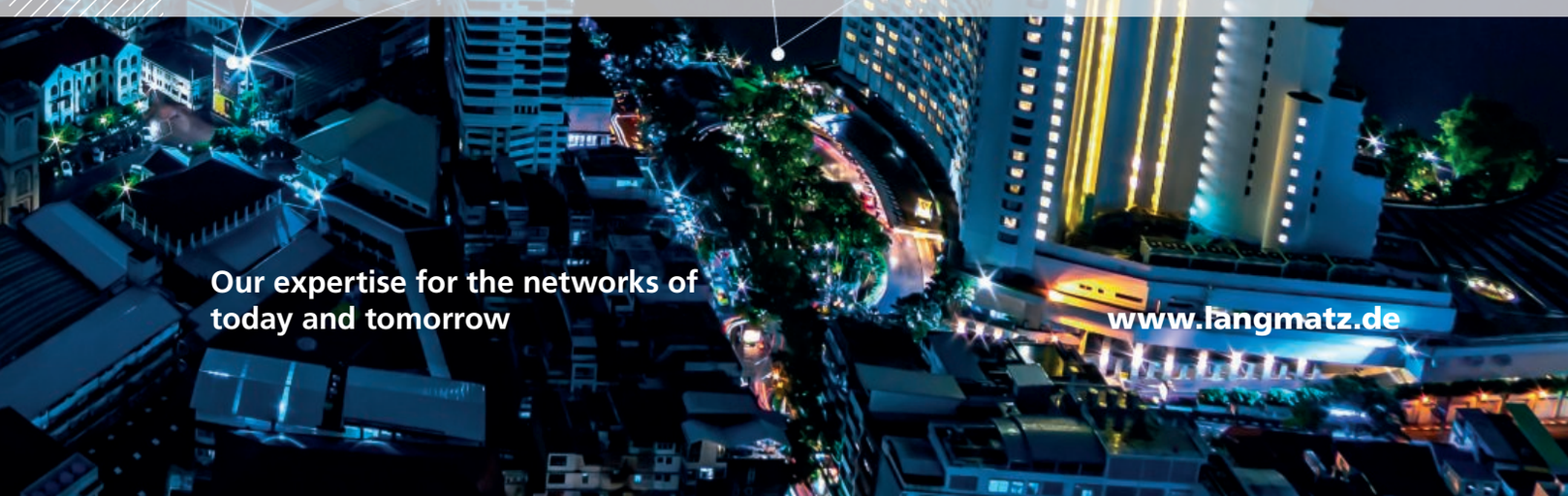
Langmatz

FTTH + FTTB SOLUTIONS
for optical fibre networks



Our expertise for the networks of today and tomorrow

www.langmatz.de

▲ Plastic granulate

Contents

4	Langmatz – Our expertise for the networks of today and tomorrow
5	One-stop shop – From development to delivery
6	Your partner Langmatz – Individual system solutions from the German Alps
7	From development to production – Ultimate integrated quality assurance
8	FTTx product range – From distribution cabinet to subscriber
9	FTTx product overview – Solutions for optical fibre networks
11	Outdoor cabinets – Advantages of fibre distribution cabinets
12 – 13	Fibre distribution cabinets – Product overview
14 – 15	CDC type 22 FDC L 2.8 – Construction overview
16 – 19	CDC type 22 FDC L 2.8 – Fibre distribution cabinet
20 – 21	EK265 2.0 Outdoor pedestal – For FDC L
22 – 25	FDC M 2.6 – Fibre distribution cabinet
26 – 29	FDC S 2.6 – Fibre distribution cabinet
30 – 31	FDC XS 2.6 – Fibre distribution cabinet
32 – 39	Accessories / spare parts – Fibre distribution cabinets
41	Optical fibre building cable & pipe entry system – Together we are bringing high-speed internet into every home
42 – 43	EK459 VarioPipe – Optical fibre building cable & pipe entry system
45	Optical distribution and termination boxes – Simple to install with versatile details
46 – 47	Optical distribution and termination boxes – Product overview
48 – 49	ONT size S – Optical distribution and termination box / Subscriber junction box
50 – 51	ONT size M – Optical distribution and termination box
52 – 53	ONT size M+ – Optical distribution and termination box
54 – 55	ONT size L and size L (spl. dist.) – Optical distribution and termination box
57	The efficient alternative to concrete – Modern polycarbonate manholes
58	Withstands the highest loads – Langmatz 3D-ribFrame technology
59	European approval – For the complete Langmatz manhole system
60	Modular design
61 – 62	Additional features
63	Selection criteria
64	Illustration of manhole construction
65	Product overview of the QualityBox PC – Standard sizes
66	Remarks – Classification by application area as per DIN EN 124
67	Polycarbonate manholes – QualityBox PC dimensions
68 – 70	QualityBox PC EK478
71 – 73	QualityBox PC EK628
74 – 76	QualityBox PC EK338
77 – 79	QualityBox PC EK508
80 – 82	QualityBox PC EK428
83	Accessories – Frames
84 – 85	Accessories – General
86	Awards

Langmatz –
Our expertise for the networks of today and tomorrow

The specialist for technical system solutions

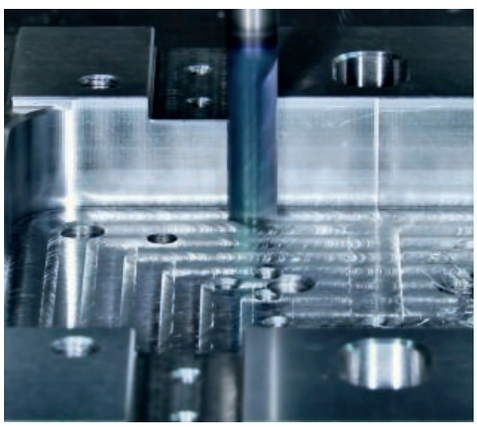
Langmatz technical system solutions are considered the gold standard of modern infrastructure in telecommunications and energy networks. Langmatz customers include energy providers, local councils, public utilities, and telecommunication companies.

"Made in Germany" is our guiding principle. One of our greatest strengths is that we carry out all processes at our sites in Germany. From design and development supported by the latest 3D printing technology, prototype and mould making, to production and installation.

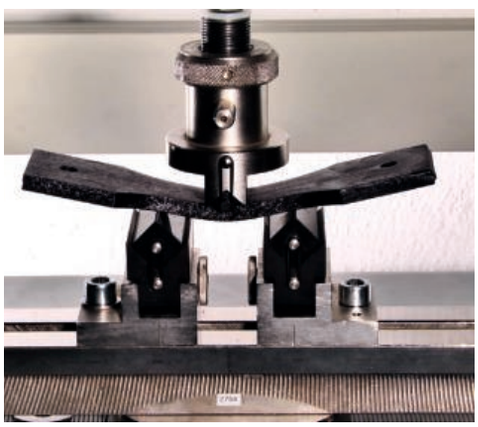
Our quality management system (QMS) forms the daily basis for meeting our challenging goals. As standards are often not enough for us, we have evolved extensive testing processes and integrated special testing methods into our quality processes. These include regular checks in our material and product testing laboratory, which is equipped with a special static load hydraulic press for manholes.

The core elements of our corporate strategy include qualified employees, national supply chains, and manufacturing in Germany with state-of-the-art production facilities.

▲ Injection moulding machines



▲ Mould and tool making



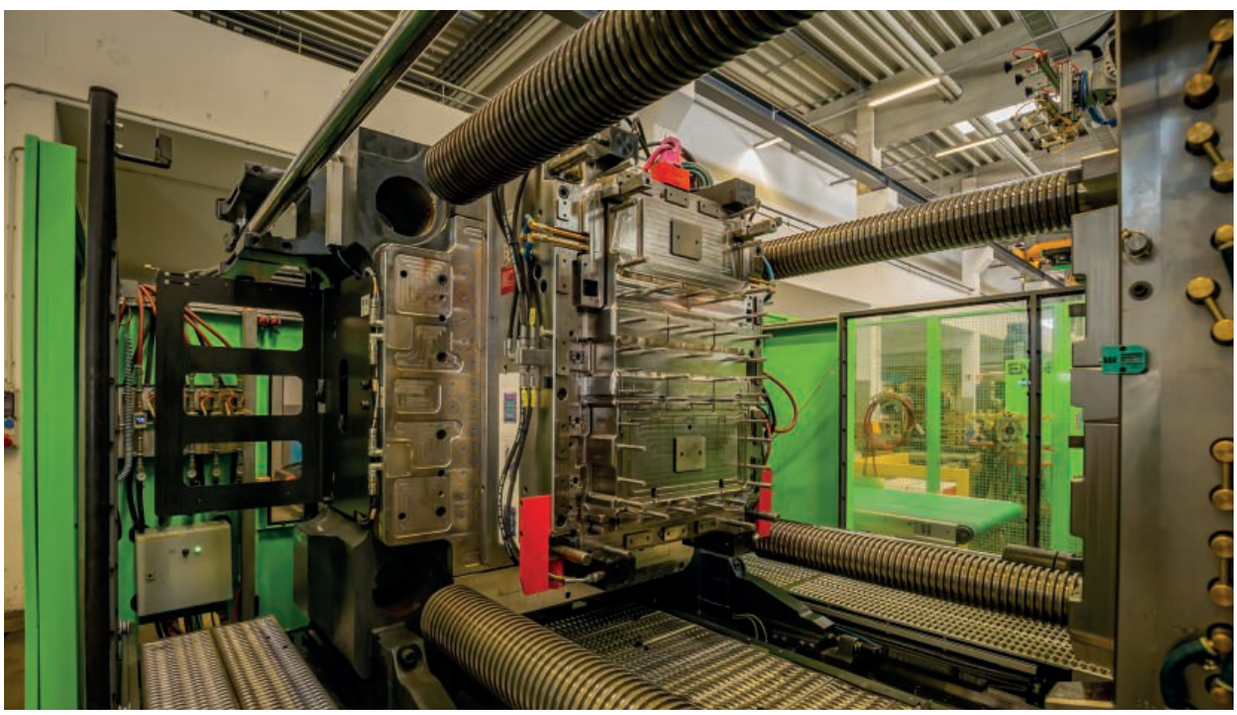
▲ Product and materials testing laboratory

Ongoing digitalisation requires technologically mature systems for the networked city of today. We are one of the most innovative companies in Germany and, as such, we are the perfect partner to implement your projects.

One-stop shop –
From development to delivery

With a wealth of innovative product developments over almost six decades, Langmatz is one of the leading industrial companies in plastic and metal processing. Our strength is that we map all product development processes at our sites. From design and development supported by the latest 3D printing technology, prototype and mould making, to production and installation.

We ensure the high quality of our products through our operational quality management as well as regular inspections in our materials and product testing laboratory, which is equipped with a special static load hydraulic press for manholes. Qualified employees, national supply chains and Made in Germany production with state-of-the-art production facilities are key factors in our success. The satisfaction of our customers is our top priority.



▲ Injection moulding

▲ Automated bending

▲ Welding robot

Your partner Langmatz –
Individual system solutions from the German Alps

A fundamental structural transformation is taking place in towns, cities and rural areas. Digitalisation, climate protection and the energy and mobility transition require new concepts for a functional urban infrastructure in which people can enjoy their lives. This approach has given rise to the idea of the Smart City and the Smart Village – the vision of digitally networked environments.

Langmatz has looked into these requirements in detail and developed future-centric solutions for energy and data connectivity, as well as transport infrastructure. In doing so, we have placed great importance on ensuring that our systems boast a high level of security, can be integrated seamlessly into the townscape, and are particularly user-friendly.

We offer a broad-based portfolio of high-quality products for the many different requirements of the cities and towns of today and tomorrow:

- ▲ Polycarbonate manholes
- ▲ Underground distribution systems
- ▲ Outdoor cabinets and outdoor pedestals
- ▲ Building cable & pipe entry systems
- ▲ Fuse boxes
- ▲ Pedestrian signal requesting devices
- ▲ Radio ripple control receivers

Sites

PRODUCTION PLANT I
Head Office Garmisch-Partenkirchen

- ▲ Board of Management
- ▲ Research and Development
- ▲ Production
- ▲ Commercial management
- ▲ Sales & Marketing

PRODUCTION PLANT II Oberau

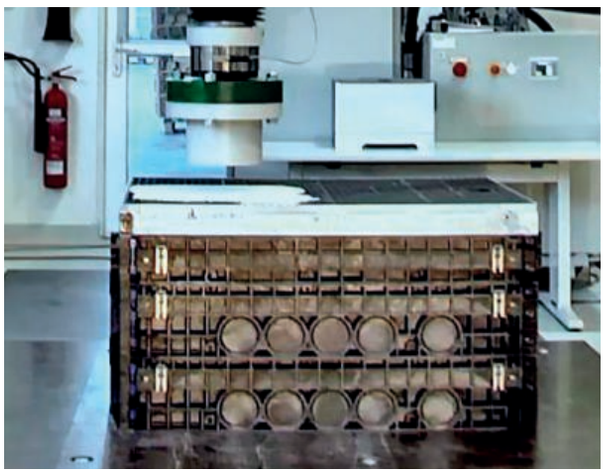
- ▲ Commercial management
- ▲ Materials management
- ▲ Installation
- ▲ Production
- ▲ Quality management
- ▲ Sales
- ▲ Langmatz Worlds 2 (Exhibition space)

PRODUCTION PLANT III
Garmisch-Partenkirchen

- ▲ Installation
- ▲ Production
- ▲ Quality management and static load hydraulic press
- ▲ Langmatz Worlds 1 (Exhibition space and conference room)

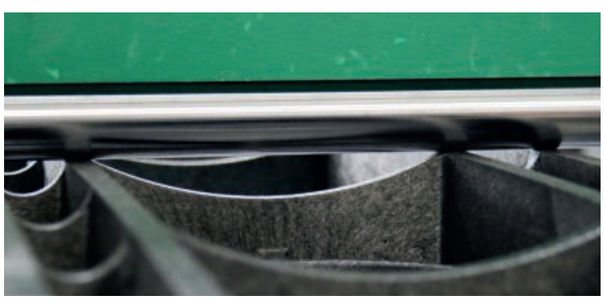
From development to production –
Ultimate end-to-end quality assurance

We develop innovative high-quality products in collaboration with our customers. To achieve this, we rely on state-of-the-art technology in our development work, including the use of the latest 3D printers. Langmatz has also established integrated end-to-end quality assurance processes extending from development to production. We therefore aim to continuously test our manholes to ensure that they meet all load classes. These complex tests are conducted in our Material and Product Test Laboratory, and start right from the development process. The findings acquired are incorporated into the production of every last element. Quality assurance of continuous manhole production is provided for by a daily, random 3-point bending test.



▲ Load class testing at Langmatz in Garmisch-Partenkirchen

▲ 3-point static load hydraulic press at Langmatz in Oberau



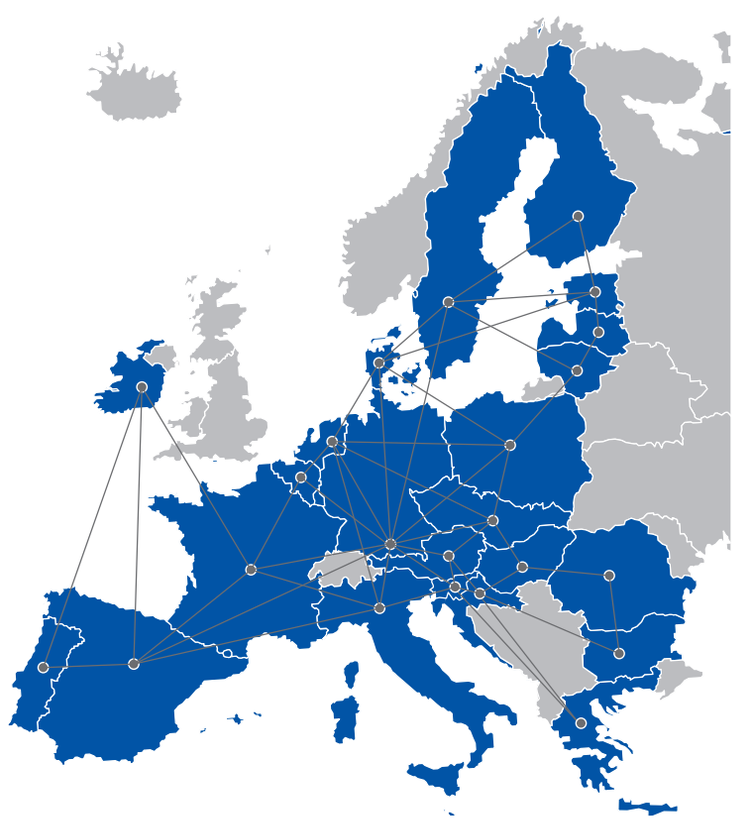
▲ Regular 3-point bending test every 2 hours

European approval for the complete Langmatz manhole system

The requirements governing the construction principles, testing, labelling, and quality control of manhole covers are regulated in DIN EN 124. A General Technical Approval (AbZ) is all that is required for approval of a manhole in Germany.

By contrast, Langmatz polycarbonate manholes are unique: the entire manhole system is tested, not just the cover. As our manholes comply with the load classes, we have an ETA (European Technical Assessment) which applies to all of our polycarbonate manholes with cover as per DIN EN 124 (B 125 and D 400). This confirms that all the test criteria have been met by Langmatz. That is why our manholes also carry the coveted CE mark.

CE

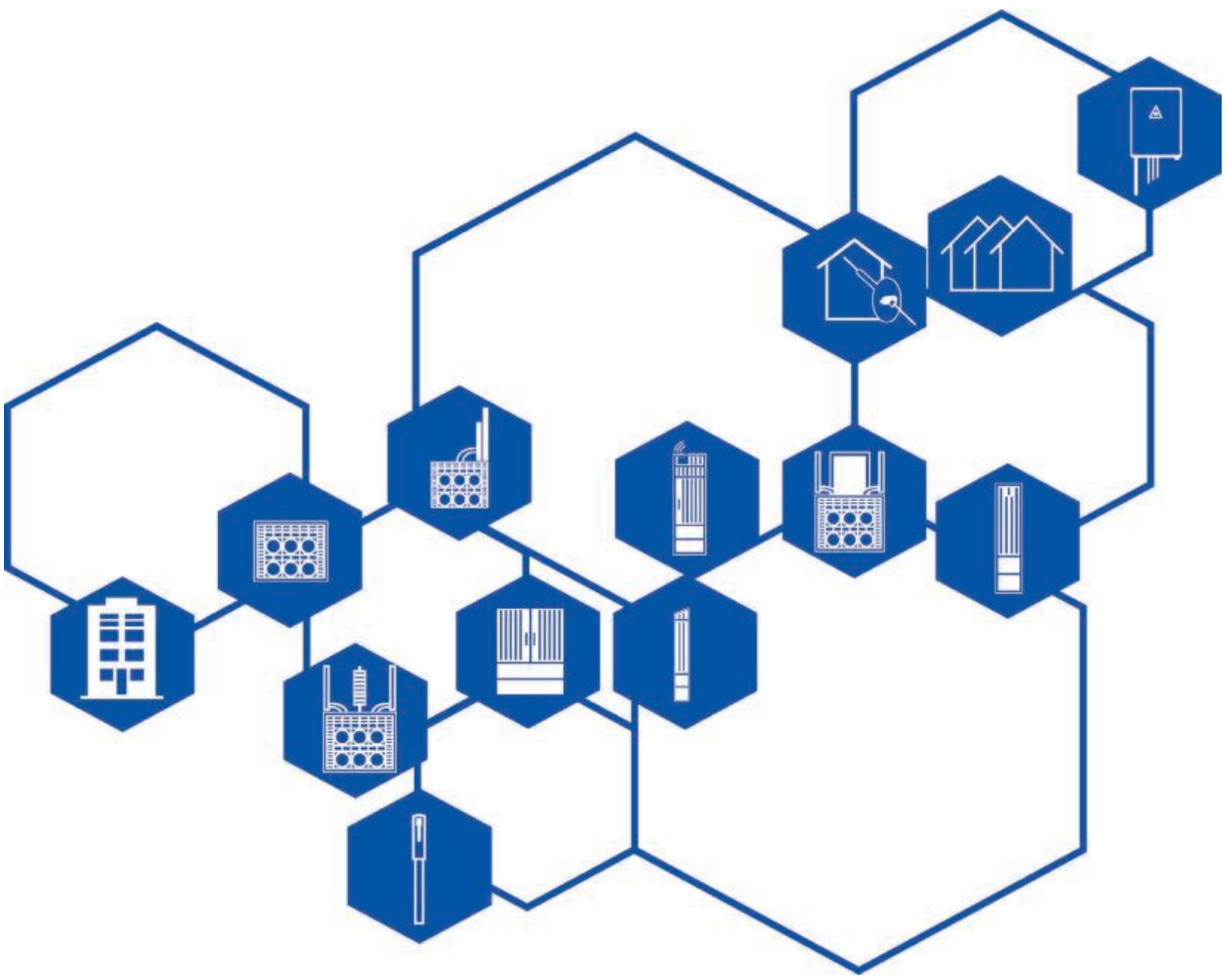


FTTx product range –
From the distribution cabinet to the subscriber

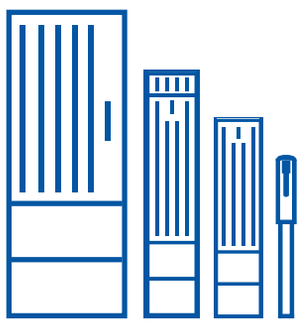
Langmatz offers an integrated portfolio for the expansion of FTTx optical fibre networks from the distribution cabinet to the subscriber. Langmatz has been supplying systems for years. We make indoor and outdoor distribution systems, configured manhole systems, building cable & pipe entry systems and fibre termination points. We can provide a complete, customised solution for your FTTx optical fibre expansion.

