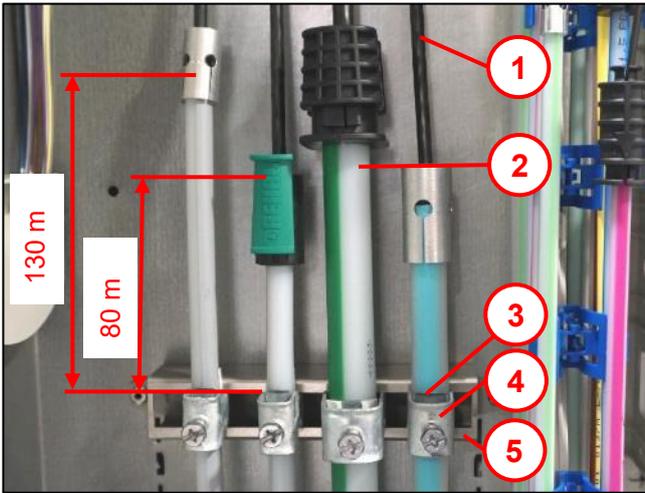


Fig. 19

- Insert the micro-duct pipes (2) for the optical fibre mini cable (1) into the cabinet through the base plate (inserting micro cables, see section 7).
- Fix the micro-duct pipe with U-clamp (5) and counter-trough, double trough (4) onto the C-DIN rail (5).
Note: Only tighten the fastening screw **hand-tight**.
- Alternately, strip the micro-duct pipe 80 mm or 130 mm above the C-DIN rail.
- Insert the optical fibre mini cables (provide micro-duct gas stops according to the manufacturer's installation instructions) or air cables.

Note: The following options are available to route the cables or bundled loose tube fibres for the four mounting points (standard) on the rear panel:
(8 further mounting points are possible using the adapter set accessory)

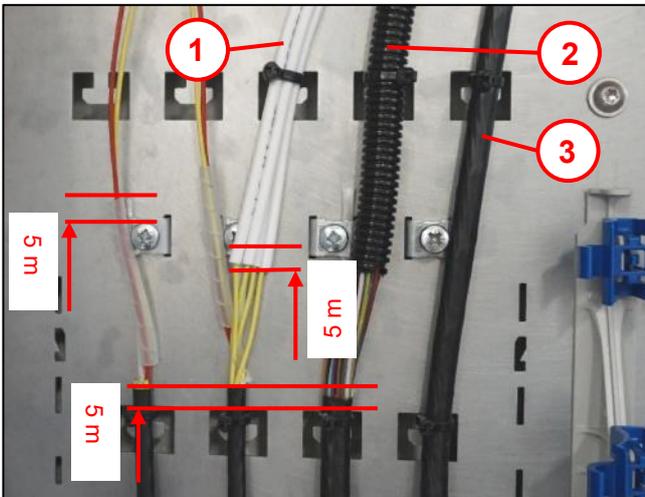


Fig. 20

- Cables (3) on the door
max. 4 pcs. for max. $\varnothing 10$,
max. 7 pcs. for $\varnothing 6.5$.
- Bundled loose tube fibres in a corrugated tube 2
max. 4 pcs. on the door for max. $\varnothing 13.5$.
- Bundled loose tube fibres in protective tubes
 $6 \times \varnothing 4$ (1) on the door.

Note: Store bundled loose tube fibres that are not currently required on the excess cable tray.

Regarding mounting on the cable organiser access on the door see Fig. 25.

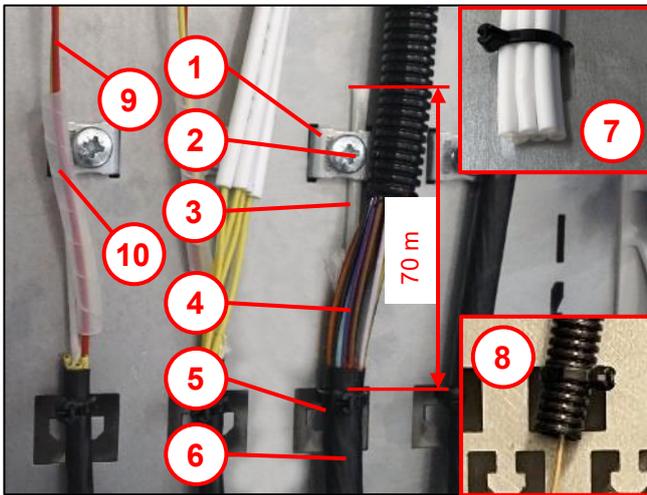


Fig. 21

- Strip the core of fibre cable (3) to 70 mm and guide under the clamping yoke (1). **Note:** Alternative strain relief on the door side, see Fig. 25.
- Protect the bundled loose tube fibres (9) in the area of the clamping yokes with a spiral tube (10).
- Strip the bundled loose tube fibres (4) as per the specification.
- Depending on the design:
 1. Strip the protective tubes (7).
Secure the protective tubes to the rear panel with cable ties.
Route the bundled loose tube fibres into the protective tubes.
 2. Strip the corrugated tube (8).
Secure the corrugated tube to the rear panel with cable ties.
Guide the bundled loose tube fibres into the corrugated tube.
- Fix the core of fibre cable in place with a clamping yoke screw (2).
- Fasten the optical fibre mini cables/air cables (6) to the rear panel with cable ties (5).