Advantages:

▲ Coherent concept with coordinated products
▲ A wealth of expansion options based on customer requirements
▲ High-grade plastics and metals for long service life
▲ Compliance with the required IP degree of protection
▲ Infrastructure protection and monitoring systems

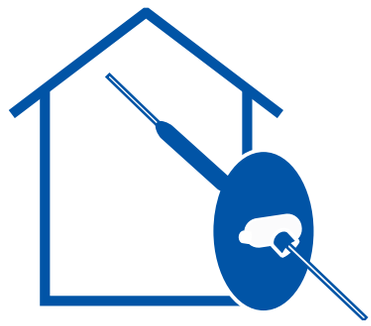


FTTx product overview –
Solutions for optical fibre networks



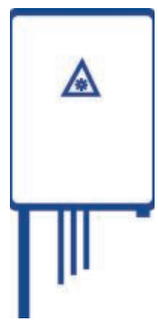
Fibre distribution cabinets (FDC), above ground

Weather-resistant, easy-to-install fibre distribution cabinets for the expansion of modern optical fibre networks. The high-quality, recyclable polycarbonate provides optimum protection for different connection and network infrastructure components.



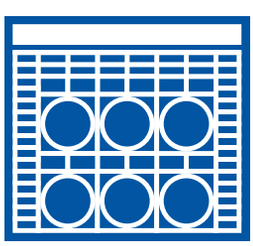
Building cable & pipe entry systems

Building cable & pipe entry systems equipped with the right sealing technology for all common masonry types – easy to install and always securely sealed.



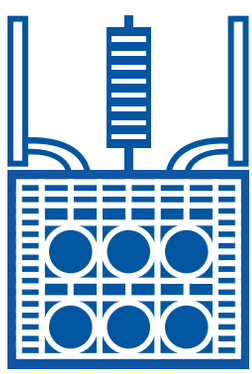
Optical distribution and termination boxes (ONT)

Embedded in a durable polycarbonate cabinet with IP 54 degree of protection, they are designed for ease of installation, mounting, routing and commissioning of sophisticated optical fibre technology by users.



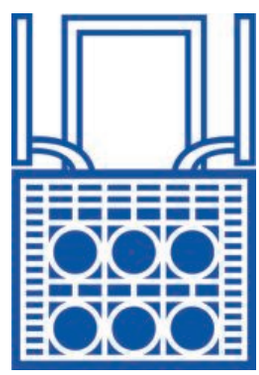
Polycarbonate manholes

A permanently durable and flexible alternative to concrete manholes, with many practical advantages. Polycarbonate 3D ribFrame technology is synonymous with excellent stability, load-bearing strength and durability. A wide range of sizes and equipment configurations provides for a wealth of uses.



Distribution systems with fibre enclosure, underground

Langmatz underground distribution systems are a future-proof solution to protect sensitive distribution systems for electricity, water and telecommunications from unauthorised access, vandalism, and flooding.



Fibre distribution cabinets (FDC), underground

Designed as a modern, concealed solution for the expansion of optical fibre networks, their flexible expansion options provide for the installation of a wide range of fibre enclosures, as well as their use as fibre distribution cabinets.

Langmatz

Outdoor cabinets –
Flexible expansion & high-quality material

Outdoor cabinets –
Advantages of fibre distribution cabinets

Easy-to-install, secure and stable:

- ▲ Over 55 years of experience in plastic processing and design.
- ▲ Excellent strength values based on the use of the very highest quality materials.
- ▲ Maximum UV and weather resistance ensure durable use even in the most adverse conditions.
- ▲ Special optical fibre reinforcement prevents injuries caused by fraying glass fibres.
- ▲ Protection from the formation of condensation and good thermal insulating properties using special thermoplastic foam injection moulding.
- ▲ Precise adjustment to your requirements in the power engineering, telecommunication and traffic engineering sectors.
- ▲ Technologically mature products perfectly tailored to their purpose through continuous improvement.
- ▲ Permanent spare parts availability ensures cost-effective repairs to damaged cabinets.

Features of outdoor cabinets

- ▲ Degree of protection from IP43 to IP 54
- ▲ Swivel lever locking system for profile half-cylinder, as well as installation safeguards
- ▲ Polycarbonate finished in RAL 7038
- ▲ Green water-based coating available as an option
- ▲ Coating in RAL 7038 available as an option

Features of outdoor pedestals

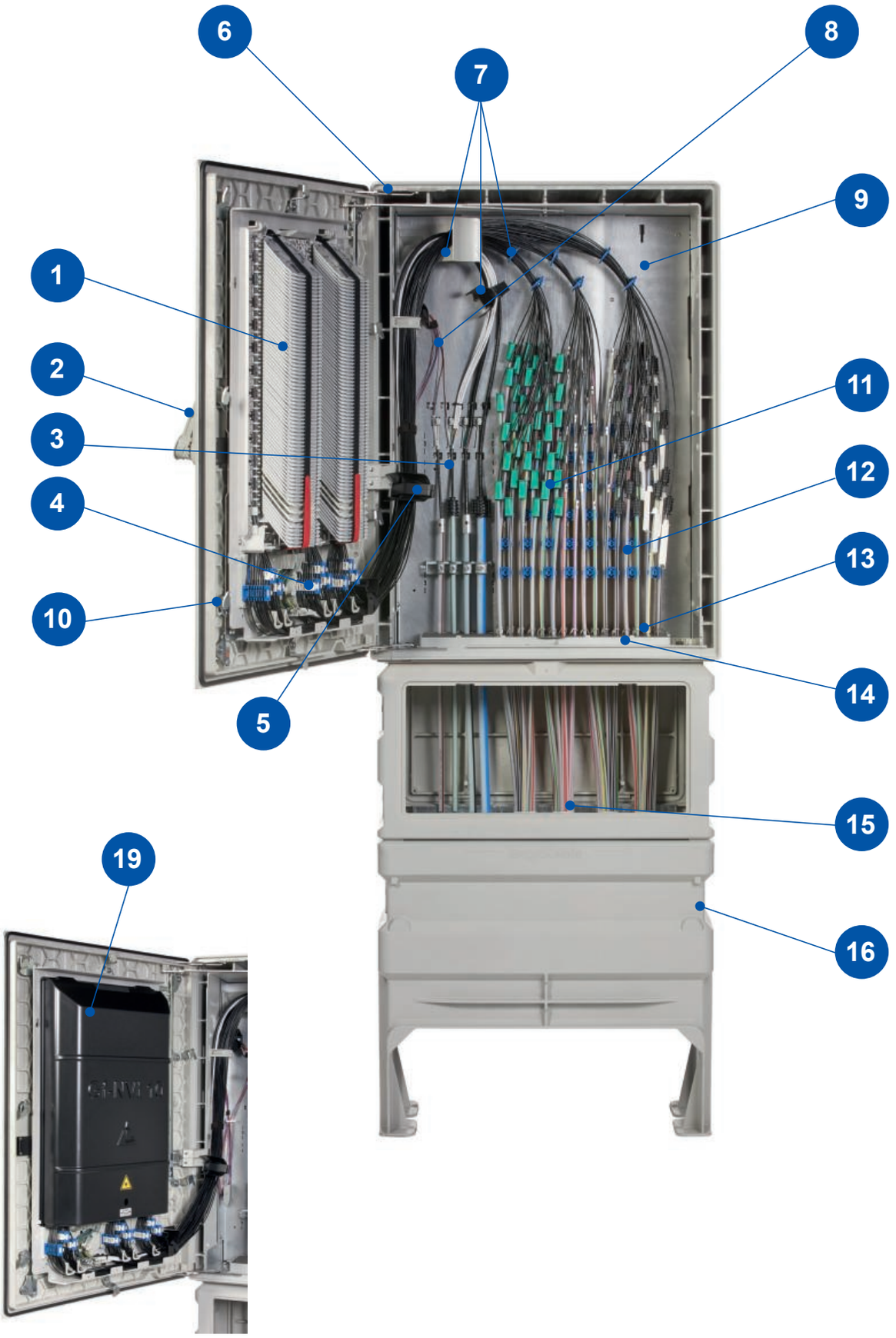
- ▲ Designs from robust unmounted plug-in flat pack pedestals up to the all-rounder with predetermined breaking points and a whole host of technical features
- ▲ Removable front covers for excellent cable accessibility

Fibre distribution cabinets –
Product overview

Designation	CDC type 22 FDC L 2.8	FDC M 2.6	FDC S 2.6
Fibre tray slots	144	72	36
Maximum splices	1728	864	432
Outlet	96 x Ø 7 / Ø 10 mm 60 x Ø 12 mm	48 x Ø 7 / Ø 10 mm 48 x Ø 12 mm	24 x Ø 7 / Ø 10 mm 24 x Ø 12 mm
Inlet	Standard: 4 x Ø 6.5 – 20 mm Up to 12 x Ø 6.5 – 20 mm	Standard: 4 x Ø 6.5 – 20 mm Up to 8 x Ø 6.5 – 20 mm	Standard: 4 x Ø 6.5 – 20 mm Up to 8 x Ø 6.5 – 20 mm
Upper part (W x H x D)	775 x 1050 x 340 mm	455 x 1028 x 273 mm	308 x 914 x 215 mm
Lower part (W x H x D)	754 x 1060 x 310 mm	455 x 975 x 230 mm	308 x 721 x 215 mm

Designation	FDC XL 2.6	FDC XS 2.6
Fibre tray slots	264	6
Maximum splices	3168	72
Outlet	168 x Ø 7 / Ø 10 mm	6 x Ø 7 / Ø 10 mm
Inlet	Standard: 4 x Ø 6.5 – 20 mm Up to 12 x Ø 6.5 – 20 mm	1 x Ø 10 – Ø 12 mm
Upper part (W x H x D)	1128 x 1005 x 332 mm	135 x 505 x 168 mm
Lower part (W x H x D)	1128 x 1045 x 326 mm	135 x 1204 x 100 mm

CDC type 22 FDC L 2.8 –
Construction overview



1 Fibre tray management with mounting panel on housing doors with 2 x 72 = 144 fibre tray slots

2 Door with turning lever, prepared for one or two semi-profile cylinders

3 Strain relief and optional earthing point for optical fibre cables for up to 12 x Ø 6.5 - 20 mm, standard equipment: 4 x optical fibre cables. Core of fibre cable can be fitted on the rear panel of the cabinet or doors

4 Optimised position and improved micro cable organisation (standard) Ø 2.5 - Ø 4 mm

5 NEW: Adaptive cable and protective tube guidance for optimum guidance and protection when opening the door. Cable guide elements to open without complicated threading through

6 NEW: Door stay (opening angle 135°)

7 Cable diverter

8 Option to loop and store uncut bundled loose tube fibres / stowage of excess length of up to 6 m

9 Rear panel

10 NEW: Reinforced forced-entry protection by 7-point locking mechanism etc.

11 Use of commercially available micro-duct gas stops is possible

12 Universal micro-duct pipe management for 96 x Ø 7 / Ø 10 mm (Duo clamp provides for a possible mixture of Ø 7 and Ø 10 mm) or 60 x Ø 12 mm using Duo clamp

13 Duo strain-relief lug designed for Ø 7 mm / Ø 10 mm micro-duct pipes or Ø 12 mm strain-relief lug

14 Base plate for routing and sealing the micro-duct pipes and optical fibre cables, including organisation and individual strain relief of the micro-duct pipes

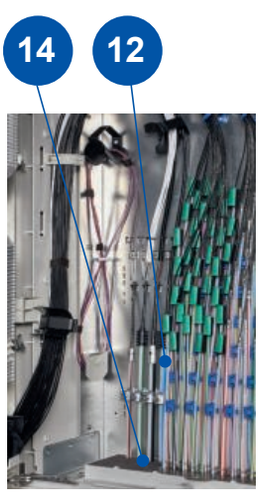
15 Strain relief is possible for micro-duct pipe bundles and inlet cables using U-clamps

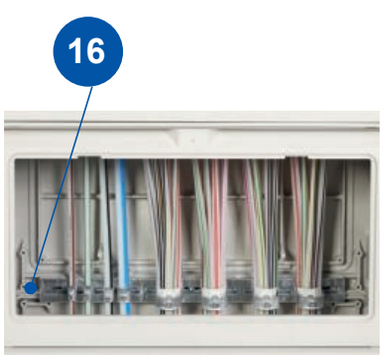
16 Outdoor pedestal EK265/65 with predetermined breaking point

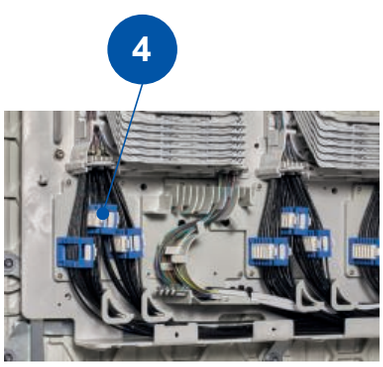
17 Detailed image: optical fibre cable bridge between the rows of E&MMS splice fibre trays

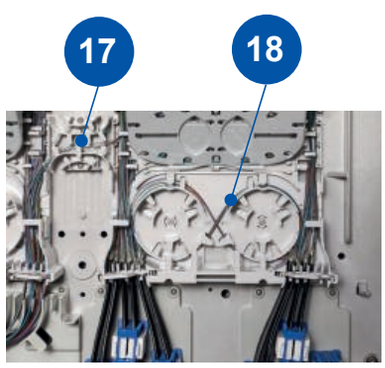
18 Detailed image: end piece with routing option for optical fibres

19 Detailed image: protective cover for tray section









CDC type 22 FDC L 2.8 –
Fibre distribution cabinet

All Langmatz fibre distribution cabinets can be used for Gigabit Passive Optical Network (GPON) and for Point to Point-Ethernet (PtP) technology in optical fibre access networks.

The fibre distribution cabinet CDC type 22 FDC L 2.8 is a veritable all-rounder in our product range. Installation is simple, as the two separate areas for the optical fibre cassettes and the micro-duct pipes are very easy to access. The inside of the door contains the fibre tray system for single and multiple fibre management to distribute and store the optical fibres from the central office to the networked buildings. The inside of the fibre distribution cabinet contains the micro-duct pipe management system for the organised storage of the micro-duct pipes and the entry port and strain relief of the optical fibre main cable from the central office.

The outgoing micro-duct pipes are held securely in the combination of base plate, Duo clamps and strain relief lugs. They are either designed for Ø 7 / 10 mm or Ø 12 mm. The insertion aid enables the micro-duct pipes to be installed quickly and easily.

The outgoing micro cables can be ideally inserted, as the micro-duct pipes can be easily removed from the Duo clamps and so guarantee simple access. Optical fibre cables in micro-duct pipes as well as cables that can be buried underground can be inserted and held in the fibre distribution cabinet in the access area on the left. Just above this is an option to store excess lengths of unused or uncut bundled loose tube fibres (loop function).

Fulfils the criteria of the German National Broadband Funding Programme.

▲ CDC type 22 FDC L 2.8 with pedestal cover without splice cover

CDC type 22 FDC L 2.8

- ▲ 96 x micro-duct pipes with Ø 7 mm or Ø 10 mm and 96 x optical fibre micro cables with Ø 1.3 – Ø 4.0 mm
- ▲ 60 x micro-duct pipes with Ø 12 mm and 60 x optical fibre micro cables with Ø 1.3 – Ø 4.0 mm
- ▲ Universal micro cable organiser for Ø 2.5 – Ø 4.0 mm
- ▲ Optimised cable routing from the cabinet to the doors and simple reconfiguration of additional cables until fully loaded
- ▲ Strain relief for the strength members of the inlet cables on the rear panel of the cabinet or doors is possible
- ▲ Insertion and mounting aid for the simplified insertion of the micro-duct pipes through the sealing plate
- ▲ Up to 12 x micro-duct pipes and mini cables are possible in the access area
- ▲ Improved micro cable routing, thanks to the optimised position of the micro cable organiser

▲ CDC type 22 FDC L 2.8 without pedestal cover with splice cover

Expansion of fibre distribution cabinets

▲ **Access area:**
- Micro-duct pipe/mini cable inlet with fixing and strain relief for up to 12 x micro-duct pipes Ø 6.5 – 20 mm and associated optical fibre cables of up to max. Ø 10 mm is possible (standard: 4 x micro-duct pipes or mini cables)
- Strain relief for the optical fibre cables on the rear panel on the cabinet or door side
- Optimised mini cable routing throughout, from entry port, sealing and strain relief to the splice section
- Base plate for routing and sealing the micro-duct pipes and optical fibre cables
- Organisation and individual strain relief of the micro-duct pipes
- Option to loop and store uncut bundled loose tube fibres
- Option to store up to 6 m excess bundled loose tube fibres

▲ **Outlet area:**
- Micro cable organiser for different diameters:
  1.3 mm
  1.8 mm
  2.5 mm
  2.8 – 3.0 mm
  3.5 mm
  3.8 – 4.00 mm
  2.5 – 4.0 mm
- Micro-duct pipe capacity for 96 x Ø 7 mm / 96 x Ø 10 mm using the Duo clamp organiser or 60 x Ø 12 mm
- Micro-duct pipe management system with DUO strain-relief lugs (Ø 7 mm and Ø 10 mm) or strain-relief lug (Ø 12 mm) for the tool-free organisation and fixing of the outgoing micro-duct pipes
- Use of commercially available micro-duct gas stops is possible

▲ **Optical fibre installation kit:**
- Mounting panel equipped with organiser modules to accommodate E&MMS fibre tray system
- Fibre tray slots for up to 144 splice fibre trays (5 mm) (maximum of 1728 splices) or up to 72 splice fibre trays (10 mm)
- Simple configuration of the splice fibre trays and tool-free replacement is possible
- Protective cover for the splice fibre tray area

▲ Door with fibre management

▲ Inlet and outlet area of the micro-duct pipes on the right of the housing with fibre routing on the left

▲ Pedestal with open cover and micro-duct pipes fitted

Advantages of outdoor cabinets

▲ Outdoor cabinet made of modified polycarbonate (PC)

▲ UV- and weather-resistant, self-extinguishing, environmentally friendly and recyclable

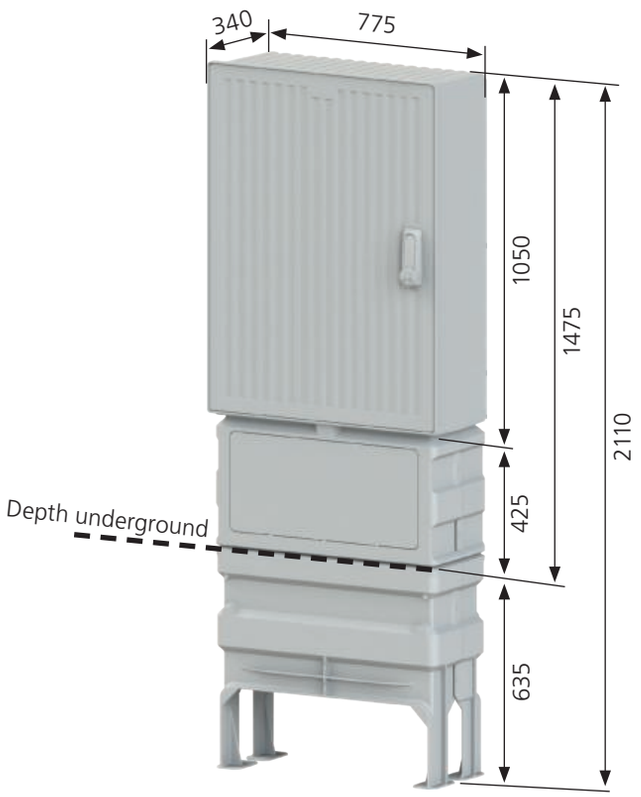
▲ Housing with:
- Door with turning lever, prepared for one or two semi-profile cylinders
- Good access for installation and operation
- Ribbing to prevent poster sticking
- Forced-entry protection safety level according to DIN 47609: T3
- Cable routing into the pedestal from all four sides
- Pedestal with predetermined breaking point (load: >1,500 N)

▲ CDC type 22 FDC L 2.8

Technical data

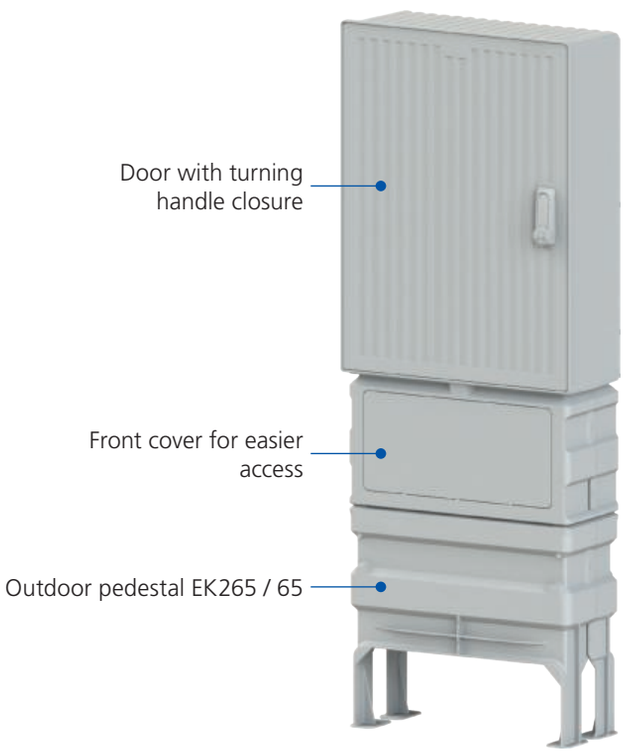
Designation	CDC type 22 FDC L 2.8
Dimensions	Height including pedestal: 2110 mm, width 775 mm, depth 340 mm (with turning handle max. 370 mm)
Weight	Approx. 72 kg empty (pedestal: approx. 19 kg and cabinet top part approx. 53 kg)
Material	Polycarbonate (PC)
Colour	RAL 7038
Protection rating	IP 54
Safety level for forced-entry protection (based on DIN 47609)	T3

Dimensions



▲ Dimensions in mm

Construction



Accessories

- ▲ Labelling plate for the funded configuration
- ▲ E&MMS fibre tray system for single and multiple-fibre management (pack of 6 or 20)
  - Management of up to 12 splices per fibre tray
- ▲ Optical splitter / coupler
  - Available in different configurations and suitable for many applications
- ▲ Various sizes of strain-relief lugs and micro cable organisers
- ▲ Strain relief for the access area, mini cable no. 5 – 12

▲ E&MMS fibre tray

▲ Labelling plate

CDC type 22 FDC L 2.8 96 x Ø 7/10 mm micro-duct pipes Ø 2.5 – 4.0 mm micro cables	Item no. 062450500/500	Base plates / cable fastening

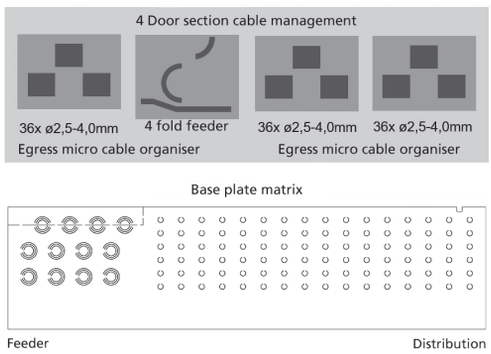
▲ **Inlet for (micro-duct pipes / micro cables with fixing and strain relief):**

- 4 x micro-duct pipes for Ø 10 – 20 mm (standard), extendible to 12 x micro-duct pipes or 4 x mini cables for Ø 6.5 – 10 mm
- 4-fold core of fibre cable strain relief for mini cables Ø 6.5 – 10 mm on the door
- 4-fold core of fibre cable strain relief on the rear panel
- Loop duct
- Excess length storage available
- U-clamps: 2 x B12 and 1 x BK14

▲ **Outlet for (micro-duct pipe fixing and strain relief):**

- Micro cable organiser for Ø 2.5 – Ø 4.0 mm
- 96 micro-duct pipes Ø 7 mm or Ø 10 mm
- Duo strain-relief lugs 96 x Ø 7 / 10 mm

Locking mechanism: Turning lever for 2 x profile half-cylinders
Special accessories: Fastening and strain relief for inlets 5 – 12



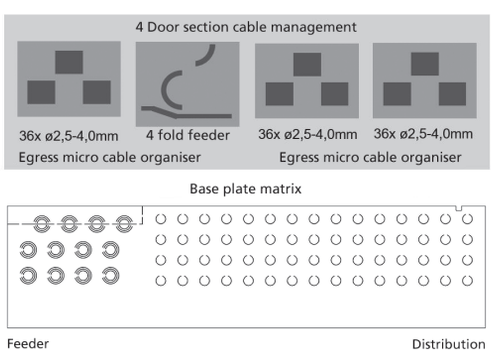
CDC type 22 FDC L 2.8 60 x Ø 12 mm micro-duct pipes Ø 2.5 – 4.0 mm micro cables	Item no. 062450520/500	Base plates / cable fastening

▲ **Inlet for (micro-duct pipes / micro cables with fixing and strain relief):**

- 4 x micro-duct pipes for Ø 10 – 20 mm (standard), extendible to 12 x micro-duct pipes or 4 x mini cables for Ø 6.5 – 10 mm
- 4-fold core of fibre cable strain relief for mini cables Ø 6.5 – Ø 10 mm on the door
- 4-fold core of fibre cable strain relief on the rear panel
- Loop duct
- Excess length storage available
- U-clamps: 2 x B12 and 1 x BK14

▲ **Outlet for (micro-duct pipe organiser and strain relief):**

- Micro cable organiser for Ø 2.5 – Ø 4.0 mm
- 60 micro-duct pipes Ø 12 mm
- Strain-relief lugs 60 x Ø 12 mm
- Locking mechanism: Turning lever for 2 x profile half-cylinders
- Special accessories: Fastening and strain relief for inlets 5 – 12



Outdoor pedestal EK265 2.0 –
For FDC L

With 30 years of experience as a system supplier for outdoor cabinets and outdoor pedestals, Langmatz is a competent and reliable partner. The use of polycarbonate ensures high mechanical strength and lifelong weather resistance. Langmatz recycles using an especially developed process and thus supports a sustainable use of resources.

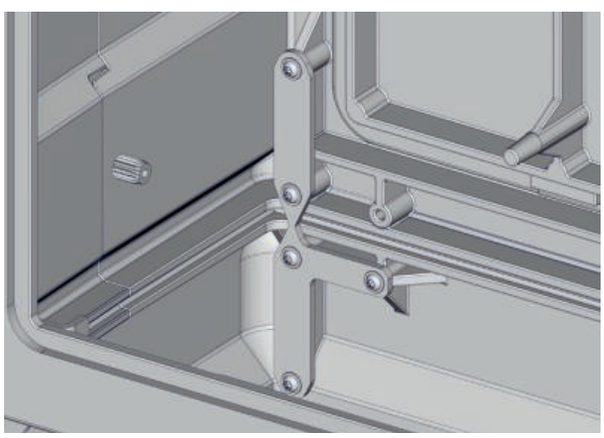
Advantages

- ▲ A defined predetermined breaking point prevents cost-intensive excavation, asphalting or pavement work in the event of accident damage
- ▲ Option to restore the predetermined breaking point
- ▲ Cable/pipe bundle can be inserted from all sides
- ▲ Vertical separation feature enables the pedestal to be installed over existing cables
- ▲ Integrated strain relief rails
- ▲ Tested and approved to Deutsche Telekom guidelines
- ▲ Enlarged inlet space
- ▲ Fast, easy installation

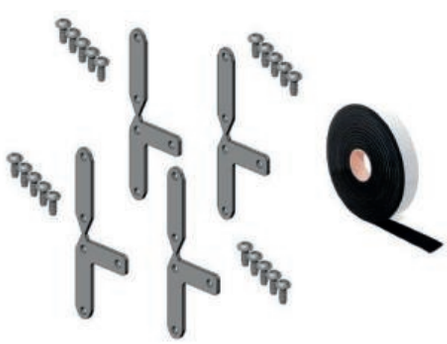
Technical data

Designation	Outdoor pedestal EK265 2.0
Material	Polycarbonate (PC)
Dimensions W x H x D	754 x 1060 x 310 mm
Housing colour	RAL 7038
Defined predetermined breaking point	Included
Use	FDC L | CDC type 82 | CDC type 22

Predetermined breaking point function and retrofit kit

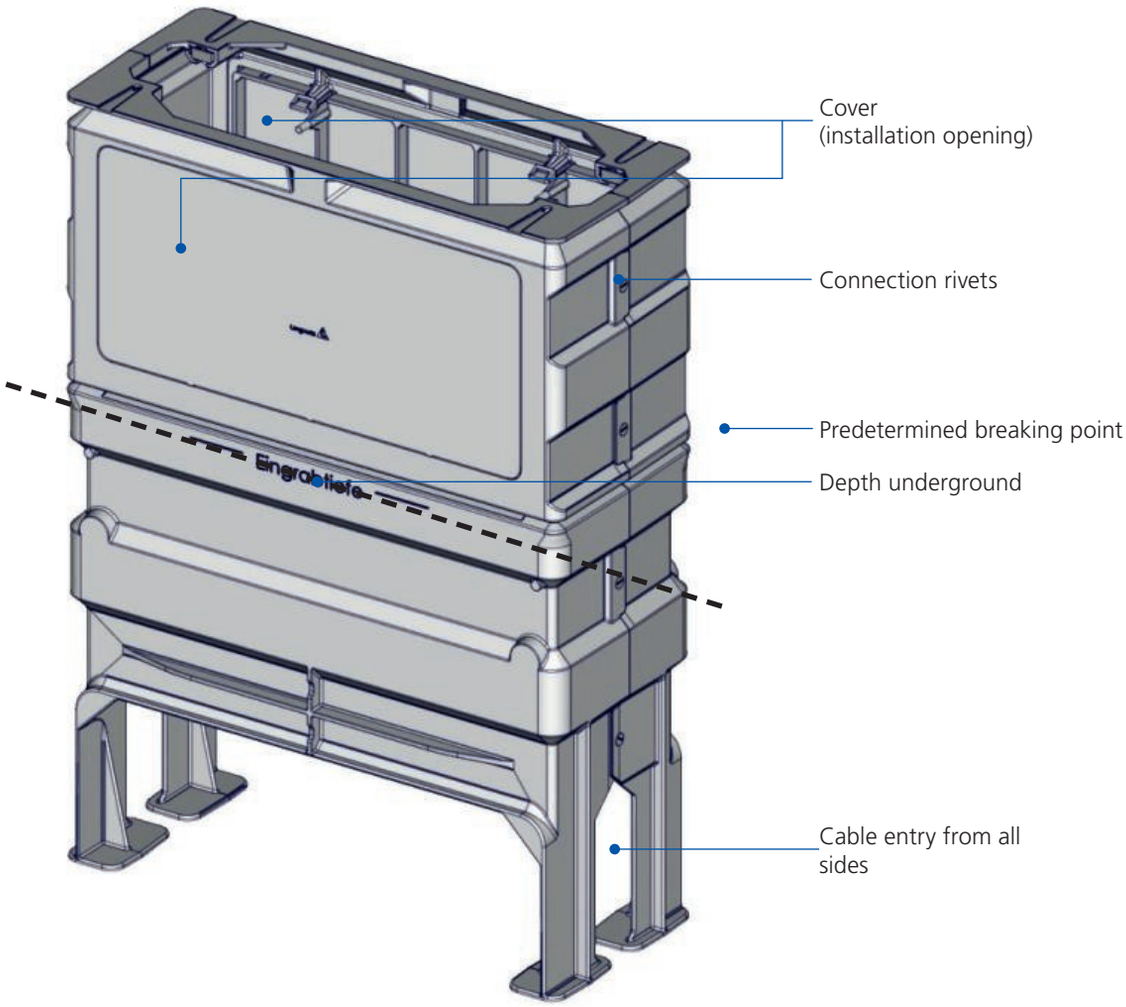


▲ Restored predetermined breaking point in the pedestal



▲ Restored predetermined breaking point in the pedestal
Predetermined breaking point set art. no.: 700879910/002

Construction of the outdoor pedestal



▲ Outdoor pedestal EK265 2.0 Art. no.: 062650130/000

FDC M 2.6 –
Fibre distribution cabinet

All Langmatz fibre distribution cabinets can be used for Gigabit Passive Optical Network (GPON) and for Point to Point-Ethernet (PtP) technology in optical fibre access networks.

The extremely compact design of the fibre distribution cabinet M 2.6 simply sets it apart. It was developed as a cost-optimised solution for situations with limited space to provide fast optical fibre connections in residential areas. The outgoing micro-duct pipes are held securely in the combination of base plate, Duo clamps and strain relief lugs. They are either designed for Ø 7 / 10 mm or Ø 12 mm. The insertion aid enables the micro-duct pipes to be installed quickly and easily.

The outgoing micro cables can be ideally inserted, as the micro-duct pipes can be easily removed from the Duo clamps and so guarantee simple access. Optical fibre cables in micro-duct pipes as well as cables that can be buried underground can be inserted and held in the fibre distribution cabinet in the access area on the left. Just above this is an option to store excess lengths of unused or uncut bundled loose tube fibres (loop function).

The fibre distribution cabinet consists of a complete housing with base plate and pedestal and is available in a series of extension versions.

The FDC M 2.6 meets the criteria of Germany's National Broadband Funding Programme.

▲ FDC M 2.6 open

Advantages of the FDC M 2.6

- ▲ 48 x micro-duct pipes with Ø 7 mm or Ø 10 mm and 48 x optical fibre micro cables with Ø 1.3 mm – Ø 4.0 mm
- ▲ 48 x micro-duct pipes with Ø 12 mm and 48 x optical fibre micro cables with Ø 1.3 mm – Ø 4.0 mm
- ▲ Component for the micro cable organiser for Ø 2.5 – Ø 4.0 mm
- ▲ Insertion aid for the simplified insertion of the micro-duct pipes through the sealing plate
- ▲ Up to 8 x micro-duct pipes and mini cables are possible in the access area (standard: 4 x)
- ▲ Improved micro cable routing, thanks to the optimised position of the micro cable organiser

▲ FDC M 2.6 open without pedestal cover

Expansion of fibre distribution cabinets

▲ **Access area:**
- Micro-duct pipe/mini cable access with fixing and strain relief for up to 8 x micro-duct pipes Ø 6.5 – 20 mm and associated mini cables up to max. Ø 10 mm (standard: 4 x micro-duct pipes or optical fibre cables)
- Optimised micro cable routing throughout, from entry port, sealing and strain relief to the splice section
- Base plate for routing and sealing the micro-duct pipes and optical fibre cables, including organisation and individual strain relief of the micro-duct pipes
- Possible looping and stowage of uncut bundled loose tube fibres / stowage of excess length of up to 6 m

▲ **Outlet area:**
- Micro cable organiser for different diameters:
  1.3 mm
  1.8 mm
  2.5 mm
  2.8 – 3.0 mm
  3.5 mm
  3.8 – 4.0 mm
  2.5 – 4.0 mm
- Micro-duct pipe capacity for 48 x Ø 7 mm / 48 x Ø 10 mm using the Duo clamp organiser or 48 x Ø 12 mm
- Micro-duct pipe management system with DUO strain-relief lugs (Ø 7 mm and Ø 10 mm) or strain-relief lug (Ø 12 mm) for the tool-free organisation and fixing of the outgoing micro-duct pipes
- Use of commercially available micro-duct gas stops is possible

▲ **Optical fibre installation kit:**
- Mounting panel equipped with organiser modules to accommodate E&MMS fibre tray system
- Fibre tray slots for up to 72 E&MMS splice fibre trays (5 mm) (maximum of 864 splices) or up to 36 splice fibre trays (10 mm)
- Simple configuration of the splice fibre trays and tool-free replacement is possible
- Protective cover for the splice fibre tray area

Advantages of outdoor cabinets

▲ Outdoor cabinet made of modified polycarbonate (PC)

▲ UV- and weather-resistant, self-extinguishing, environmentally friendly and recyclable

▲ Front cover with:
- Turning lever closing mechanism prepared for two profile half-cylinders
- Angled so that the cabinet cannot be used as a climbing aid
- Good access for installation and operation
- Ribbing to prevent poster sticking

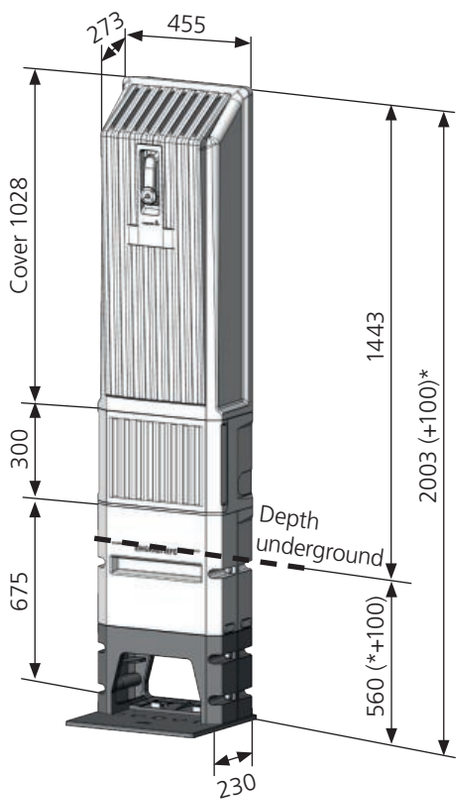
▲ FDC M 2.6 open without pedestal cover

▲ FDC M 2.6 closed

Technical data

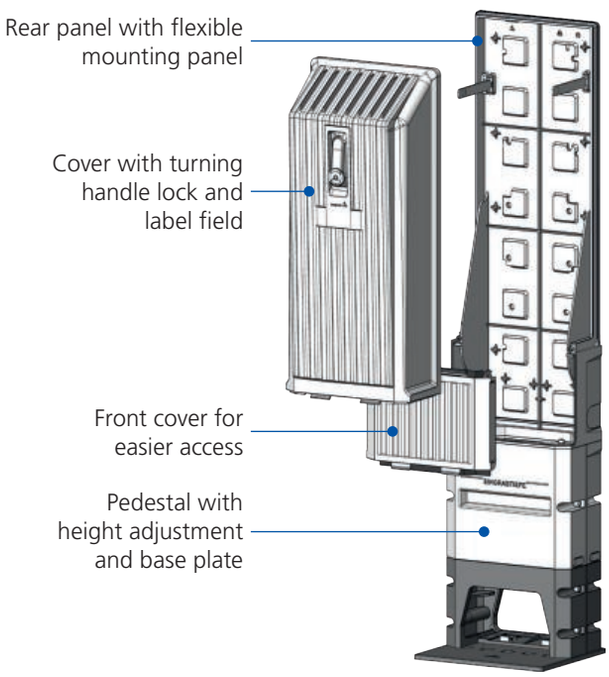
Designation	FDC M 2.6
Dimensions	Height including pedestal: 2003 mm – 2103 mm Width 454 mm Depth 273 mm (with turning handle max. 282 mm)
Weight	Approx. 49 kg empty
Material	Polycarbonate (PC)
Colour	RAL 7038
Protection rating	IP 54
Forced-entry protection	tested to RC2 DIN EN 1627