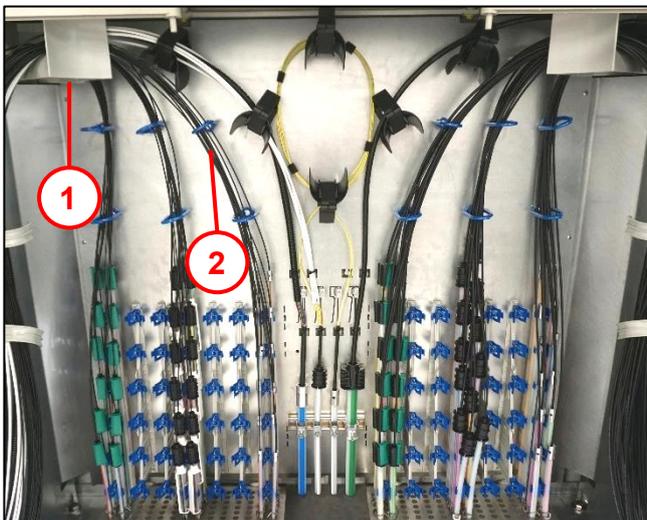


Fig. 22

- Bundle the protective tubes/corrugated tube/bundled loose tube fibres using guide rings (2) and route them via the cable diverter (1) to the fibre tray level.

8.2 Loop

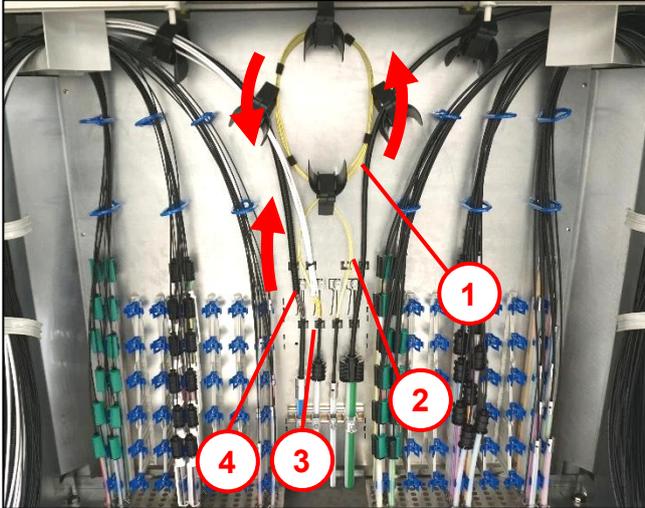


Fig. 23

- Bundled loose tube fibres to the excess cable tray (2).
- Outlet of the bundled loose tube fibres (3) (bundled loose tube fibres/cables from the cabinet).
- Bundled loose tube fibres via the cable diverter for loop excess storage (1).
Note: Lay excess length in a figure of eight.

Cut fibres in bundled loose tube fibres to the fibre tray system level on the door (4).

8.3 Ongoing routing of optical fibre main cables/mini cables/bundled loose tube fibres

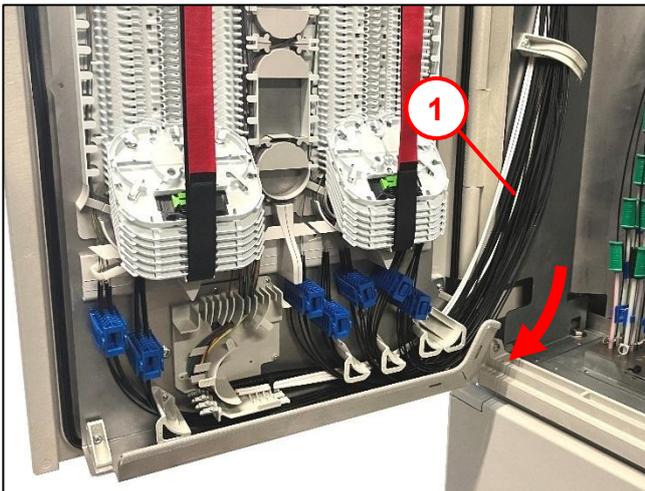


Fig. 24

- Continue routing the bundled loose tube fibres/corrugated tube/protective tube (1).

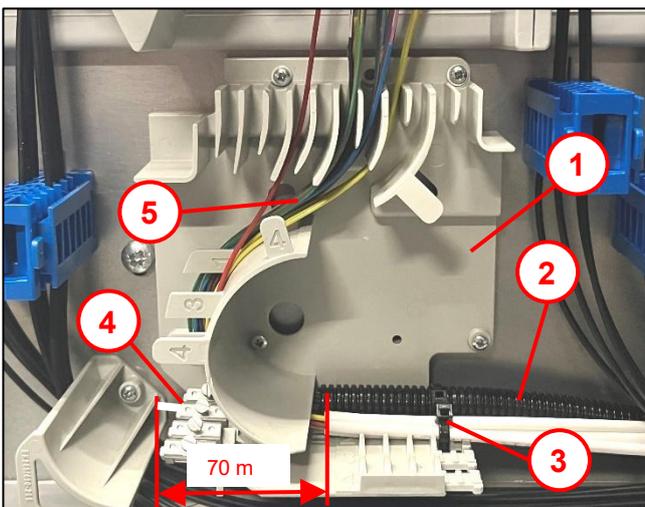


Fig. 25

- Depending on the design:
 - Attach the protective tube/corrugated tube (2) to the cable organiser (1) with cable ties (3).
 - Strip the protective tube/corrugated tube.
- Guide the bundled loose tube fibres (5) through the cable organiser access into the end piece.
- Strip the core of fibre cable (4) to 70 mm.
- Insert the core of fibre cable into the bay, push on the clamping yoke and screw in place.
- Shorten the protruding core of fibre cable.

9 Micro cable assembly in the outlet area

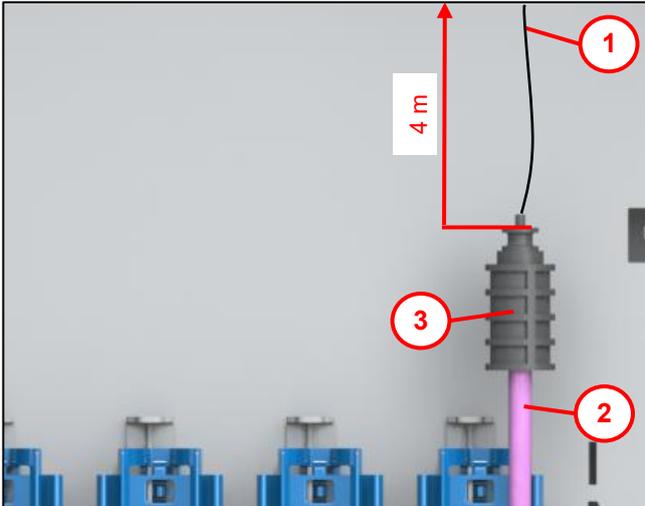


Fig. 26

- Insert the micro cables $\varnothing 2.5\text{--}4.0$ mm (1) into the micro-duct pipe (2).
Note: The length of the optical fibre micro cable must be, for example 4 m, from the cutting edge (depending on the specification).
- Seal the micro cables with sealing elements (3) (refer to manufacturer's installation instructions).

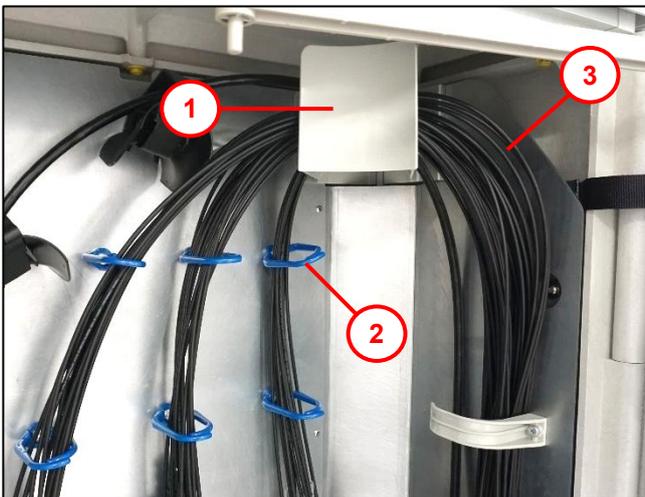


Fig. 27

- Route the optical fibre micro cables (3) through the guide rings (2) on the rear panel.
- Route the optical fibre micro cables via the cable diverter (1) and protective corrugated tube to the fibre tray level.

10 Inserting the optical fibre micro cables (at the fibre tray level)



Fig. 28

- The strain relief of the mini cable and organisation of the micro cables is done below the fibre management area.
Note:
 - Ensure sufficiently loose routing around the optical fibre radius limiters when organising micro cables.
 - The micro cable organiser shown below is for a cable diameter of $\varnothing 1.2\text{--}2.5$ mm (grey) or $\varnothing 2.3\text{--}4.6$ (blue).
Use a maximum cable diameter of $\varnothing 4.0$ mm with a maximum number of cables (84x per door side).

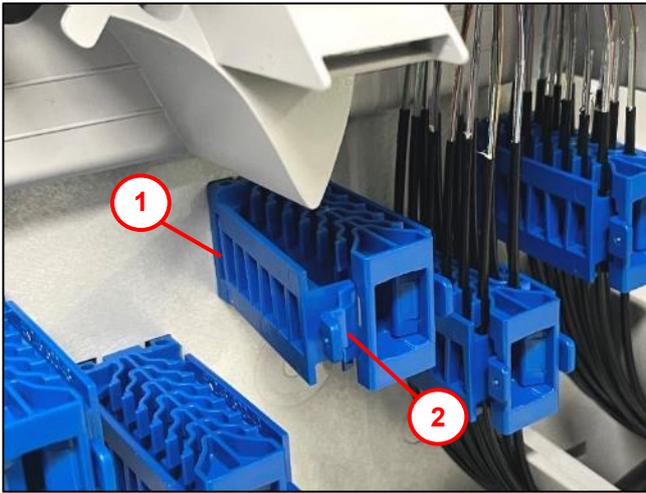


Fig. 29

- Push the snap tab (2) backwards.
- Swivel the cover (1) outwards and remove it.

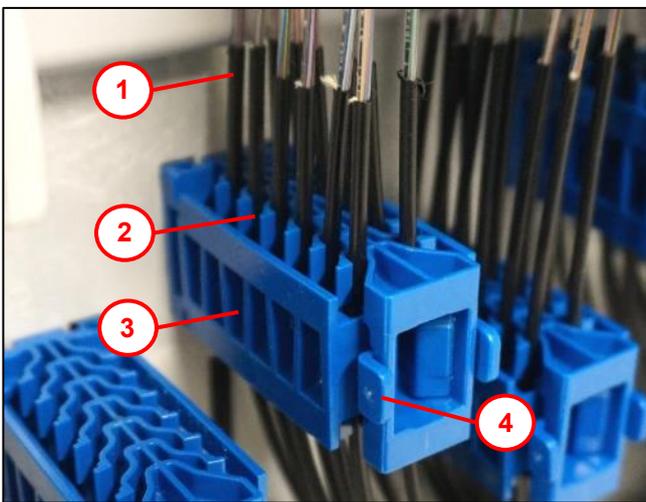


Fig. 30

- Press the micro cable (1) into the clamping points (2), referring to Fig. 31 for the length to be stripped above the clamping points.
- **Note:** Start the assignment from the back to the front to simplify organisation.
- Insert the cover (3). Push the cover back and swivel it fully in until the snap tab (4) audibly clicks into place.