Dimensions



▲ Dimensions in mm (*due to maximum height adjustment)

Construction



Accessories

- ▲ Labelling plate for the funded configuration
- ▲ E&MMS fibre tray system for single and multiple-fibre management
  - Management of up to 12 splices per fibre tray
- ▲ Optical splitter / coupler
  - Available in different configurations and suitable for many applications
- ▲ Various sizes of strain-relief lugs and micro cable organisers
- ▲ Strain relief bracket for the access area, optical fibre cable no. 5 – 8 (loop option available)

▲ E&MMS fibre tray

▲ Labelling plate

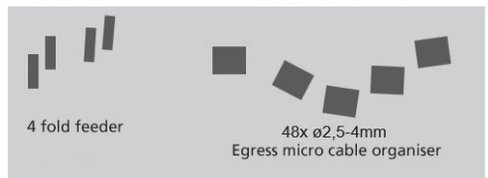
FDC M 2.6 48 x Ø 7 mm or 10 mm micro-duct pipes Ø 2.5 – 4 mm micro cables	Art. no.: 064304002	Base plates / cable fastening

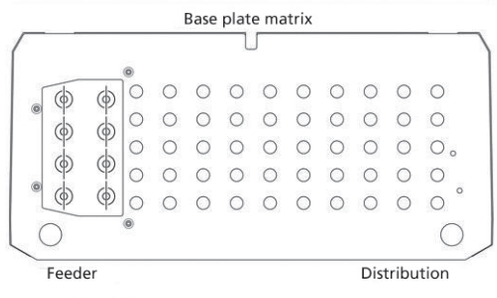
▲ **Inlet for (micro-duct pipes / micro cables with fixing and strain relief):**
- 4 x micro-duct pipes for Ø 10 – 20 mm (standard), extendible to 8 x micro-duct pipes or 4 x mini cables for Ø 6.5 – 10 mm
- 4 x clamping yokes on mounting panel for central core strain relief
- Loop duct
- Excess length storage available

▲ **Outlet for (duo micro-duct pipe organiser and strain relief):**
- Micro cable organiser for Ø 2.5 – 4 mm
- Duo strain-relief lugs 48 x Ø 7 / 10 mm for micro-duct pipes

Locking mechanism: Turning lever for 2 x profile half-cylinders

▲ **Special accessories:**
- Assembly kit: Extension of strain relief 5 – 8 (inlet)
- Earthing assembly





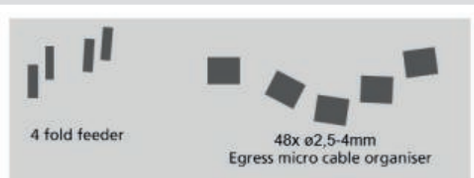
FDC M 2.6 48 x Ø 12 mm micro-duct pipes Ø 2.5 – 4 mm micro cables	Art. no.: 064304003	Base plates / cable fastening

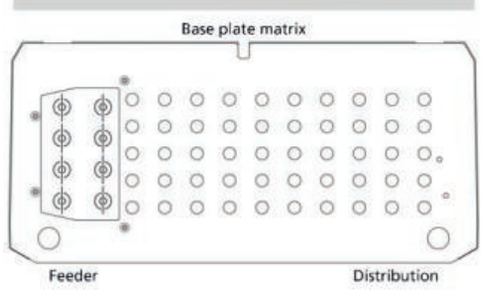
▲ **Inlet for (micro-duct pipes / mini cables with fixing and strain relief):**
- 4 x micro-duct pipes for Ø 10 – 20 mm (standard), extendible to 8 x micro-duct pipes or 4 x mini cables for Ø 6.5 – 10 mm
- 4 x clamping yokes on mounting panel for central core strain relief
- Loop duct
- Excess length storage available

▲ **Outlet for (duo micro-duct pipe organiser and strain relief):**
- Micro cable organiser for Ø 2.5 – 4 mm
- Strain-relief lugs 48 x Ø 12 mm for micro-duct pipes

Locking mechanism: Turning lever for 2 x profile half-cylinders

▲ **Special accessories:**
- Assembly kit: Extension of strain relief 5 – 8 (inlet)
- Earthing assembly





FDC S 2.6 –
Fibre distribution cabinet

All Langmatz fibre distribution cabinets (FDC) can be used for Passive Optical Network (PON) and for Point to Point-Ethernet (PtP) technology in the optical fibre access network.

The FDC S 2.6 was designed for use in suburbs and rural areas in which the network connection of single-family homes and apartment buildings is primarily planned. The fibre distribution cabinet is designed for 24 micro-duct pipes with a diameter of 7 mm, 10 mm or 12 mm. DUO clamps and DUO strain relief lugs can be used to accommodate a mixture of diameters.

The outgoing micro-duct pipes are held securely in the combination of base plate, Duo clamps and strain relief lugs. They are either designed for 7/10 mm or 12 mm. The insertion aid enables the micro-duct pipes to be installed quickly and easily.

The outgoing micro cables can be ideally inserted, as the micro-duct pipes can be easily removed from the Duo clamps and so guarantee simple access. Optical fibre cables in micro-duct pipes as well as cables that can be buried underground can be inserted and held in the fibre distribution cabinet in the access area on the left. Just above this is an option to store excess lengths of unused or uncut bundled loose tube fibres (loop function).

The FDC S 2.6 meets the criteria of Germany's National Broadband Funding Programme.

▲ FDC S 2.6 without cover with open cabinet cover

Advantages of the FDC S 2.6

- ▲ 24 x micro-duct pipes with Ø 7 mm or Ø 10 mm and 24 x optical fibre micro cables with Ø 1.3 mm to Ø 4.0 mm
- ▲ 24 x micro-duct pipes with Ø 12 mm and 24 x optical fibre micro cables with Ø 1.3 mm to Ø 4.0 mm
- ▲ Component for the micro cable organiser for Ø 2.5 – Ø 4.0 mm
- ▲ Insertion aid for the simplified insertion of the micro-duct pipes through the sealing plate
- ▲ Up to 8 x micro-duct pipes and mini cables are possible in the access area (standard = 4)
- ▲ Improved micro cable routing, thanks to the optimised position of the micro cable organiser

▲ FDC S 2.6 without cover

▲ **Access area:**
- Micro-duct pipe/mini cable access with fixing and strain relief for up to 8 x micro-duct pipes Ø 6.5 – 20 mm and associated mini cables up to max. Ø 10 mm (standard: 4 x micro-duct pipes or mini cables)
- Optimised micro cable routing throughout, from entry port, sealing and strain relief to the splice section
- Base plate for routing and sealing the micro-duct pipes and optical fibre cables, including organisation and individual strain relief of the micro-duct pipes
- Possible looping and stowage of uncut bundled loose tube fibres / stowage of excess length of up to 6 m

▲ **Outlet area:**
- Micro cable organiser for different diameters:
  1.3 mm
  1.8 mm
  2.5 mm
  2.8 – 3.0 mm
  3.5 mm
  3.8 – 4.00 mm
  2.5 – 4.0 mm
- Micro-duct pipe capacity for 24 x Ø 7 mm / 24 x Ø 10 mm using the Duo clamp organiser or 24 x Ø 12 mm
- Micro-duct pipe management system with DUO strain-relief lugs (Ø 7 mm and Ø 10 mm) or strain-relief lug (Ø 12 mm) for the tool-free organisation and fixing of the outgoing micro-duct pipes
- Use of commercially available micro-duct gas stops is possible

▲ **Optical fibre installation kit:**
- Mounting panel equipped with organiser modules to accommodate E&MMS fibre tray system
- Fibre tray slots for up to 36 E&MMS splice fibre trays (5 mm) (maximum of 432 splices) or up to 18 splice fibre trays (10 mm)
- Simple configuration of the splice fibre trays and tool-free replacement is possible
- Protective cover for the splice fibre tray area

▲ FDC S 2.6 open

Advantages of outdoor cabinets

▲ Outdoor cabinet made of modified polycarbonate (PC)

▲ UV- and weather-resistant, self-extinguishing, environmentally friendly and recyclable

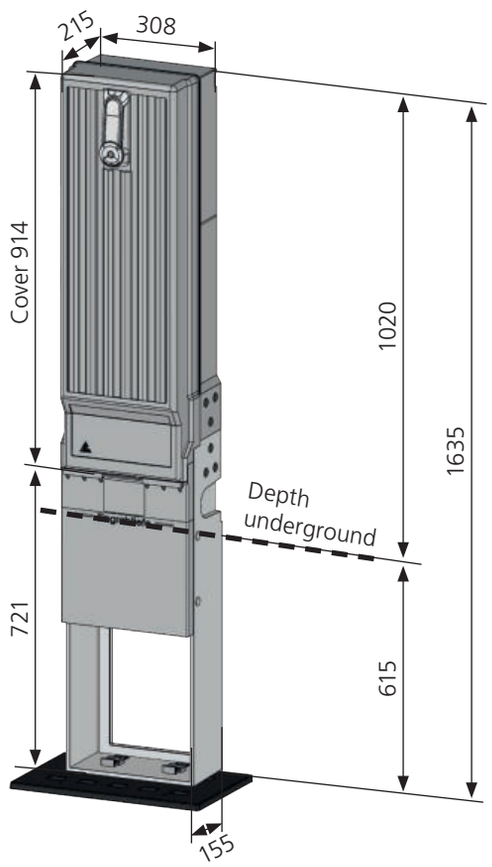
▲ Front cover with:
- Turning lever closing mechanism prepared for two profile half-cylinders
- Good access for installation and operation
- Ribbing to prevent poster sticking

▲ FDC S 2.6 closed

Technical data

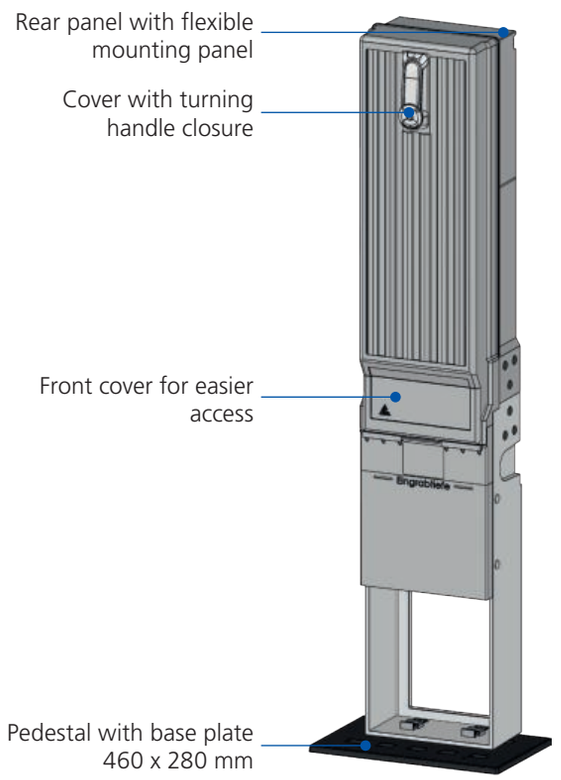
Designation	FDC S 2.6
Dimensions	Height including pedestal: 1635 mm, width 308 mm Depth 215 mm (with turning lever max. 248 mm)
Weight	Approx. 24 kg
Material	Polycarbonate (PC)
Colour	RAL 7038
Protection rating	IP 54
Forced-entry protection	tested to RC2 DIN EN 1627

Dimensions



▲ Dimensions in mm

Construction



Accessories

- ▲ Labelling plate for the funded configuration
- ▲ Fibre tray system for single and multiple-fibre management
  - Management of up to 12 splices per fibre tray
- ▲ Optical splitter/coupler
  - Available in different configurations and suitable for many applications
- ▲ Various sizes of strain-relief lugs and micro cable organisers
- ▲ Strain relief bracket for the access area, mini cable no. 5 – 8 (loop option is available)

▲ E&MMS fibre tray

▲ Labelling plate

FDC S 2.6
24 x Ø 7 mm or 10 mm micro-duct pipes Ø 2.5 – 4 mm micro cables

Art. no.:
060302031

Base plates / cable fastening

▲ **Inlet for (micro-duct pipes / mini cables with fixing and strain relief):**

- 4 x micro-duct pipes for Ø 10 – 20 mm (standard), extendible to 8 x micro-duct pipes or 4 x mini cables for Ø 6.5 – 10 mm
- 4 x clamping yokes on mounting panel for central core strain relief
- Loop duct
- Excess length storage available

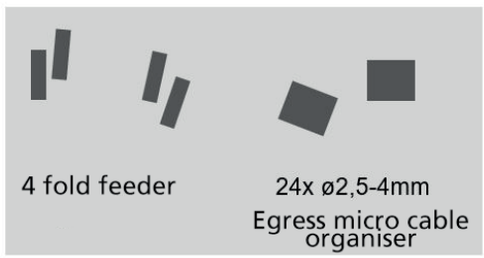
▲ **Outlet: Duo micro-duct pipe organiser and strain relief for:**

- Micro cable organiser for Ø 2.5 – Ø 4 mm
- Duo strain-relief lugs 24 x Ø 7 / Ø 10 mm for micro-duct pipes

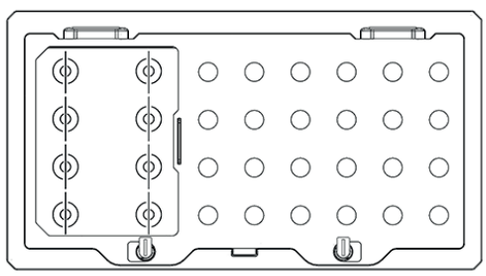
Locking mechanism: Turning lever for 2 x profile half-cylinders

▲ **Special accessories:**

- Assembly kit: Extension of strain relief 5 – 8 (inlet)



Base plate matrix



Feeder Distribution

FDC M 2.6
24 x Ø 12 mm micro-duct pipes Ø 2.5 – 4 mm micro cables

Art. no.:
060302032

Base plates / cable fastening

▲ **Inlet for (micro-duct pipes / mini cables with fixing and strain relief):**

- 4 x micro-duct pipes for Ø 10 – 20 mm (standard), extendible to 8 x micro-duct pipes or 4 x mini cables for Ø 6.5 – 10 mm
- 4 x clamping yokes on mounting panel for central core strain relief
- Access loop with excess storage

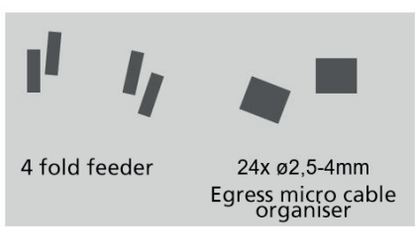
▲ **Outlet for (duo micro-duct pipe organiser and strain relief):**

- Micro cable organiser for Ø 2.5 – Ø 4 mm
- Strain-relief lugs 24 x Ø 12 mm for micro-duct pipes

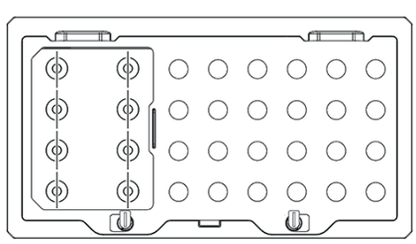
Locking mechanism: Turning lever for 2 x profile half-cylinders

▲ **Special accessories:**

- Assembly kit: Extension of strain relief 5 – 8 (inlet)



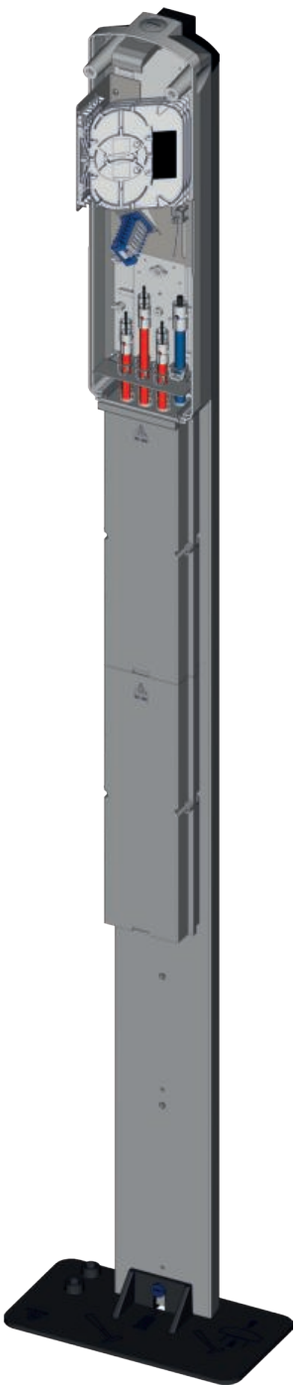
Base plate matrix



Feeder Distribution

FDC XS 2.6 –
Fibre distribution cabinet

The XS fibre distribution cabinet was designed for universal use as an outdoor optical fibre distribution system for FTTH/B expansion areas to enable optical fibre connections to be rapidly provided in remote areas as well. It is a proven small cabinet that also blends perfectly into the townscape or cityscape.



Benefits of Langmatz fibre distribution cabinets

▲ **Uses**
- Designed for Gigabit Passive Optical Network (GPON) and Point to Point-Ethernet (PtP) technology in optical fibre access networks

▲ **Flexibility down to the last detail**
- New component for micro cable organisation: 6 x OF cables with Ø 2.5 – 4.0 mm
- Various micro-duct pipe diameters both in the inlet and also in the outlet

▲ **Stability, security and safety – during installation and in operation**
- Strain relief option for the OF cable in the inlet area
- Improved micro cable routing, thanks to the optimised position of the micro cable organiser
- Ultra-compact design
- Excellent UV and weather resistance

Expansion options for fibre distribution cabinets

▲ **Inlet area**
- Micro-duct pipe / cable inlet with fixing and strain relief for 1 x micro-duct pipe with Ø 7, 10 or 12 mm and associated OF cables
- Optimised micro cable routing throughout, from the entry port to the splice section
- Base plate for routing and sealing the micro-duct pipes and optical fibre cables, including organisation and individual strain relief of the micro-duct pipes

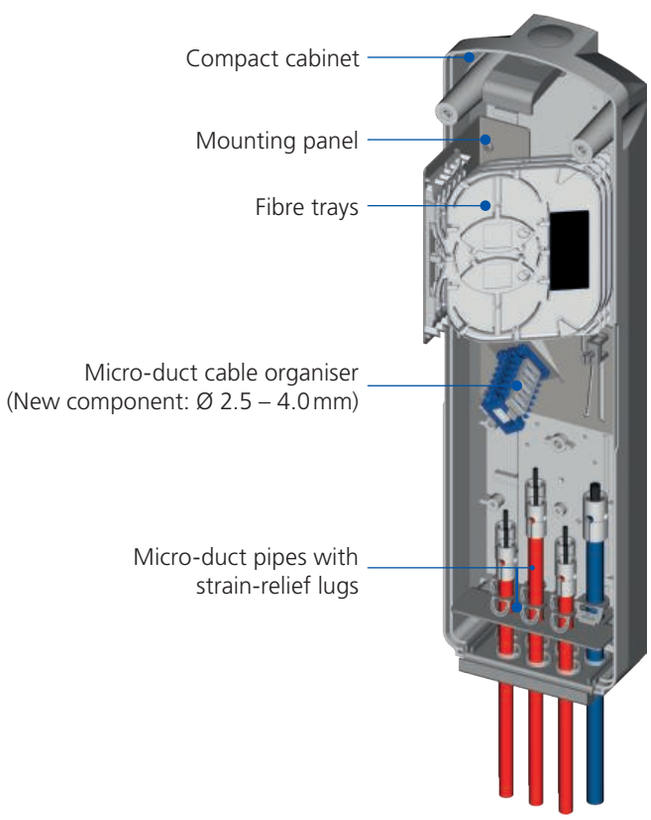
▲ **Outlet area**
- Organisation of micro cables with Ø 2.5 – 4.0 mm
- Micro-duct pipe capacity for 6 x Ø 7 mm / 6 x Ø 10 mm
- Micro-duct pipe management system with DUO strain-relief lugs (Ø 7 mm and 10 mm) for the tool-free organisation and fixing of outgoing micro-duct pipes
- Use of commercially available micro-duct gas stops is possible