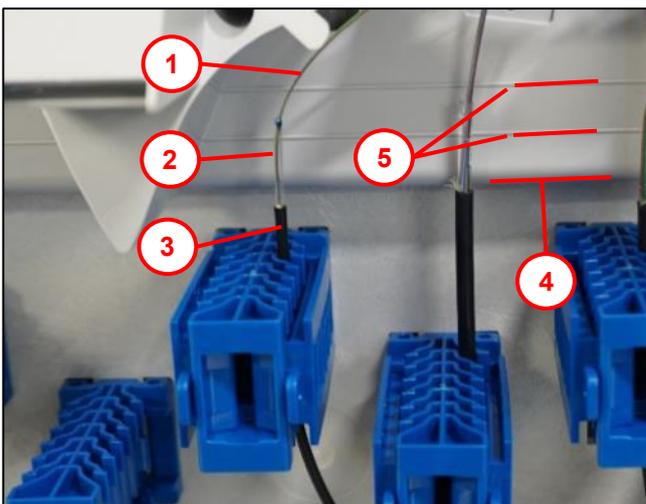


Fig. 31

- Strip the micro cables (3) at the lower edge of the end piece (4).
- Strip the bundled loose tube fibres (2) between the two designated lines (5) of the end piece and guide the optical fibres (1) into the fibre management area.

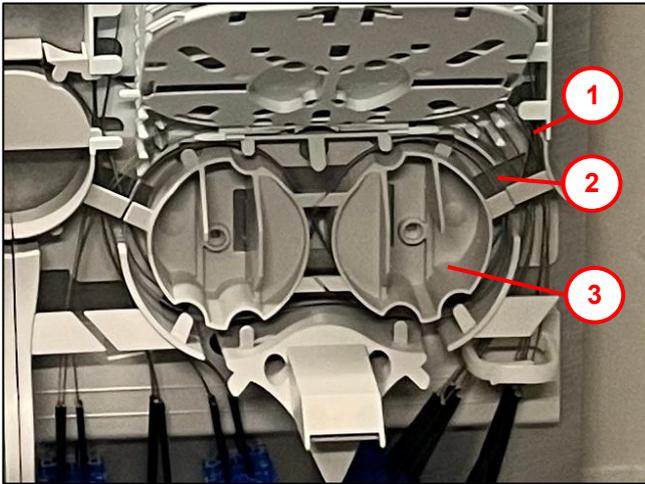


Fig. 32

- Change the fibre ducts (1) on the left - right within an end piece (2) and route the fibres over the fibre management spools (3).

11 Use of the protective cover

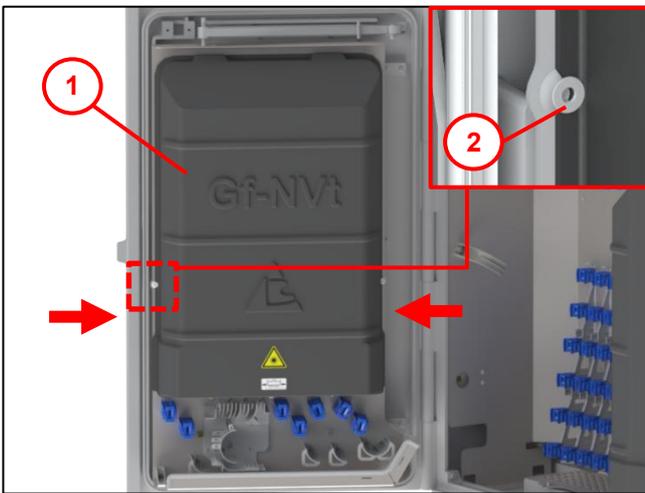


Fig. 33

- Press together the bottom of the protective cover (1) so that it detaches from the cover mounts (2).

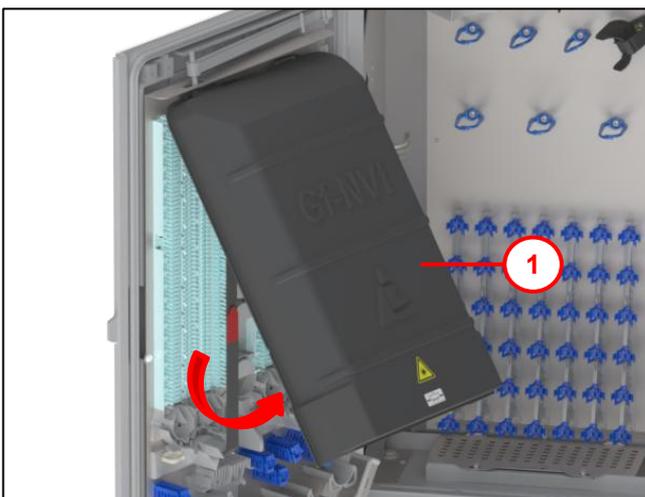


Fig. 34

- Pull the protective cover (1) slightly forwards and upwards out of the fastening clamp.
- The cover can be closed again in reverse order.

12 Description of the Langmatz fibre tray system

12.1 Mounting panel

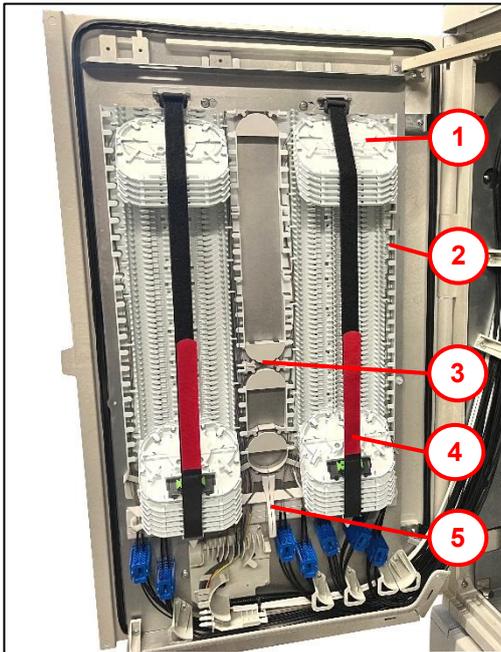


Fig. 35

- Item 1** Optical fibre trays (quantity depends on the version)
- Item 2** Organiser module (basic element) to hold fibre trays with fibre routing
- Item 3** Fibre bridges
- Item 4** Hook-and-loop strap
Note: Slightly tighten and fix the hook-and-loop strap.
- Item 5** End piece with fibre guide area

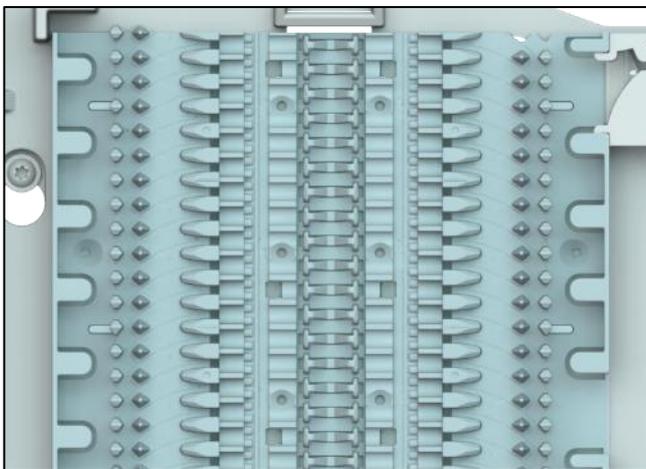
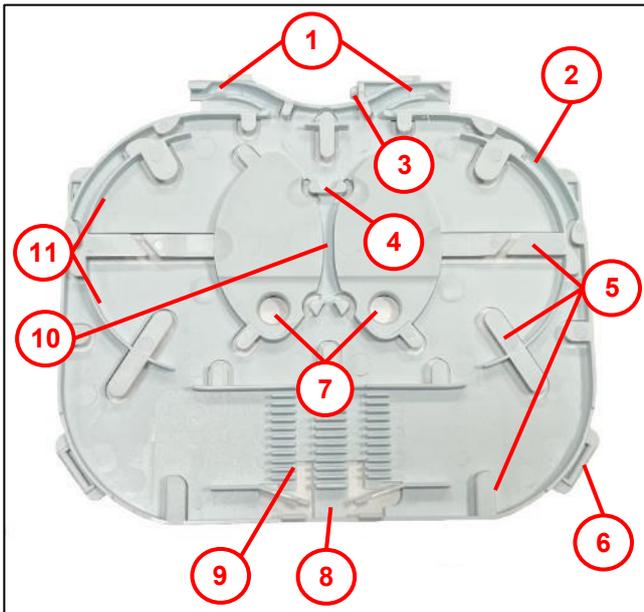


Fig. 36

- Every organiser module has space for 18x 5 mm fibre trays and/or 9x 10 mm fibre trays.
- Depending on the design, fibre trays do not form part of the scope of supply.
- Tool-free installation of the fibre trays.
- Removal using the installation tool supplied.
- Total capacity 144x 5 mm fibre trays or 72x 10 mm fibre trays.

12.2 Description of the splice fibre tray



- Item 1** Fibre inlet/fibre outlet channel
- Item 2** Outer fibre tray
- Item 3** Snap lug
- Item 4** Termination mount
- Item 5** Down-holder for fibres
- Item 6** Mounting for marking rings
- Item 7** Mounting for cover
- Item 8** Mounting option for coupler/splitter
- Item 9** Storage for crimp splice protector
- Item 10** Guide for direction switch
- Item 11** Internal fibre placement

Fig. 37

12.3 Inserting the fibre tray

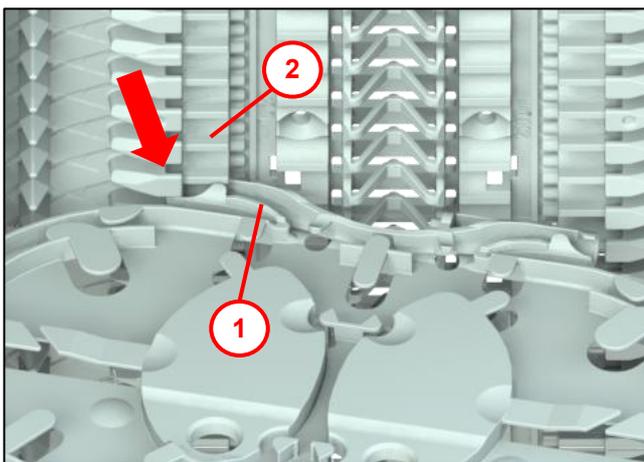


Fig. 38

- Position the fibre tray with fibre channel(1) on the left into the round recess on the organiser module (2).

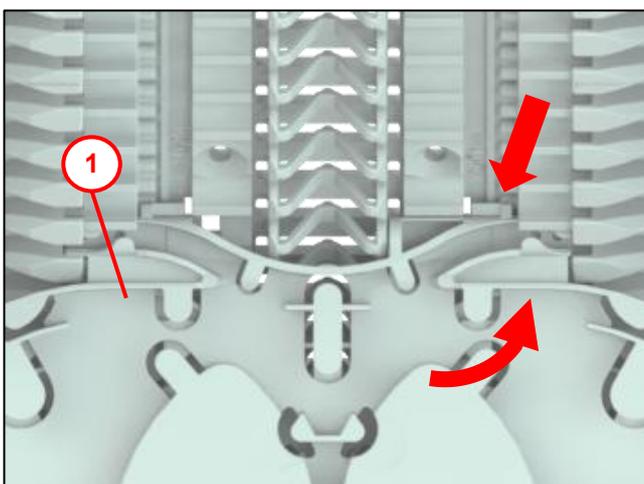


Fig. 39

- Engage the fibre tray (1) down and to the right.