▲ **Optical fibre installation kit**
- Mounting panel equipped with an organiser module to accommodate up to six E&MMS fibre tray systems
- Fibre tray slots for up to 6 E&MMS splice fibre trays with 5 mm (maximum 36 splices) or up to 3 splice fibre trays with 10 mm
- Simple configuration of the splice fibre trays and tool-free replacement is possible

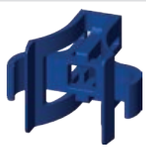
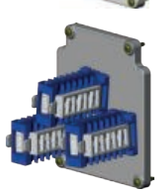
Technical data

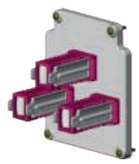
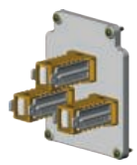
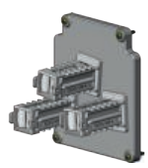
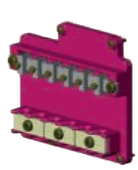
Designation	FDC XS 2.6
Dimensions (W x H x D)	120 x 140 x 505 mm
Weight of basic kit	Approx. 2.1 kg
Cabinet material	Polycarbonate (PC)
Housing colour	RAL 7023 concrete grey
Protection rating	IP 54, protection class II
Impact resistance	IK 10
Closing mechanism	Prepared for profile half-cylinders
Temperature range	-30°C to +70°C
Fire protection class	UL94 V-2
Inlet cable / inlet micro-duct pipe	1x Ø 7, 10, 12 mm
Inlet cable / inlet micro-duct pipe	6x Ø 2.5 – 4 mm 6x Ø 7, 10 mm
Number of fibres	Standard: maximum 72 fibres
Article number of basic kit	062238010 with stand and cable duct 062238011 without stand and cable duct

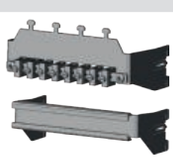
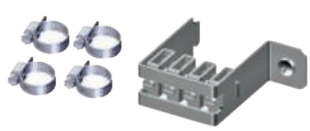
Detailed view of cabinet



Accessories / spare parts –
Fibre distribution cabinet

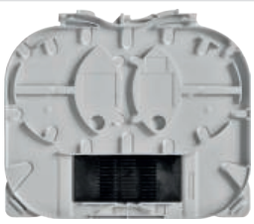
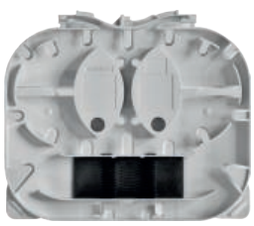
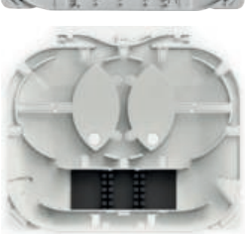
Designation	Art. no.:/ Packaging unit	Product
Duo micro-duct pipe clamps, each for two micro-duct pipes		
Ø 7 – 12 mm	062458000/012 12 x	
Ø 10 – 14 mm	062458001/012 12 x	
Micro-duct pipe clamps, each for one micro-duct pipe		
Ø 7 mm	062450866/011 1 x	
Ø 10 mm	062450875/011 1 x	
Ø 12 mm	062450867/011 1 x	
Outlet mounting panel / micro cable organiser including fastening screws, with organiser, screw connection from the front or rear for:		
48 optical fibre micro cables / bundled loose tube fibres Ø 1.3 mm	062450991/011 1 x	
48 optical fibre micro cables / bundled loose tube fibres Ø 1.8 mm	062450782/011 1 x	
36 optical fibre micro cables / bundled loose tube fibres Ø 2.5 mm	062450732/011 1 x	
36 optical fibre micro cables / bundled loose tube fibres Ø 2.5 – 4 mm	062459022/011 1 x	

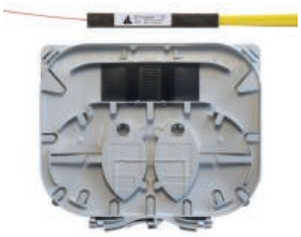
Designation	Art. no.:/ Packaging unit	Illustration
30 optical fibre micro cables / bundled loose tube fibres Ø 2.8 – 3 mm	062450761/011 1 x	
30 optical fibre micro cables / bundled loose tube fibres Ø 3.5 mm	062450984/011 1 x	
30 optical fibre micro cables / bundled loose tube fibres Ø 3.8 – 4 mm	062450749/011 1 x	
30 optical fibre micro cables / bundled loose tube fibres Ø 4.4 – 4.6 mm	062459044/011 1 x	
Inlet mounting panel for the FDC L 2.6 including fastening screws, screw connection from the front or rear. For mini and standard cables, with clamping yoke for core of fibre cable, and inlet for:		
4-fold up to 4 mini cables Ø 6.5 mm	062450733/011 1 x	
6-fold up to 6 mini cables Ø 6.5 mm	062450762/011 1 x	
4-fold up to 4 mini cables Ø 10 mm or 4 corrugated tubes max. Ø 13.5 mm or 4 x 6 protective tubes Ø 4 mm	062459018/011 1 x	
Inlet/outlet (combined) mounting panel for the FDC L 2.6 with strain relief for core of fibre cable		
4-fold up to 4 mini cables Ø 6.5 mm with organiser and mounting for 20 optical fibre micro cables/bundled loose tube fibres Ø 3.8 – 4.0 mm	062450565/011 1 x	
4-fold up to 4 mini cables Ø 6.5 mm with organiser and mounting for 24 optical fibre micro cables / bundled loose tube fibres Ø 2.5 mm	062450904/011 1 x	

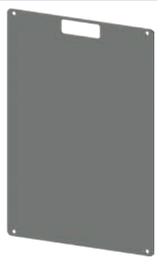
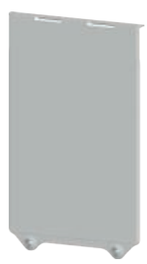
Designation:	Art. no. / Packaging unit	Illustration
Protective tubing clip for fixing 6 protective tubes		
Ø 4 mm	062450932/031 Packaging unit: 30 x	
Protective tube for bundled loose tube fibres or fibres		
Ø 4 / Ø 3 mm (external diameter / internal diameter)	062450990E (Length: 50 m)	
Ø 13 / 10 mm (external diameter / internal diameter)	700838355 (Length: 50 m) including 50x cable ties	
Strain relief for use in the FDCs Strain-relief lug		
Micro-duct pipe Ø 12 mm mono	700744729/011 10 x	
Micro-duct pipe Ø 7 / 10 mm duo	700744795/024 24 x	
Extension of the micro-duct pipe / cable strain relief in the pedestal (U clamps not included). for use in the pedestal EK265/65		
Width 105 mm	062650504/011 1 x	
Width 150 mm	062650502/011 1 x	
Width 180 mm	062650503/011 1x	
Extension of the micro-duct pipe / cable core of fibre cable strain relief in the inlet area for:		
FDC L 2.8 for inlets 5 – 12	062458014 1 x	
EK430 FDC M 2.6 for inlets 5 – 8	700885941E 1 x	
EK30 FDC S 2.6 for inlets 5 – 8	700885940E 1 x	

Designation:	Art. no. / Packaging unit	Illustration
Bracket for fibre tray block		
to accommodate fibre trays	700731000/012 12 x	
Fastening set		
to fix the optical fibre cables (for the Corning system)	700740400/012 2 sets each 16 x	
Retaining clip for cable inlet	700885701 16 x	
Patch panel for installation in the FDCs including mounting materials, without couplers		
6 x LC duplex or 6 x SC simplex or 6 x E2000 couplers Populates 12 fibre tray slots	700765400 1 x	
26 x LC duplex or 26 x SC simplex or 26 x E2000 couplers Populates 35 fibre tray slots	062450504E 1 x	
39 x LC duplex or 39 x SC simplex or 39 x E2000 couplers Populates 35 fibre tray slots	062459041 1 x	

Designation:	Art. no. / Packaging unit	Illustration
Empty housing for the FDC L 2.8 (for housing replacement)		
Polycarbonate, (W x H x D) 755 x 1050 x 340 mm, including door with swivel handle for two profile half-cylinders, surface painted in RAL 7038, includes accessories kit with door hinges and door stay	062450501/510 1 x	
Pedestal EK265 for FDC L		
Polycarbonate, (W x H x D) 754 x 1060 x 310 mm with predetermined breaking points for FDC L CDC type 82 and CDC type 22, surface painted in RAL 7038including C-DIN rail for pipe bundle including front cover without ventilation	062650130/000 1 x	
U-clamp for FDC L with counter-trough for strain relief		
Clamping range Ø 6 – 12 mm Clamping range Ø 8 – 14 mm Clamping range Ø 12 – 16 mm	062450736/001 (1 x each) 062450737/001 (1 x each) 062450771/001 (1 x each)	
Clamping range Ø 34 – 40 mm pipe bundle on C-DIN rail in the pedestal 84	062450772/001 (1 x each)	
Clamping range Ø 42 – 46 mm pipe bundle on C-DIN rail in the pedestal 84	062650084/001 (1 x each)	
Clamping range Ø 58 – 64 mm on C-DIN rail in the pedestal	062450772/002 (1 x each)	
Earthing kit for the FDC L 2.8		
to earth the rear panel (3-fold)	700886900 1 x	
Earthing kit for the FDC M 2.6		
to earth the rear panel (1-fold)	064300551 1 x	

Designation:	Art. no. / Packaging unit	Illustration
Corning E&MMS fibre trays Multiple-fibre management		
5 mm (1 slot) for crimp splice protector 12-fold Capable of accommodating 1 coupler/splitter	700734600 6 x or: 700734601/020 20 x	
10 mm (2 slots) for crimp splice protector 12-fold Capable of accommodating 1 coupler/splitter	700734610 3 x or: 700734611/010 10 x	
10 mm (2 slots) for a flangeless SC coupler or a flangeless LC duplex coupler and for crimp splice protector 2-fold, capable of accommodating 1 coupler/splitter. **Includes LC duplex coupler**	700734635E 1 x	
10 mm (2 slots) for a flangeless SC coupler or a flangeless LC duplex coupler and for crimp splice protector 2-fold, capable of accommodating 1 coupler/splitter. **Excludes LC duplex coupler.**	700736480 1 x	
5 mm (1 slot) for heat shrink splice protector 12-fold	700734620 6 x	
10 mm (2 slots) for heat shrink splice protector 12-fold Capable of accommodating 1 coupler/splitter	700734630 3 x	
Corning E&MMS fibre trays Single fibre management		
5 mm (1 slot) for crimp splice protector 4-fold with coupler mount	700734640 6 x	

Designation:	Art. no. / Packaging unit	Illustration
Corning E&MMS fibre trays with coupler Multiple-fibre management – 10 mm (2 slots)		
Coupler 2:4 Coupler 1:8 Coupler 1:32 Coupler 2:16 Coupler 2:32 Other sizes on request	062450486 (1 x) 062450121 (1 x) 062450120 (1 x) 062450488 (1 x) 062450487 (1 x)	
Micro-duct pipe labelling Protection and labelling of micro-duct pipes		
Micro-duct pipe Ø 5, 7, 10, 12 mm Micro-duct pipe Ø 14, 16, 20 mm	062450787 100 x 062450829/050 50 x	
Transparent cover for micro-duct pipe labelling		
Labelling of micro-duct pipes. Suitable for all sizes.	062450788 100 x	
Insertion and mounting aid For the simplified routing of the micro-duct pipes in the foam sealing block of the outlet area.		
Ø 7, 10, 12 mm	062450469 1 set	

Designation:	Art. no. / Packaging unit	Illustration
Broadband funding label - unprinted Labels can be printed by Langmatz if a print template is supplied.	1x	
for aluminium CDC type 22 FDC L 2.8 (A3 label)	062459082	
for polycarbonate CDC type 82 FDC L 2.6 (A3 label)	062450994	
for aluminium EK430 FDC M 2.6 (A3 label)	700866792	
for aluminium FDC S 2.6 (A3 label)	060300700	

Langmatz

Optical fibre building cable & pipe entry system

Maximum possible safety

Optical fibre building cable & pipe entry system –
Together we are bringing high-speed internet into every home

The internet is an essential part of our everyday life; it is literally our gateway to the world. It is therefore clear that the internet connection of the future must be fast, modern and reliable. Builders, however, expect not only maximum performance, but also an affordable solution. You cannot go wrong with our optical fibre building cable & pipe entry system: we offer an uncompromising and economical solution.

Whether with or without a cellar, constructed in concrete, bricks or hollow blocks.

When faced with the challenge of finding an answer to every developer's requirement, you will find that we have the perfect solution for every eventuality. We also supply the right sealing technology for all common masonry – easy to install and always securely sealed.

DIN 18533 – The new requirements for optical fibre entry ports.

We build on proven technology with our new generation of optical fibre entry ports while simultaneously setting new standards in terms of safety and flexibility. If nothing else, the advantages of our proven resin injection system are convincing: no matter in which wall, the building cable & pipe entry systems always fit and seal reliably. Our VarioPipe® optical fibre building cable & pipe entry system meets all the building sealing requirements of DIN 18533. Thanks to its movable flange, it can even be used for inclined installation and without restoring the external sealing (plastic-modified bitumen coating/PMBC) applied. Added to this is its space-saving design, which makes the VarioPipe optical fibre building cable & pipe entry system suitable for all wall thicknesses from 200 mm. All that is needed for installation is a hole measuring Ø 25 – 26 mm and a minimal foundation pit. The advantage for you: lower costs for civil engineering work.

EK459 VarioPipe –
Optical fibre building cable & pipe entry system

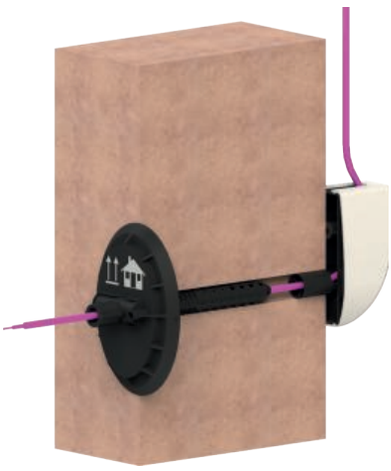
The VarioPipe optical fibre building cable & pipe entry system was developed specifically for the insertion of micro-duct pipes into buildings and through building walls to connect subscribers to the optical fibre network. The building cable & pipe entry system can also be used with other media cables, such as copper telecommunication cables or oval cables, and is suitable for all common wall types, including waterproof concrete, bricks or hollow blocks. The foam-fill principle along the drill channel and the media cable guarantees absolute seal tightness.

▲ Inclined installation

Advantages

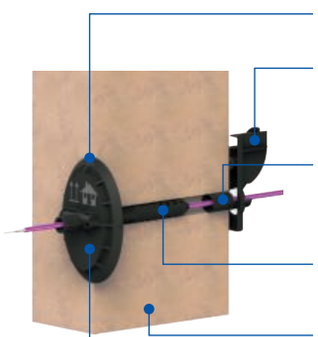
▲ **Outstanding flexibility**
- Horizontal or inclined installation up to 45°(continuous)
- Quick and easy installation in just a few minutes
- Secure hold of the foam pipe in the hole thanks to clamping ribs
- Optimum distribution of the sealing foam in any situation
- Inexpensive installation thanks to minimal foundation pit at the external wall
- Suitable for all wall thicknesses from 200 mm
- Moulded dust protection cap for different diameters

▲ **Maximum possible safety**
- Meets the requirements of the new DIN 18533
- Reliable sealing through expanding 2-component resin
- Sealing prevents foam from escaping on inside of building
- Secure hold of the foam pipe in the hole thanks to clamping ribs
- Inner bend radius limit R60 (mm) with fastener for different diameters
- Gas- and water-pressure-tight up to 1 bar according to DIN 18533 W1.1-E, W1.2-E, W2.1-E
  - Waterproof concrete stress class 1 (DAfStb 2017)
  - Waterproof concrete stress class 2 (DAfStb 2017)



▲ Installed straight with cover

Construction



Universal seal for media cable 1 x Ø 6–13 mm (micro-duct pipe, cable, oval cable 4/8) or 2 x Ø 7 mm

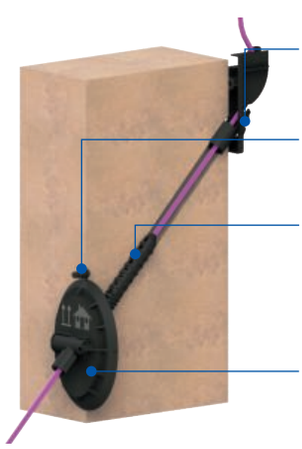
Radius limiter

Inner part with seal to prevent the escape of foam and radius limiter

Foam pipe with swivelling axis and dowel ribs for hole Ø 25 – 26 mm

Wall thickness from 200 mm

Oval outside flange with swivelling axis and filling opening for expansion resin



Inner part with screw-on sleeve and dowel function

Dust protection cap for micro-duct pipes Ø 7, 10 and 12 mm

Foam pipe for optimum foam guidance even with hollow blocks

Oval outside flange to maintain minimum overlapping with inclined installation

Optical fibre building cable & pipe entry system products

	VarioPipe optical fibre building cable & pipe entry system (without resin)	Optical fibre building cable & pipe entry system (with resin)	Expanding 2-component resin for the VarioPipe optical fibre building cable & pipe entry system
Article number	094592001	094592003	700699560
Description	Each packaging unit contains 12 items including expanding 2-component resin	Each packaging unit contains 18 items without expanding 2-component resin	Packaging unit = 18 x

Technical data

Designation	EK459 - VarioPipe optical fibre building cable & pipe entry system
Weight per building cable & pipe entry system	Approx. 150 g + 100 ml of expanding 2-component resin (in a cartridge)
Outside flange material dimensions	Polyethylene (PE) 173 x 125 x 30 mm
Foam pipe material Dimensions	Polyamide (PA) Ø 25 mm x 225 mm
Inner part material Dimensions	Acrylonitrile butadiene styrene (ABS) 131 x 50 x 60 mm
Seal Material Dimensions	Ø 6 – 13 mm Thermoplastic elastomer (TPE) Ø 28 mm x 26 mm
Seal Material Dimensions	2 x Ø 7 mm Polyethylene (PE) Ø 28 mm x 42 mm
Installation position	Up to 45° continuously
Media cable assignment	Ø 6-13 mm | Alternatively 2x Ø 7 mm
Gas and pressurised water-tight	1 bar
Required wall thicknesses	≥ 200 mm
Packaging unit	12 x
Packaging weight Dimensions	Approx. 6 kg 590 x 240 x 270 mm

Accessories

Designation	Cover for EK459 VarioPipe optical fibre building cable & pipe entry system
Material	Polycarbonate (PC) with matt finish
Colour	RAL 9016 Traffic white
IK degree of shock resistance	IK 05
Article number	094592020/012
Packaging unit	12 x

▲ Cover for inner part

▲ Inner part

Langmatz

Optical distribution and termination boxes

Simple optical fibre management

Optical distribution and termination boxes –
Easy to install and flexible down to the last detail

Langmatz now has a selection of optical distribution and termination boxes (ONT) in different sizes and with different features in its product range to provide system solutions for FTTB/H optical fibre expansion. The components form fundamental elements of the optical fibre architecture as they connect the network provider's cable to the building network at the building entry point. Langmatz optical distribution and termination boxes are accommodated in a sturdy and protected polycarbonate housing with IP 54 degree of protection. They are suitable for the transition to customer networks, for single-family homes or multiple-family dwellings as well as for companies, and can be used with plug connections, fusion splice connections and couplers.

They are designed for the easy installation, mounting, routing and commissioning of sophisticated optical fibre technology for users. Great emphasis has also been placed by Langmatz on excellent flexibility down to the last detail. Langmatz optical distribution and termination boxes are quality products that combine innovative as well as proven and tested features.

Optical distribution and termination boxes –
Product overview

ONT	Article number	Splices	Coupler section	Inlet	Dimensions (W x H x D)
Size S	066601100 (Crimp splice protector) 066601100/050 (Packaging unit = 50x)	12	5 x LC duplex (ONT) 3 x LC duplex (ONT) 3 x SC simplex Cable outlet with strain relief	1 x Ø 5, 7, 10 mm and 2 x Ø 5, 7 mm	94 x 130 x 25 mm
Size M	064401000 (Crimp splice protector) 064402000 (Shrink splice protector)	12	6 x LC duplex 6 x SC simplex 6 x E2000 Cable outlet with strain relief	1 x Ø 5, 7, 10, 12 mm	163 x 242 x 46 mm
Size M+	063301000 (Crimp splice protector) 063301001 (Shrink splice protector)	12	6 x LC duplex 6 x SC simplex 6 x E2000 Cable outlet with strain relief	1 x Ø 5, 7, 10, 12 mm	160 x 285 x 46 mm
Size L	067701000 (Crimp splice protector) 067702000 (Shrink splice protector)	72	24 x LC duplex 24 x SC simplex 24 x E2000 Cable outlet with strain relief	1 x Ø 7, 10, 12, 16 mm	223 x 320 x 93 mm
Size L (spl. distr.)	067703000 (Crimp splice protector) 067704000 (Shrink splice protector)	144	12 x LC duplex 12 x SC simplex 12 x E2000 Cable outlet with strain relief	1 x Ø 7, 10, 12, 16 mm	223 x 320 x 93 mm

Advantages

▲ Ease of handling and simple installation
▲ Sturdy polycarbonate housing (IP 43 - IP54 degree of protection)
▲ Fibre management by a guide in the housing, in the splice fibre tray or on the mounting panel
▲ Protected area for safe connection and cable management
▲ Bending radii maintained using predefined fibre guides
▲ Outlet cable protected by silicone seal
▲ Coupler replacement during ongoing operation
▲ Approved and eligible for Germany’s National Broadband Funding Programme

Uses

▲ Transition to the customer's network
▲ Single-family home/multiple-family dwelling and/or corporate
▲ Can be used for a plug connection, fusion splice and coupler
▲ Optical distribution and termination box
▲ Optical fibre subscriber connection

ONT size S –
Optical distribution and termination box / Subscriber junction box

The Langmatz ONT size S optical distribution and termination box is a quality product that combines innovative as well as proven and tested features. It provides for easy optical fibre management in a robust and protected polycarbonate housing. It is impressively easy to handle and install, and also meets the high quality standards required for housing, laying, and commissioning sophisticated optical fibre technology.

▲ ONT size S closed

Advantages

▲ **Flexibility down to the last detail**
- Multifunctional optical fibre building entry point (network layer 3 termination box) and subscriber connection (network layer 4 subscriber junction box)
- Ø 5, 7 and 10 mm cable/micro-duct pipe inlet/outlet
- Integrated mounting area for fibre management and coupler/splice protection management
- Slot for 3+2 LC duplex couplers or 2 SC simplex couplers
- Accommodates micro-duct gas stops for micro-duct pipes
- Installation/commissioning/service without the need for special tools
- Various locking mechanism options for the cabinet, with sealing option

▲ **Eligible for German government aid for single-family houses and semi-detached houses**
- Requirements: Fully populated with couplers (3 LC duplex couplers for single-family houses, 5 LC duplex couplers for semi-detached houses)

▲ **Stability and safety – during installation and in operation**
- Fibre management with protected, secure fibre routing
- Protected area for safe connection and cable management
- Minimum bending radii maintained using predefined fibre guides
- Coupler replacement during ongoing operation

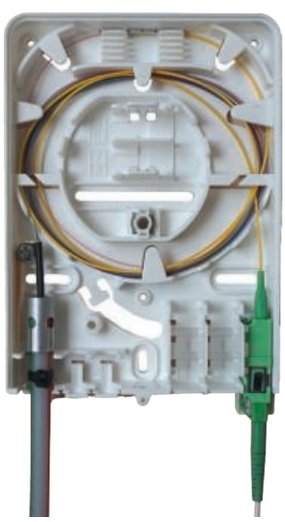
▲ **Uses**
- Transition to the customer's network
- Single-family houses, semi-detached houses and corporate clients
- Can be used for a plug connection, fusion splice
- Optical distribution and termination box
- Optical fibre subscriber termination box
- External/internal cable conversion
- Surface-mounted installation on a cavity wall or 60 mm flush-mounted boxes

▲ ONT size S interior view

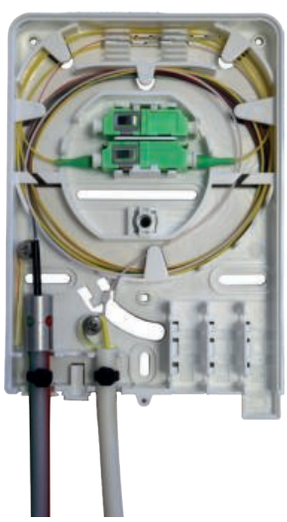
Technical data

Designation	ONT size S
Dimensions W x H x D	94 x 130 x 25 mm
Weight	Approx. 0.15 kg
Cabinet material	Polycarbonate (PC)
Housing colour	RAL 9016 Traffic white
Optical fibre cables / micro-duct pipes	Inlet/outlet: 1 x Ø 5, 7, 10 mm and 2 x Ø 5, 7 mm
Closing mechanism	Sealable, Torx/Phillips-head screw, seal sticker
Mounting panel	With management of 12 crimp splice protectors, bending radius limiter and fibre retainers
Splice protection management	12 x crimp splice protection management
Coupler section	▲ ONT: 5 x LC duplex couplers Optical fibre subscriber junction box: 3 x LC duplex couplers 3 x SC simplex couplers ▲ Cable outlet (without connector) with strain relief options
Temperature range	-33° to 70°C
Protection rating	IP 43
Degree of shock resistance	IK 06
Quality features	Pigtails/couplers LC, SC APC (green) Ferrule: ceramic, zirconia Fibre type: single-mode ITU-T, G.657A, grade B, E9/125 900 µ Optical parameters of plug connection for 1,310 and 1,550 Nm Attenuation value: <= 0.15 / ≤= 0.5 dB (average / > 99% of all cases) ORL: >70 / > 55 dB (open/closed)

Variants



▲ Example: Use as termination box



▲ Example: Use as cable converter

Package includes

▲ 1 x housing with cover
▲ Installation instructions, online version

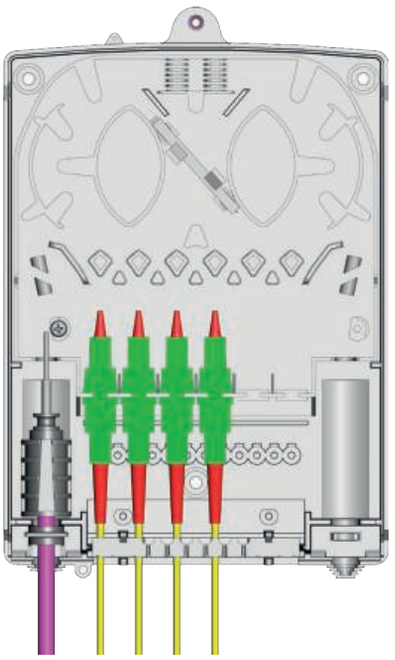
Markings

▲ Laser safety symbol
▲ Langmatz logo
▲ 2 x labelling panels
▲ Coupler numbering

ONT size M –
Optical distribution and termination box

The Langmatz ONT size M provides for the management of up to 12 optical fibres integrated in a sturdy polycarbonate cabinet with degree of protection IP 54. It is impressively easy to handle and install, and also meets the high quality standards required for housing, laying, and commissioning sophisticated optical fibre technology. What is more, it is approved and eligible for Germany's National Broadband Funding Programme.

▲ ONT size M closed


▲ ONT size M interior view

Advantages

▲ **Flexibility down to the last detail**
- Access and outlet of cables and micro-duct pipes Ø 5, 7, 10 and 12 mm at the bottom left or right as required
- Removable mounting panel for fibre management and coupler/splice protection management
- Slot for 6 couplers
- Possible mounting for splitter
- Accommodates commercially available micro-duct gas stops for micro-duct pipes
- Installation/commissioning/service without the need for special tools
- Various locking mechanism options for the cabinet, with sealing option

▲ **Stability and safety – during installation and in operation**
- Fibre management via a guide on the mounting panel
- Protected area for safe connection and cable management
- Bending radii maintained using predefined fibre guides
- Outlet cable protected by a silicone seal
- Coupler replacement during ongoing operation

▲ **Uses**
- Transition to the customer's network
- Single-family home / apartment block and/or corporate sector
- Can be used for a plug connection, fusion splice and coupler

Technical data

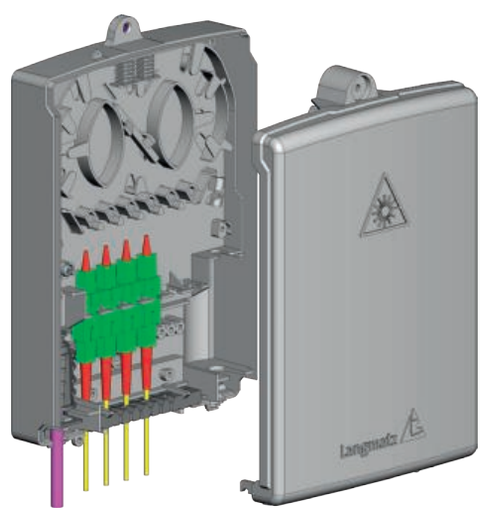
Designation	ONT size M
Dimensions W x H x D	163 x 242 x 46 mm
Weight	Approx. 500 g
Cabinet material	Polycarbonate
Housing colour	Light grey (RAL 7035)
Cable micropipes	Inlet/outlet for Ø 5, 7, 10 and 12 mm micro-duct pipes
Closing mechanism	Sealable, Phillips-head screw, Torx screw prepared for M4 grooved bolt
Mounting panel	Removable; management of 12 crimp or heat shrink splices (depending on version); also accommodates PLC splitter
Number of fibres	Maximum: 12 optical fibres
Coupler section	▲ 6 x LC Duplex, 6 x SC Simplex, E2000 (with restrictions) or a mixture thereof ▲ Cable outlet (without connector) with strain relief options
Temperature range	-33° to 70°C
Protection rating	IP 54
Degree of shock resistance	IK 06
Quality features	Pigtails/couplers LC, SC APC (green) Ferrule: ceramic, zirconia Fibre type: single-mode ITU-T, G.657A, grade B, E9/125 900 µ Optical parameters of plug connection for 1,310 and 1,550 Nm Attenuation value: <= 0.15 / ≤= 0.5 dB (average / > 99% of all cases) ORL: >70 / > 55 dB (open/closed)

Package includes

▲ 1 x housing with cover
▲ 1 x mounting panel
▲ 2 x sealing elements for cable outlet
▲ Installation instructions – online version

Markings

▲ Laser safety symbol



▲ ONT size M

ONT size M+ –
Optical distribution and termination box

The Langmatz ONT size M+ provides for the management of up to 12 optical fibres when using a flexible mounting panel integrated in a sturdy polycarbonate housing specified to degree of protection IP 54. It is impressively easy to handle and install, and also meets the high quality standards required for housing, laying, and commissioning sophisticated optical fibre technology. What is more, it is approved and eligible for Germany's National Broadband Funding Programme.

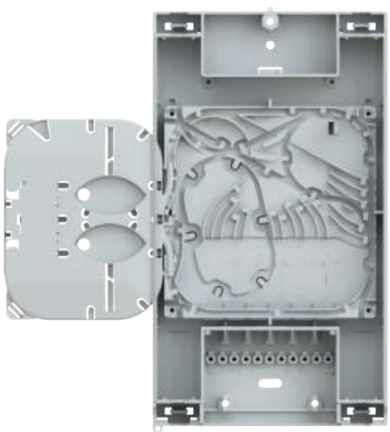
▲ ONT size M+ closed

Advantages

▲ **Flexibility down to the last detail**
- Ø 5, 7, 10 and 12 mm cable/micro-duct pipe inlet/outlet options top and bottom
- Rotatable mounting panel for fibre management and coupler/splice protection management
- Separate expansion for couplers and pigtails, supported by an individual 6-piece adapter guide with predetermined breaking points
- Removable splice fibre tray for splicing fibres
- Accommodates commercially available micro-duct gas stops for micro-duct pipes
- Series installation of additional housings is possible on both sides for capacity upgrades
- Installation/commissioning/service without the need for special tools
- Various locking mechanism options for the cabinet, with sealing option

▲ **Stability and safety – during installation and in operation**
- Fibre management via a guide in the housing and in the splice fibre tray
- Protected area for safe connection and cable management
- Bending radii maintained using predefined fibre guides
- Outlet cable protected by a silicone seal
- Coupler replacement during ongoing operation

▲ **Uses**
- Transition to the customer's network
- Single-family home/multiple-family dwelling and/or corporate
- Can be used for a plug connection, fusion splice and coupler



▲ ONT size M+ interior view with open splice fibre tray

Technical data

Designation	ONT size M+
Dimensions W x H x D	160 x 285 x 46 mm
Weight	Approx. 600 g
Cabinet material	Polycarbonate
Housing colour	Light grey (RAL 7035)
Cable micropipes	Inlet/outlet for Ø 5, 7, 10 and 12 mm micro-duct pipes
Closing mechanism	Sealable, Phillips-head screw, Torx screw prepared for M4 grooved bolt
Mounting panel	Pivotable 90° depending on the application (4 positions)
Splice fibre tray	Tray of 12 crimp splice protectors / PLC splitter
Number of fibres	Maximum 12 optical fibres
Coupler section	▲ 6 x LC Duplex, 6 x SC Simplex, E2000 or a mixture thereof ▲ Cable outlet (without connector) with strain relief options
Screws	Stainless steel
Temperature range	-33° to 70°C
Protection rating	IP 54
Degree of shock resistance	IK 06
Quality features	Pigtails/couplers LC, SC APC (green) Ferrule: ceramic, zirconia Fibre type: single-mode ITU-T, G.657A, grade B, E9/125 900 µ Optical parameters of plug connection for 1,310 and 1,550 Nm Attenuation value: <= 0.15 / ≤= 0.5 dB (average / > 99% of all cases) ORL: >70 / > 55 dB (open/closed)

Package includes

▲ 1 x housing with cover
▲ 1 x mounting panel with 10 mm multiple-fibre tray
▲ 2 x sealing elements for cable outlet
▲ 14 x serrated screws for fibre strain relief
▲ 1 x closing plate for coupler section
▲ 1 x sealing for housing installation in series
▲ 2 x optical fibre cable/micro-duct pipe fixing elements
▲ Installation set for wall installation (screws, dowels, drilling template)
▲ Installation instructions (online version)

Markings

▲ Laser safety symbol
▲ Laser-cut customer logo on cover – on request

▲ ONT size M+

ONT size L and size L (spl. dist.) –
Optical distribution and termination box

The Langmatz ONT size L optical distribution and termination box is a quality product that combines innovative as well as proven and tested features. It provides for the management of up to 144 optical fibres integrated into a robust, protected polycarbonate cabinet with degree of protection IP 54. It is characterised by its ease of handling, simple installation and flexibility. It also meets the high quality standards required for incorporating, laying and commissioning sophisticated optical fibre technology.

▲ ONT size L closed

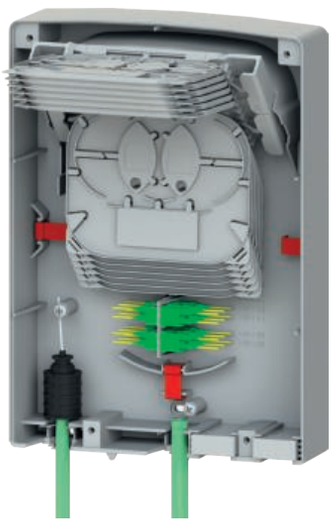
Advantages

▲ **Flexibility down to the last detail**
- Ø 7, 10, 12 and 16 mm cable/micro-duct pipe inlet/outlet at the bottom left
- Proven fibre management system with organiser and splice fibre trays
- Slot for up to 24 couplers (SC/LC/E2000)
- Accommodates commercial micro-duct gas stop

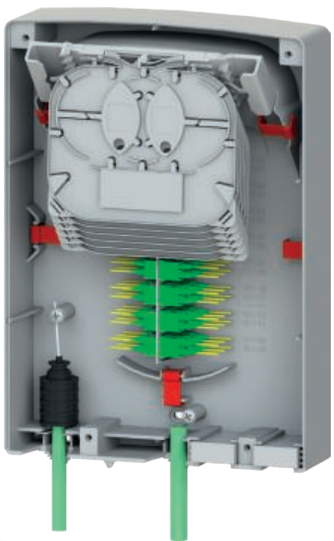
▲ **Application and eligibility for German government aid**
- Transition to the customer's network
- Single-family homes, apartment blocks and/or corporate customers are eligible for German government aid
- Can be used for a plug connection, fusion splice and splitter
- Can be used as a splice distributor or splice patch distributor

▲ **Stability and safety – during installation and in operation**
- Optimum fibre management by a guide in the cabinet and FMS
- Compliance with minimum bending radii
- Outlet cable is protected and organised by outlet seal
- Coupler replacement during ongoing operation

Variants



▲ Extended splice patch distributor (144 fibres – 12 couplers)



▲ Standard splice patch distributor (72 fibres – 24 couplers)

Technical data

Designation	ONT size L
Dimensions W x H x D	223 x 320 x 93 mm
Weight	Approx. 1.2 kg
Cabinet material	Polycarbonate (PC)
Housing colour	Light grey (RAL 7035)
Inlet cable / micro-duct pipe	1 x Ø 7, 10, 12, 16 mm
Outlet cable / micro-duct pipe	48 x Ø 1.8 - 3.4 mm 1 x Ø 7, 10, 12 mm
Closing mechanism	Sealable, countersunk seals, Torx screw
Number of fibres and couplers	Standard: maximum 72 fibres & 24 couplers Extension (spl. dist.): maximum 144 fibres & 12 couplers
Coupler section	LC Duplex, SC Simplex, E2000 (restricted) or a mixture thereof
Impact resistance	IK 08
Screws	Stainless steel
Temperature range	-33° to 70°C
Protection rating	IP 54
Diameter of outlet cable	1.8 – 3.4 mm
Fire protection class	UL94 V-2

Package includes

▲ 1 x housing with cover
▲ 1 x organiser with multiple-fibre tray
▲ 2 x sealing elements for cable outlet
▲ 1 x fastening screw for strain relief
▲ 2 x strain relief panels for Ø 10 mm, Ø 12 mm
▲ Installation set for wall installation (screws, dowels)
▲ Installation instructions (online version)

Markings

▲ Laser safety symbol

Langmatz

Polycarbonate manholes

The efficient alternative to concrete –
Modern plastic manholes

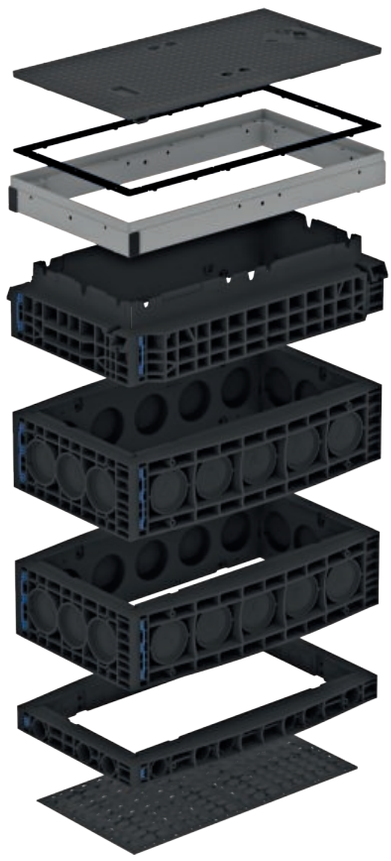
At the start of the 1990s, Langmatz began designing polycarbonate manholes. This pioneering achievement laid the foundation for the company's rise to become the European market leader in polycarbonate manholes. They are used as cable draw manholes, telecommunication distribution points, and underground distribution systems worldwide. As secure housings for energy and data lines, they are a central component of infrastructure projects, such as the extension of optical fibre and electricity networks, e-charging stations, and 5G. They impress through their low inherent weight, cost-effectiveness, rapid installation, and structural integrity. This makes them an efficient and versatile alternative to heavy concrete manholes, and enables our customers to use them in a wide range of applications.

High-quality polycarbonate (PC) is the plastic mainly used by Langmatz in its production. PC has excellent rigidity, strength, heat resistance, and hardness, as well as very high resistance to weathering and radiation.