12.4 Removing the fibre tray

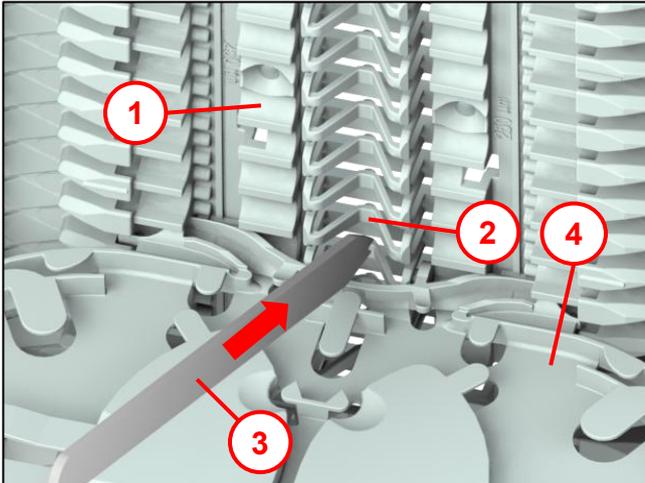


Fig. 40

- To remove it, position the fibre tray (4) vertically to the organiser (1).
- To remove the fibre tray, press the centre of the resting mount (2) downwards with the installation tool (3).
- Remove the fibre tray.

13 Inserting and splicing optical fibres

13.1 Feeder fibres to the fibre tray

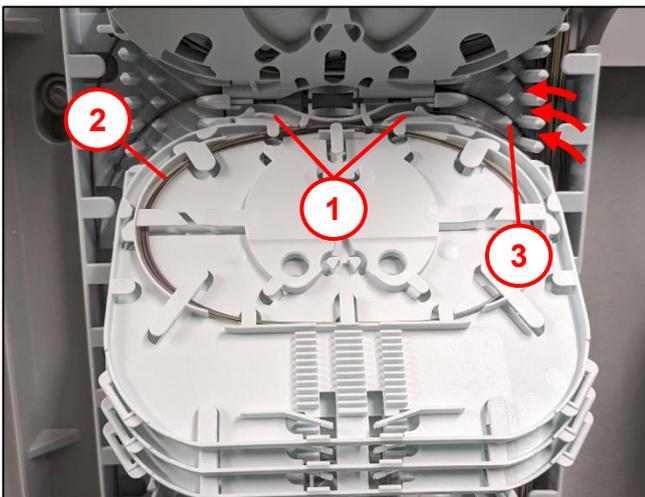


Fig. 41

- Route the optical fibres (2) over the guide (3) on the organiser module to the fibre tray.
- Entry into the fibre tray through the fibre inlet/fibre outlet channel (1).

13.2 Splicing fibres

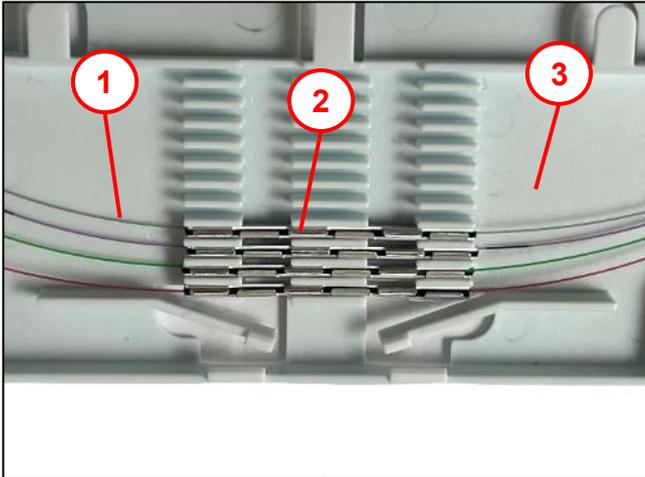


Fig. 42

- Determine the fibre lengths according to the specification.
- Splice the fibres (1).
- Place the crimp splice protection (2) in the splice protection holder (3).

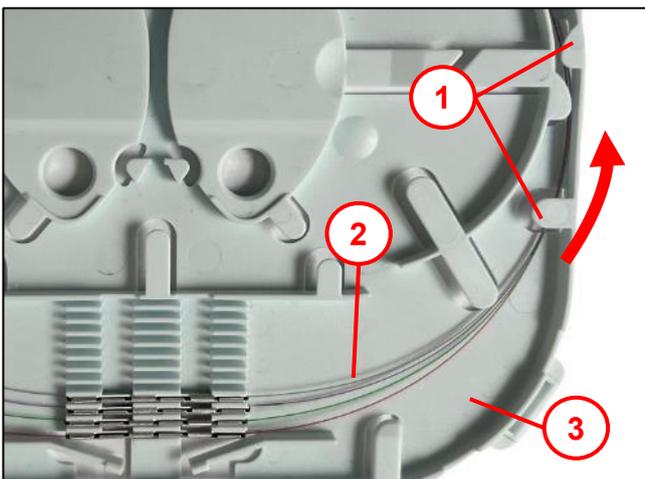


Fig. 43

- Place the optical fibres (2) starting from the left or right into the outer fibre placement (3) under the down-holder (1).
- Route the optical fibres downwards in a semicircle.