In addition, Langmatz has developed another promising material in a project funded by the Bavarian Research Foundation. As a durable and lightweight material that has proven itself in civil engineering, we have augmented plastic with renewable raw materials, and used it to develop a sustainable manhole system based on wood polymer composites (WPC).

What sets our manholes apart:

- ▲ High-quality plastics and 3D ribFrame technology guarantee durability and resilience of the entire construction up to D 400 and above
- ▲ Thanks to a low intrinsic weight, modular construction and ready-to-install delivery, the manholes can be installed quickly and inex-pensively
- ▲ Modular basic kits provide for numerous manhole depths and connection positions for cable installations



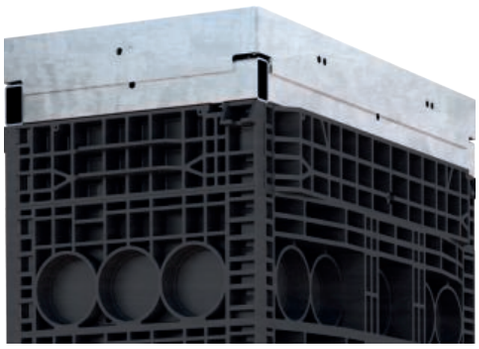
Withstands the highest loads –
Langmatz 3D-ribFrame technology

We have given a lot of thought to how polycarbonate manholes need to be designed to permanently withstand the highest loads. The QualityBox with its unique 3D-ribFrame® technology has emerged from this intensive development work.
This technology ensures that the manhole body has excellent stability and perfect structural integrity and is thus as durable as the cover – even above D 400.

The advantages of the QualityBox at a glance:

▲ **Low inherent weight**
- Ease of transport and simple handling
- Quick and inexpensive installation of the polycarbonate manholes
- No heavy lifting equipment required for fitting and installation

▲ **Modular design**
- One- or multi-section manhole cover
- Hot-dip galvanised steel frame with elastomer contact surface
- PC top frame with internal shuttering walls
- PC frame elements available in a variety of heights and variants
- Base plate (non-slip according to DIN EN 51130-R10) including water drainage openings



3D-ribFrame designed to resist

Langmatz QualityBox:
Easy to handle – flexible to use

We use only high-quality plastics for the production of our manholes. We have integrated predetermined breaking points into the frame elements to ensure the fast and cost-effective installation of the manholes, which can be simply opened for the use of flexible pipe inlets. Modular basic polycarbonate manhole kits enable customers to accommodate numerous manhole heights and connection positions. A wide range of cast-iron, concrete or paveable manhole covers ensures that they can be seamlessly integrated into the cityscape.

European approval –
For the complete Langmatz manhole system

The requirements governing the construction principles, testing, labelling, and quality control of manhole covers are regulated in DIN EN 124. A General Technical Approval (AbZ) is all that is required for approval of a manhole in Germany.

By contrast, Langmatz polycarbonate manholes are unique: the entire manhole system is tested, not just the cover. As our manholes comply with the load classes, we have an ETA (European Technical Assessment) which applies to all of our polycarbonate manholes with cover as per DIN EN 124 (B 125 and D 400). This confirms that all the test criteria have been met by Langmatz. That is why our manholes also carry the coveted CE mark.

High-grade body

▲ **For all load-bearing elements made from polycarbonate**
- Modified polycarbonate (PC)
- Excellent temperature resistance
- Suitable for hot asphalt
- Maximum stability
- High chemical resistance
- Excellent UV and weather resistance
- Can be recycled several times

Variable manhole covers

▲ Cast-iron
▲ Concrete-lined
▲ Paveable
▲ Plastic

▲ Cast-iron cover

▲ Steel cover, concrete-lined

▲ Steel cover, paveable

▲ Plastic cover

Modular design

Modular design

Application example: Manhole EK378, clear dimensions 400 x 800 mm

▲ Manhole cover for test class B 125 or D 400

▲ Manhole cover variants:
- Cast-iron (approx. 33 kg | B125)
- concrete-lined (approx. 95 kg | B125)
- paveable (approx. 87 kg | B125)

▲ Hot-dip galvanised steel frame with elastomer pad
- Weight approx. 23 kg (for cast-iron cover)

▲ Polycarbonate top frame with internal shuttering walls
- Weight approx. 15 kg

▲ Polycarbonate frame available in various heights
- Weight approx. 16 kg

▲ Base plate (non-slip according to DIN EN 51130-R10) including water drainage openings
- Weight approx. 3.5 kg

▲ Modular design:
EK378, clear dimensions 400 x 800 mm
▲ Cast-iron cover

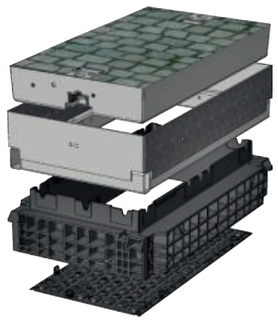
Practical product

▲ Continuous height and gradient adjustment

▲ Sealing elements for cables without conduits

▲ Optimum integration into the surrounding soil

▲ Hot-dip galvanised steel frame for mechanical protection of the top edge



▲ Basic manhole kit: EK378 with paveable manhole cover

Manhole covers

▲ Test category DIN EN 124, up to E 600

▲ Cast-iron, concrete-lined, paveable

▲ Closing mechanisms and company logo

Basic kit

▲ Every basic kit and complete manhole includes all the required hole plugs for sealing, levering and locking holes

▲ Additional hole plugs can be ordered separately

Additional features

Pipe inlets | with predetermined breaking point

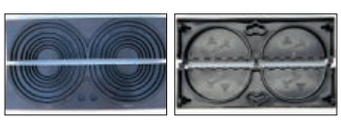
▲ Pipe inlet via prefabricated predetermined breaking points
▲ All predetermined breaking points are closed at the factory
▲ Predetermined breaking point easily opened on site
▲ Standard pipe inlets:
DN 50 mm | DN 110 mm | DN 160 mm

Pipe inlets | with coupler

▲ Always through predetermined breaking points
▲ Adapters possible for pipes with a smaller diameter at the predetermined breaking point Ø 110 mm (Ø 100 mm, Ø 90 mm, Ø 75 mm, Ø 63 mm, Ø 50 mm, Ø 40 mm couplers) or with a very large diameter at the predetermined breaking point Ø 160 mm (Ø 140 mm, Ø 125 mm, Ø 110 mm couplers)

Pipe inlets | Overbuild with rectangular opening

▲ Frames with rectangular openings are used for the retrospective installation of manholes on existing cable routes
▲ Appropriate adapter plates are used to integrate the conduits
▲ Unused openings are closed with closing plates
▲ Example: Adapter plates for the sand-proof connection of various pipes



Closing mechanisms for manhole covers

Standard head styles

▲ Hexagonal head
▲ Hexagonal socket head
▲ LIC-LOCK
▲ COLT / TELENET / OTC

Steel frames
are hot-dip galvanised according to DIN EN ISO 1461

Steel frame

Elastomer pad

▲ Compensates for minor unevenness

▲ Prevents rattling

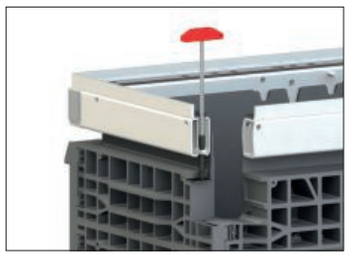
Height-adjustable manhole

Manholes can be fitted with a height adjustment kit

▲ Optimal fit of the upper edge of the manhole to the surface of the ground

▲ Continuous height and angle adjustment between the top frame and steel frame as per the installation instructions

▲ Height can be adjusted by up to 50 mm



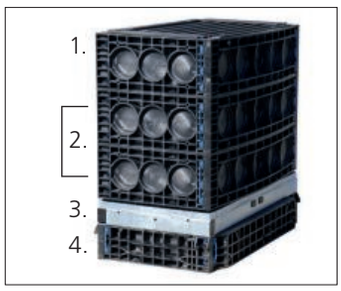
Manhole with water drain

▲ All openings in the base plate are used for water drainage

Manhole supplied ready for installation

Based on customer requirements:

1. Frame and base plate
2. Frame
3. Steel frame and cover
4. Top frame



Quality assurance

▲ Our quality management system is certified according to DIN EN ISO 9001

Selection criteria

1. Dimensions

▲ Clear dimensions | Length x Width

2. Type of manhole cover, included in the basic kit

▲ Cast-iron
▲ Concrete-lined steel
▲ Paveable steel

3. Manhole cover test class acc. to DIN EN 124

▲ 15 kN
▲ B 125
▲ D 400
▲ E 600 (on request)

4. Manhole cover closing mechanism

▲ Without lock
▲ Closure with hexagonal head style
▲ Closure with hexagonal socket head style
▲ Closure with LIC-LOCK head style
▲ Closure with COLT / TELENET / OTC head style

5. Pipe inlets (predetermined breaking points in the required frames)

▲ Ø 50 mm
▲ Ø 110 mm
▲ Ø 160 mm
▲ With rectangular openings (overbuild/adapter for D125 and D132)

6. Overall height (results from the selection of frames + basic kit)

▲ Overall height: Height of basic kit
+ height of additional frame components
= required overall height

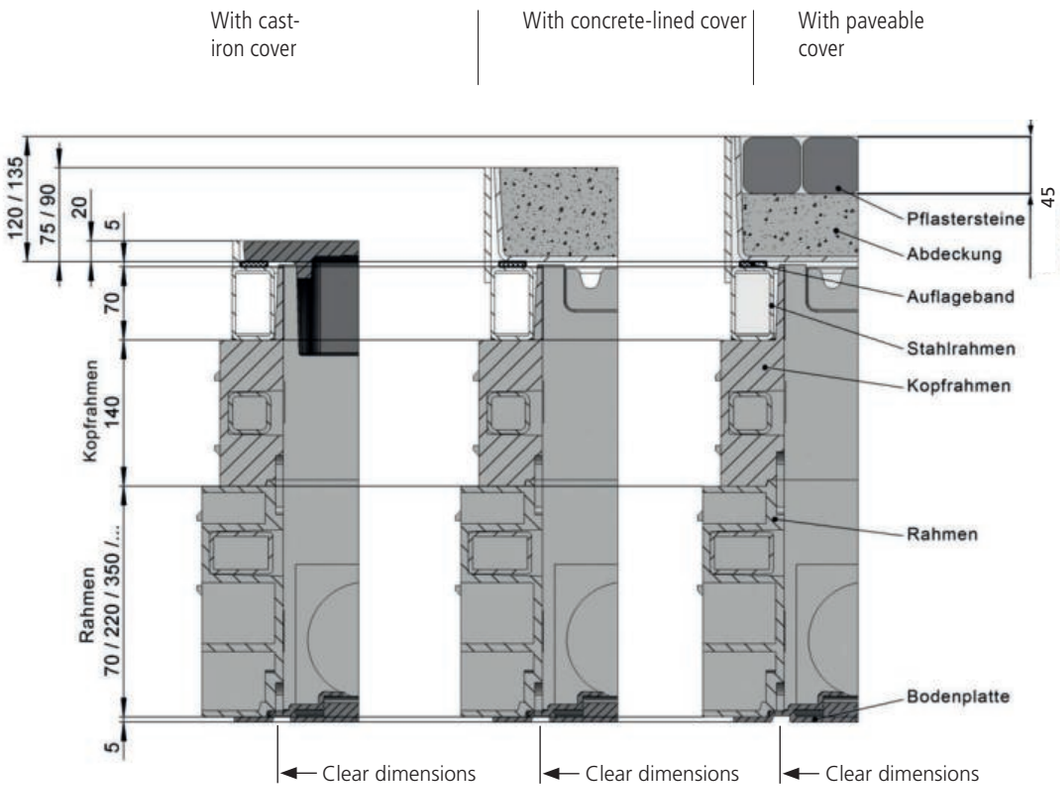
+ Other accessories

▲ Height adjustment kit
▲ Customer-specific company logo in cover
▲ Other diameters using adapters, e.g. for micro-duct pipes
▲ …

=

Illustration –
Manhole construction

The manhole height varies according to the type of cover, load class, and choice of frame:



All data in mm

Product overview of QualityBox PC –
Standard sizes

Type | Clear dimensions	EK478 | 400 x 1165 mm	EK628 | 400 x 1600 mm	EK338 | 550 x 1165 mm	EK508 | 800 x 1165 mm	EK428 | 800 x 1400 mm
Test class					
B 125	■	■	■	■	■
D 400	■	■	■	■	■
Modular design	■	■	■	■	■
Cover					
Cast-iron	■	■	■	■	
Concrete-lined steel	■	■	■	■	■
Paveable steel	■	■	■	■	■
Cast-iron swivelling manhole cover D 400					■
Steel frame	■	■	■	■	■
Top frame					
Height 140 mm	■	■	■	■	■
Frame					
Height 70 mm	■	■	■	■	■
Height 220 mm	■	■	■	■	■

Key to symbols: Manhole cover closing mechanism

Locking mechanism	With covers with test class: B 125: Possible locking mechanism D 400: Locking mechanism required*

*Manhole covers in load class D 400 must always be screwed down or locked in accordance with DIN EN 124. The sole exception is units weighing over 300 kg/m².

Remarks –
Classification by application according to DIN EN 124

[1]	15 kN test force	Traffic surfaces used exclusively by pedestrians and bicycles and similar surfaces, e.g. green spaces (group 1)	
[2]	B125 - 125 kN test force	Pavements, pedestrian areas and similar surfaces, car parks and parking decks (group 2)	
[3]	D400 - 400 kN test force	Road carriageways (including pedestrian streets), parking areas and similar permanent traffic surfaces, e.g. AOD parking areas (group 4)	

Locking mechanism

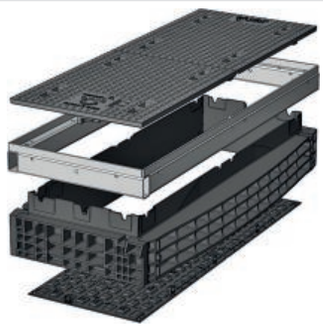
[4] D400 manhole covers must always be screwed down or locked in accordance with EN 124

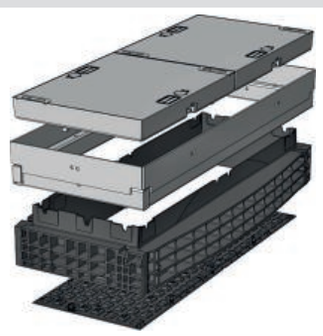
Polycarbonate manholes –
QualityBox PC sizes

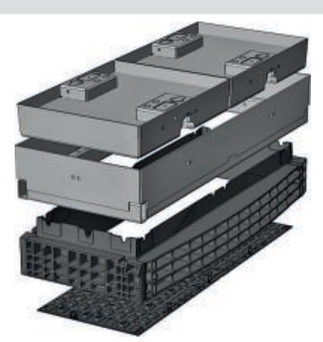
Designation	Clear dimensions	External dimensions	Page
EK478 QualityBox PC	400 x 1165 mm	590 x 1300 mm	68 – 70
EK628 QualityBox PC	400 x 1600 mm	550 x 1730 mm	71 – 73
EK338 QualityBox PC	550 x 1165 mm	745 x 1305 mm	74 – 76
EK508 QualityBox PC	800 x 1165 mm	990 x 1330 mm	77 – 79
EK428 QualityBox PC	800 x 1400 mm	960 x 1560 mm	80 – 82

QualityBox PC EK478
Basic kits

Clear dimensions: 400 x 1165 mm
Outer dimensions: 590 x 1300 mm

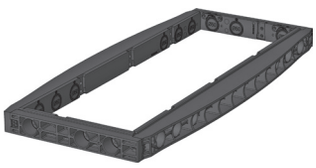
Basic kit with cast-iron cover:			**Clear height: 139 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover	71.0 kg	71.0 kg	
Single cover	35.5 kg	35.5 kg	
Hot-dip galvanised steel frame	32.0 kg	32.0 kg	
Top frame (standard height)	24.0 kg	24.0 kg	
Base plate	4.5 kg	4.5 kg	
Total weight of basic kit	**131.5 kg**	**131.5 kg**	
Overall height of basic kit	**240 mm**	**240 mm**	

Basic kit with concrete-lined steel cover:			**Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover	129.0 kg	129.0 kg	
Single cover	64.5 kg	64.5 kg	
Hot-dip galvanised steel frame	46.0 kg	46.0 kg	
Top frame (standard height)	24.0 kg	24.0 kg	
Base plate	4.5 kg	4.5 kg	
Total weight of basic kit	**203.5 kg**	**203.5 kg**	
Overall height of basic kit	**295 mm**	**295 mm**	

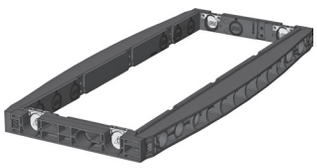
Basic kit with paveable steel cover: (paveable height 45 mm)			**Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover (non-paveable)	140.0 kg	140.0 kg	
Single cover (non-paveable)	70.0 kg	70.0 kg	
Hot-dip galvanised steel frame	50.0 kg	50.0 kg	
Top frame (standard height)	24.0 kg	24.0 kg	
Base plate	4.5 kg	4.5 kg	
Total weight of basic kit	**218.5 kg**	**218.5 kg**	
Overall height of basic kit	**340 mm**	**340 mm**	

QualityBox PC EK478
Frames / Vario Modules

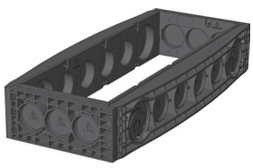
Clear dimensions: 400 x 1165 mm
Outer dimensions: 590 x 1300 mm



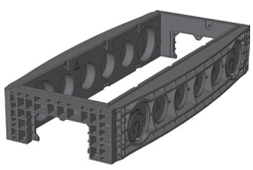
Frame 70 mm
Art. no.: 06 478 0058E
3 x Ø 50
6 x Ø 50
Weight: 8.3 kg



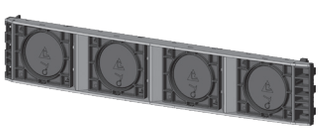
Frame 70 mm overbuild
Art. no.: 06 478 0358E
2 x overbuild / 1 x Ø 50
6 x Ø 50
Weight: 8.3 kg



Frame 220 mm
Art. no.: 06 478 0052E
3 x Ø 110
6 x Ø 110 / 2 x Ø 160
Weight: 23.0 kg



Frame 220 mm overbuild
Art. no.: 06 478 0073E
1 x rectangular
6 x Ø 110 / 2 x Ø 160
Weight: 22.0 kg



Vario Module
Art. no.: 06 338 0350E
CD1165 4 x 160 mm

QualityBox PC EK478
Order numbers

Clear dimensions: 400 x 1165 mm
Outer dimensions: 590 x 1300 mm

Manhole with cast-iron cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 478 1141
Basic kit D 400, hex locking mechanism	06 478 1149
Basic kit D 400, hexagon socket locking mechanism	06 478 1213
Basic kit D 400, LIC-LOCK locking mechanism	06 478 1214
Basic kit D 400, COLT/TELENET locking mechanism	06 478 1215
Accessories for cast-iron cover, lockable	
1 x hex locking mechanism	50 000 6020
1 x hexagon socket locking mechanism	50 000 6040
1 x LIC-LOCK locking mechanism	50 000 6060
1 x COLT/TELENET locking mechanism	50 000 6080
Sealing plug for locking mechanism, black	70 046 0716
Cast-iron cover B 125, 2-piece	70 052 0030E
Cast-iron cover D 400, 2-piece[4]	70 052 0020E
Steel frame	70 034 5980E

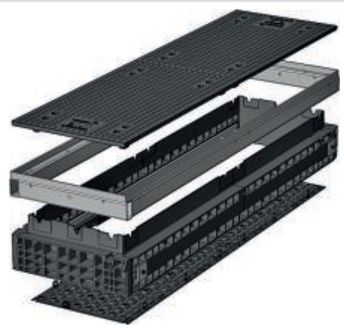
Manhole with concrete-lined steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 478 1093
Basic kit D 400, hex locking mechanism	06 478 1094
Basic kit D 400, hexagon socket locking mechanism	06 478 1095
Basic kit D 400, LIC-LOCK locking mechanism	06 478 1096
Basic kit D 400, COLT/TELENET locking mechanism	06 478 1097
Accessories for concrete-lined steel cover, lockable	
4 x hex locking mechanism	50 000 6200
4 x hexagon socket locking mechanism	50 000 7200
4 x LIC-LOCK locking mechanism	50 000 8200
4 x COLT/TELENET locking mechanism	50 000 9200
Sealing plug for locking mechanism, black	70 046 0716
Concrete-lined steel cover, B 125, 2-piece	70 040 6775E
Concrete-lined steel cover, D 400, 2-piece[4]	70 040 6770E
Steel frame	70 039 7080E