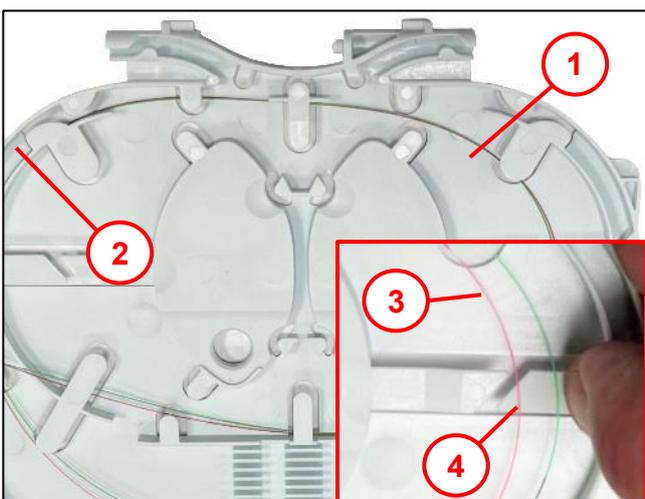


Fig. 44

- Change the optical fibres from the outer fibre placement (2) to the inner fibre placement (1).
- Press the large down-holder (4) when inserting the optical fibres (3).
- Store the fibres in the inner fibre placement and insert a minimum or three of more fibre windings.

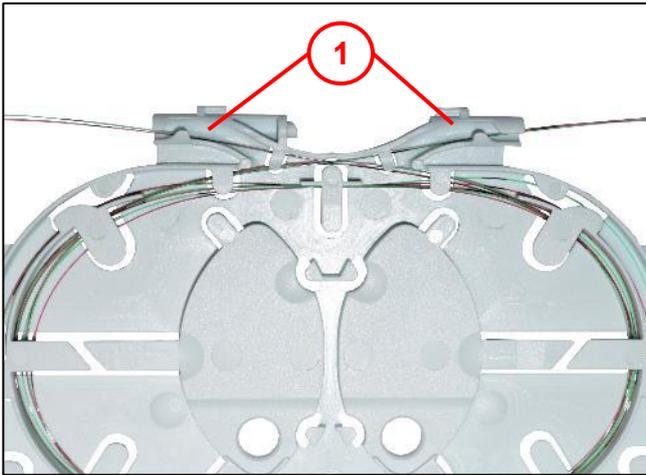


Fig. 45

- Finally check whether all optical fibres are correctly placed in the fibre inlet/fibre outlet channels (1) and are under the down-holders.
-

13.3 Change in direction of the fibres in the fibre tray

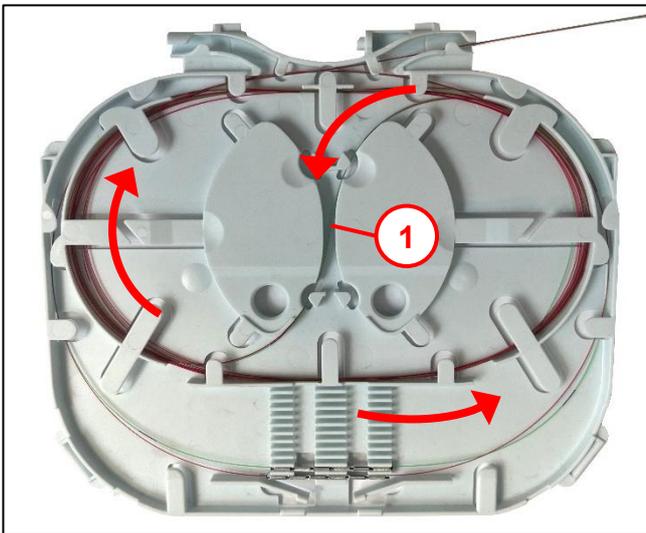


Fig. 46

- When changing the direction of the optical fibres, do so in the middle area of the fibre tray (1) as shown (creating a "figure of eight").

13.4 Side optical fibre cable guide

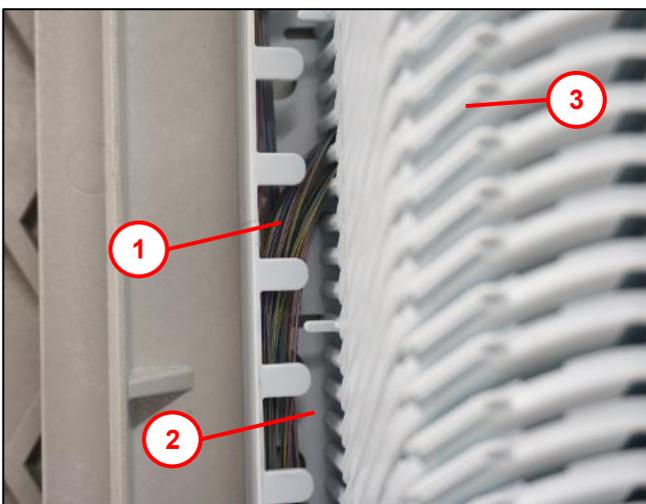


Fig.

- Route the optical fibres (1) along the guide (2) to the fibre tray (3).

13.5 Fibre bridge

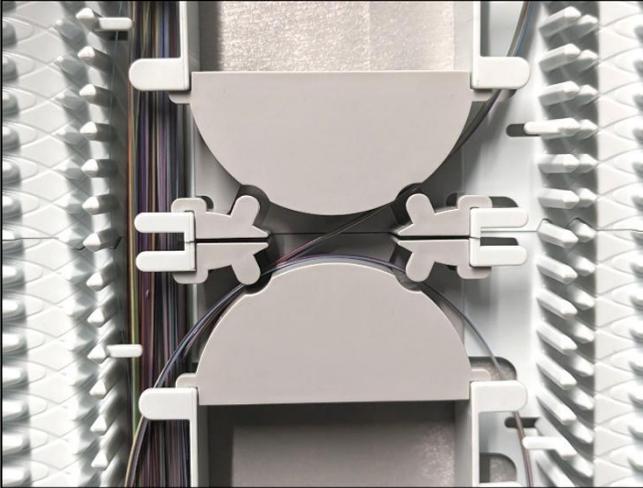


Fig. 47

- There are 4 single-fibre bridges between the rows of fibre trays for manoeuvring between the two fibre tray stacks.
- Bridges provide the necessary protection and ensure the minimum bending radius of the fibres.

13.6 Fibre tray cover

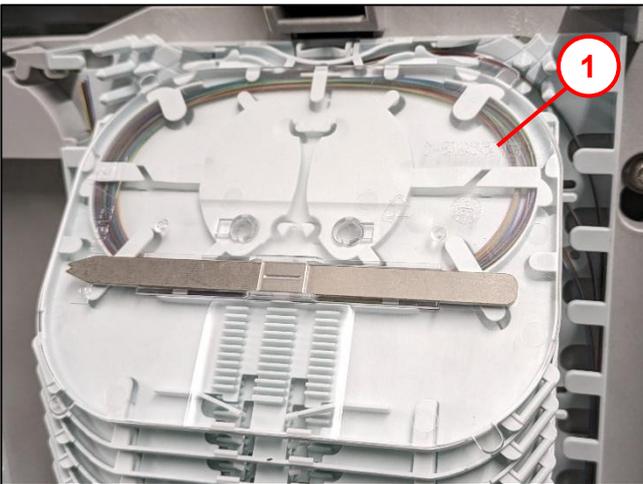


Fig. 48

- The top fibre tray is fitted with a transparent cover (1) to protect the fibres and splices.
- All other fibre trays are protected by the respective fibre tray above.

14 Double swivel lever

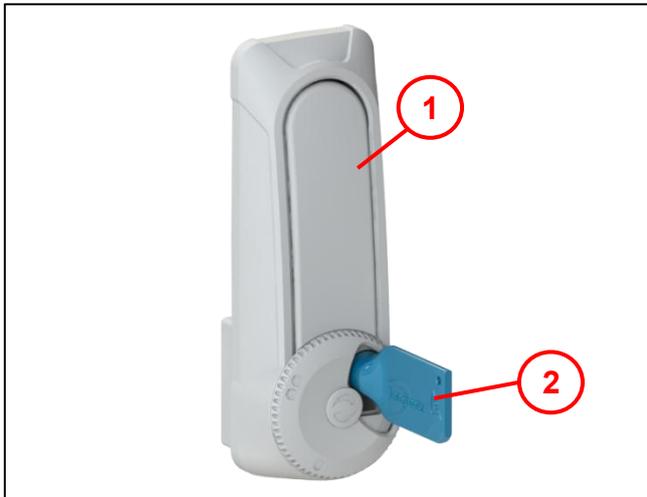


Fig. 49

- Open the swivelling lever handle (1) with the cabinet/manhole key (2).



Fig. 50

- Insert the profile half-cylinder (2) from the rear or from the front (depending on the make) into the swivel lever handle (1).
- Adjust the depth of the profile half-cylinder until the fastening screw (3) can engage in the thread.
- Tighten the fastening screw.

Note: A blind cylinder can be used with a double swivel lever if a profile half-cylinder opening is temporarily not used (usually factory installed).

See also the EMKA installation instructions:

https://www.emka.com/de_en/vlink-0000000063



15 Order data and accessories

Refer to the Product Catalogue for FTTX Optical Fibre Networks:

<https://langmatz.de/de/produkte/outdoorgehaeuse/glasfaser>

16 Material defects

Langmatz GmbH accepts liability for material defects in the product as per Section 434 BGB (German Civil Code) for 24 months, starting from the date on the purchase receipt.

Within the scope of liability, all parts that become damaged due to manufacturing faults or material defects will be replaced or repaired free of charge.

The purchaser must report any deficiency complaints immediately in writing.

Claims by the purchaser for damages due to material defects or for whatever legal reason will not be accepted.

Any damage or failure caused by the following are also excluded from liability

Incorrect use,

Natural wear and tear,

Intervention by third parties.

We accept no liability for damage caused by force majeure or transport.

Repairs due to a complaint about a defect do not extend the warranty period for the replaced parts or for the product.

This product conforms to the latest state-of-the-art technology. Nevertheless, if you experience any problems with it, please contact our hotline (chapter 20).

17 Recycling

The materials mainly used for the optical fibre distribution cabinet are polycarbonate and ABS and are fully recyclable.

18 Cleaning, repainting

Normally soiled cabinets can be cleaned with standard household cleaning agents.

The cabinets can be coated with a two-component paint on site.

19 Quality management

Langmatz GmbH's quality management system is certified according to DIN EN ISO 9001.

20 Disclaimer/Warranty

The information in this technical document is presented appropriately and correctly in compliance with the technical regulations, and to the best of our knowledge. However, this does not confer any guarantee of particular properties. In this context, the operator of the Langmatz GmbH products is expressly obliged to decide, based on their own judgement, whether the products are suitable and appropriate for the application or use being considered. The product liability accepted by Langmatz GmbH relates exclusively to our conditions of sale, delivery, and payment. Langmatz GmbH accepts no liability on the basis of random, indirect and resultant consequential damage, or of any damage attributable to any use of the product other than its intended purpose as described.

21 Contact

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