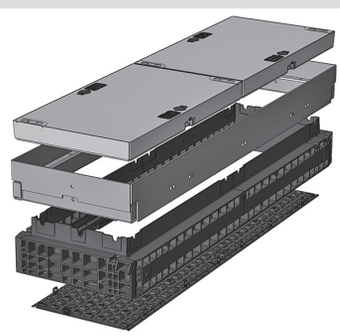
Manhole with paveable steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 478 1034
Basic kit D 400, without lock, locks retrofittable	06 478 1216
Accessories for paveable steel cover, lockable	
4 x hex locking mechanism	50 000 6300
4 x hexagon socket locking mechanism	50 000 7300
4 x LIC-LOCK locking mechanism	50 000 8300
4 x COLT/TELENET locking mechanism	50 000 9300
Sealing plug for locking mechanism, black	70 046 0716
Paveable steel cover, D 400, 2-piece[4]	70 088 2000E
Steel frame	70 088 2020E

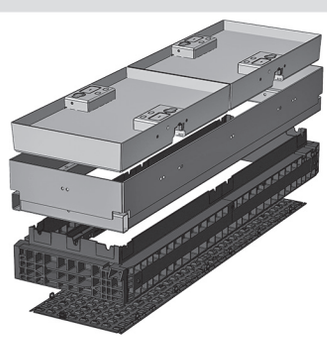
For all basic kits	**Order number**
Top frame, height 140 mm	06 478 0082E
Base plate, height 5 mm	06 478 0054E

QualityBox PC EK628
Basic kits

Clear dimensions: 400 x 1600 mm
Outer dimensions: 550 x 1730 mm

Basic kit with cast-iron cover:		**Clear height: 190 mm**
Test classes according to DIN EN 124	**D 400**[3]	
Complete cover	96.0 kg	
Single cover	48.0 kg	
Hot-dip galvanised steel frame	28.0 kg	
Top frame (standard height)	31.0 kg	
Base plate	6.0 kg	
Total weight of basic kit	**161.0 kg**	
Overall height of basic kit	**240 mm**	

Basic kit with concrete-lined steel cover:			**Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover	173.0 kg	173.0 kg	
Single cover	86.5 kg	86.5 kg	
Hot-dip galvanised steel frame	54.0 kg	54.0 kg	
Top frame (standard height)	31.0 kg	31.0 kg	
Base plate	6.0 kg	6.0 kg	
Total weight of basic kit	**264.0 kg**	**264.0 kg**	
Overall height of basic kit	**295 mm**	**295 mm**	

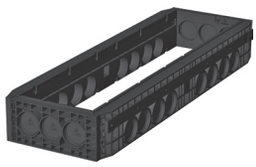
Basic kit with paveable steel cover: (paveable height 45 mm)			**Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover (non-paveable)	185.0 kg	1 5.0 kg	
Single cover (non-paveable)	92.5 kg	92.5 kg	
Hot-dip galvanised steel frame	46.0 kg	46.0 kg	
Top frame (standard height)	31.0 kg	31.0 kg	
Base plate	6.0 kg	6.0 kg	
Total weight of basic kit	**268.0 kg**	**268.0 kg**	
Overall height of basic kit	**340 mm**	**340 mm**	

QualityBox PC EK628
Frame

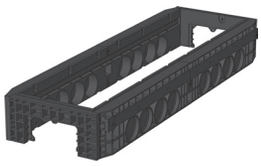
Clear dimensions: 400 x 1600 mm
Outer dimensions: 550 x 1730 mm

Frame 70 mm
Art. no.: 06 628 0058E
3 x Ø 50
Weight: 18.2 kg

Frame 70 mm
overbuild
Art. no.: 06 628 0358E
2 x overbuild / 1 x Ø 50
Weight: 18.2 kg



Frame 220 mm
Art. no.: 06 628 0052E
3 x Ø 110
8 x Ø 110
Weight: 44.5 kg



Frame 220 mm
Art. no.: 06 628 0076E
1 x rectangular
8 x Ø 110
Weight: 43.0 kg

QualityBox PC EK628
Order numbers

Clear dimensions: 400 x 1600 mm
Outer dimensions: 550 x 1730 mm

Manhole with cast-iron cover, lockable [4]	**Order number**
Basic kit D 400, hex locking mechanism	06 628 1204
Basic kit D 400, hexagon socket locking mechanism	06 628 1205
Basic kit D 400, LIC-LOCK locking mechanism	06 628 1206
Basic kit D 400, COLT/TELENET locking mechanism	06 628 1207
Accessories for cast-iron cover, lockable	
4 x hex locking mechanism	06 568 0256E
4 x hexagon socket locking mechanism	06 568 0250E
4 x LIC-LOCK locking mechanism	06 568 0254E
4 x COLT/TELENET locking mechanism	06 568 0252E
Sealing plug for locking mechanism, black	70 046 0716
Cast-iron cover D 400, 2-piece[4]	70 078 7150E
Steel frame	70 040 9704E

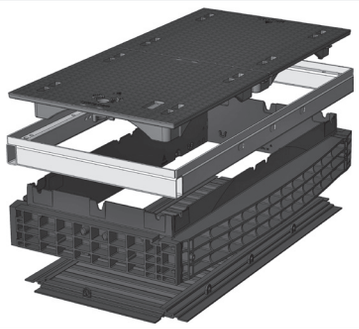
Manhole with concrete-lined steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 628 1029
Basic kit D 400, hex locking mechanism	06 628 1030
Basic kit D 400, hexagon socket locking mechanism	06 628 1031
Basic kit D 400, LIC-LOCK locking mechanism	06 628 1032
Basic kit D 400, COLT/TELENET locking mechanism	06 628 1033
Accessories for concrete-lined steel cover, lockable	
4 x hex locking mechanism	06 568 0256E
4 x hexagon socket locking mechanism	06 568 0250E
4 x LIC-LOCK locking mechanism	06 568 0254E
4 x COLT/TELENET locking mechanism	06 568 0252E
Sealing plug for locking mechanism, black	70 046 0716
Concrete-lined steel cover, B 125, 2-piece	70 046 1275E
Concrete-lined steel cover, D 400, 2-piece[4]	70 046 1270E
Steel frame	70 046 0705E

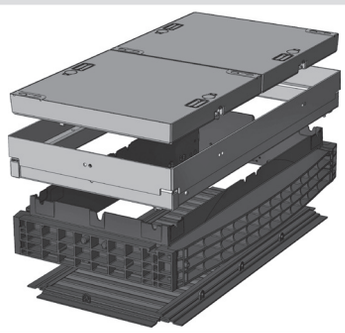
Manhole with paveable steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 628 1049
Basic kit D 400, without lock, locks retrofittable	06 628 1050
Accessories for paveable steel cover, lockable	
4 x hex locking mechanism	06 568 0256E
4 x hexagon socket locking mechanism	06 568 0250E
4 x LIC-LOCK locking mechanism	06 568 0254E
4 x COLT/TELENET locking mechanism	06 568 0252E
Sealing plug for locking mechanism, black	70 046 0716
Paveable steel cover, D 400, 2-section[4]	70 088 2100E
Steel frame	70 088 2120E

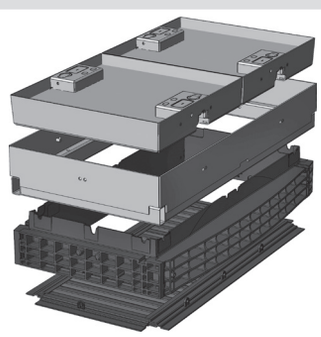
For all basic kits	**Order number**
Top frame, height 140 mm	06 628 0082E
Base plate, height 5 mm	06 628 0054E

QualityBox PC EK338
Basic kits

Clear dimensions: 550 x 1165 mm
Outer dimensions: 746 x 1305 mm

Basic kit with cast-iron cover:			**Clear height: 139 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover	89.0 kg	89.0 kg	
Single cover	44.5 kg	44.5 kg	
Hot-dip galvanised steel frame	34.5 kg	34.5 kg	
Top frame (standard height)	25.0 kg	25.0 kg	
Base plate	7.0 kg	7.0 kg	
Total weight of basic kit	**155.5 kg**	**155.5 kg**	
Overall height of basic kit	**240 mm**	**240 mm**	

Basic kit with concrete-lined steel cover:			**Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover	173.0 kg	173.0 kg	
Single cover	86.5 kg	86.5 kg	
Hot-dip galvanised steel frame	48.5 kg	48.5 kg	
Top frame (standard height)	25.0 kg	25.0 kg	
Base plate	7.0 kg	7.0 kg	
Total weight of basic kit	**253.5 kg**	**253.5 kg**	
Overall height of basic kit	**295 mm**	**295 mm**	

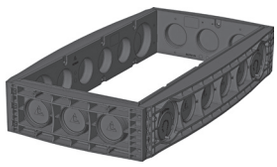
Basic kit with paveable steel cover: (paveable height 45 mm)			**Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover (non-paveable)	186.0 kg	186.0 kg	
Single cover (non-paveable)	93.0 kg	93.0 kg	
Hot-dip galvanised steel frame	56.0 kg	56.0 kg	
Top frame (standard height)	25.0 kg	25.0 kg	
Base plate	7.0 kg	7.0 kg	
Total weight of basic kit	**274.0 kg**	**274.0 kg**	
Overall height of basic kit	**340 mm**	**340 mm**	

QualityBox PC EK338
Frames / Vario Modules

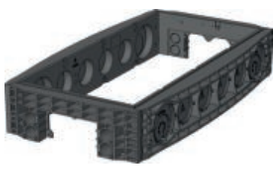
Clear dimensions: 550 x 1165 mm
Outer dimensions: 745 x 1305 mm

Frame 70 mm
Art. no.: 06 338 0058E
5 x Ø 50
6 x Ø 50
Weight: 9.1 kg

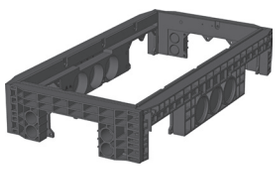
Frame 70 mm overbuild
Art. no.: 06 338 0358E
4 x overbuild / 1 x Ø 50
6 x Ø 50
Weight: 9.1 kg



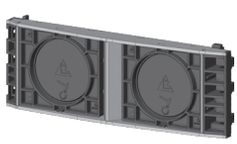
Frame 220 mm
Art. no.: 06 338 0052E
3 x Ø 110
6 x Ø 110 / 2 x Ø 160
Weight: 26.5 kg



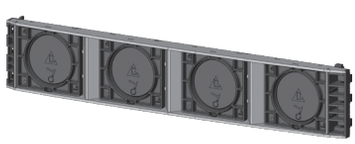
Frame 220 mm overbuild
Art. no.: 06 338 0075E
4 x Ø 50 / 1 x rectangular
6 x Ø 110 / 2 x Ø 160
Weight: 25.5 kg



Frame 220 mm overbuild
Art. no.: 06 338 0071E
4 x Ø 50 / 1 x rectangular
3 x Ø 110 / 2 x rectangular
Weight: 27.0 kg



Vario Module
Art. no.: 06 278 0351E
CD550 2 x 160 mm



Vario Module
Art. no.: 06 338 0350E
CD1165 4 x 160 mm

QualityBox PC EK338
Order numbers

Clear dimensions: 550 x 1165 mm
Outer dimensions: 746 x 1305 mm

Manhole with cast-iron cover, lockable[4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 338 2513
Basic kit D 400, hex locking mechanism	06 338 2435
Basic kit D 400, hexagon socket locking mechanism	06 338 2516
Basic kit D 400, LIC-LOCK locking mechanism	06 338 2517
Basic kit D 400, COLT/TELENET locking mechanism	06 338 2518
Accessories for cast-iron cover, lockable	
1 x hex locking mechanism	50 000 6020
1 x hexagon socket locking mechanism	50 000 6040
1 x LIC-LOCK locking mechanism	50 000 6060
1 x COLT/TELENET locking mechanism	50 000 6080
Sealing plug for locking mechanism, black	70 046 0716
Cast-iron cover B 125, 2-piece	70 052 0010E
Cast-iron cover D 400, 2-piece[4]	70 052 0000E
Steel frame	70 034 5180E

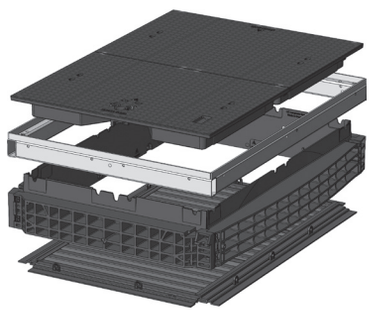
Manhole with concrete-lined steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 338 2429
Basic kit D 400, hex locking mechanism	06 338 2430
Basic kit D 400, hexagon socket locking mechanism	06 338 2431
Basic kit D 400, LIC-LOCK locking mechanism	06 338 2432
Basic kit D 400, COLT/TELENET locking mechanism	06 338 2433
Accessories for concrete-lined steel cover, lockable	
4 x hex locking mechanism	50 000 6200
4 x hexagon socket locking mechanism	50 000 7200
4 x LIC-LOCK locking mechanism	50 000 8200
4 x COLT/TELENET locking mechanism	50 000 9200
Sealing plug for locking mechanism, black	70 046 0716
Concrete-lined steel cover, B 125, 2-piece	70 040 2775E
Concrete-lined steel cover, D 400, 2-piece[4]	70 040 2770E
Steel frame	70 039 7480E

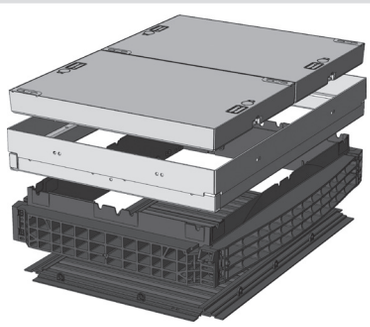
Manhole with paveable steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 338 2155
Basic kit D 400, without lock, locks retrofittable	06 338 2536
Accessories for paveable steel cover, lockable	
4 x hex locking mechanism	50 000 6300
4 x hexagon socket locking mechanism	50 000 7300
4 x LIC-LOCK locking mechanism	50 000 8300
4 x COLT/TELENET locking mechanism	50 000 9300
Sealing plug for locking mechanism, black	70 046 0716
Paveable steel cover, D 400, 2-piece[4]	70 088 2300E
Steel frame	70 088 2320E

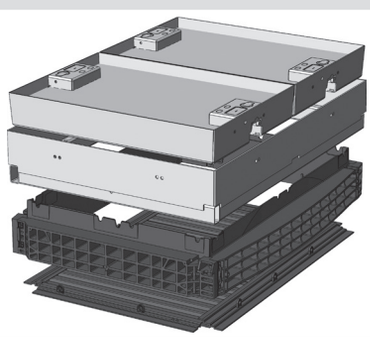
For all basic kits	**Order number**
Top frame, height 140 mm	06 338 0082E
Base plate, height 5 mm	06 338 0054E

QualityBox PC EK508
Basic kits

Clear dimensions: 800 x 1165 mm
Outer dimensions: 990 x 1330 mm

Basic kit with cast-iron cover:			**Clear height: 139 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover	194.0 kg	194.0 kg	
Single cover	97.0 kg	97.0 kg	
Hot-dip galvanised steel frame	38.0 kg	38.0 kg	
Top frame (standard height)	31.5 kg	31.5 kg	
Base plate	9.5 kg	9.5 kg	
Total weight of basic kit	**273.0 kg**	**273.0 kg**	
Overall height of basic kit	**240 mm**	**240 mm**	

Basic kit with concrete-lined steel cover:			**Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover	282.0 kg	282.0 kg	
Single cover	141.0 kg	141.0 kg	
Hot-dip galvanised steel frame	52.0 kg	52.0 kg	
Top frame (standard height)	31.5 kg	31.5 kg	
Base plate	9.5 kg	9.5 kg	
Total weight of basic kit	**375.0 kg**	**375.0 kg**	
Overall height of basic kit	**310 mm**	**310 mm**	

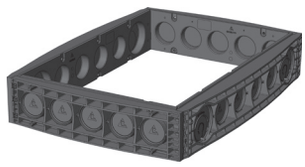
Basic kit with paveable steel cover: (paveable height 45 mm)			**Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover (non-paveable)	298.0 kg	298.0 kg	
Single cover (non-paveable)	149.0 kg	149.0 kg	
Hot-dip galvanised steel frame	63.0 kg	63.0 kg	
Top frame (standard height)	31.5 kg	31.5 kg	
Base plate	9.5 kg	9.5 kg	
Total weight of basic kit	**402.0 kg**	**402.0 kg**	
Overall height of basic kit	**355 mm**	**355 mm**	

QualityBox PC EK508
Frames / Vario Modules

Clear dimensions: 800 x 1165 mm
Outer dimensions: 990 x 1330 mm

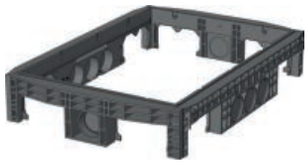
Frame 70 mm
Art. no.: 06 508 0058E
6 x Ø 50
6 x Ø 50
Weight: 10.5 kg

Frame 70 mm overbuild
Art. no.: 06 508 0358E
4 x overbuild / 2 x Ø 50
6 x Ø 50
Weight: 10.5 kg

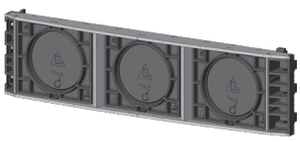


Frame 220 mm
Art. no.: 06 508 0052E
5 x Ø 110
6 x Ø 110 / 2 x Ø 160
Weight: 28.0 kg

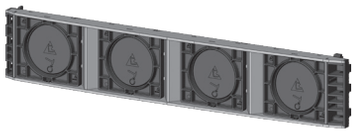
Frame 220 mm overbuild
Art. no.: 06 508 0049E
2 x rectangular / 1 x Ø 110
6 x Ø 110 / 2 x Ø 160
Weight: 27.0 kg



Frame 220 mm overbuild
Art. no.: 06 508 0055E
2 x rectangular / 1 x Ø 110
2 x rectangular / 3 x Ø 110
Weight: 27.0 kg



Vario Module
Art. no.: 06 328 0350E
CD800 3 x 160 mm



Vario Module
Art. no.: 06 338 0350E
CD1165 4 x 160 mm

QualityBox PC EK508
Order numbers

Clear dimensions: 800 x 1165 mm
Outer dimensions: 990 x 1330 mm

Manhole with cast-iron cover, lockable[4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 508 1386
Basic kit D 400, hex locking mechanism	06 508 1387
Basic kit D 400, hexagon socket locking mechanism	06 508 1388
Basic kit D 400, LIC-LOCK locking mechanism	06 508 1389
Basic kit D 400, COLT/TELENET locking mechanism	06 508 1390
Accessories for cast-iron cover, lockable	
1 x hex locking mechanism	50 000 6020
1 x hexagon socket locking mechanism	50 000 6040
1 x LIC-LOCK locking mechanism	50 000 6060
1 x COLT/TELENET locking mechanism	50 000 6080
Sealing plug for locking mechanism, black	70 046 0716
Cast-iron cover B 125, 2-piece	70 052 0070E
Cast-iron cover D 400, 2-piece[4]	70 052 0060E
Steel frame	70 034 6281E

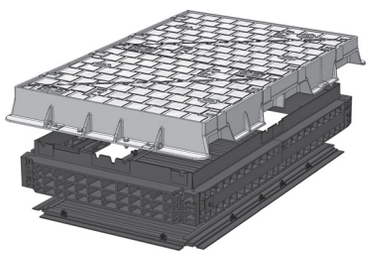
Manhole with concrete-lined steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 508 1310
Basic kit D 400, hex locking mechanism	06 508 1311
Basic kit D 400, hexagon socket locking mechanism	06 508 1312
Basic kit D 400, LIC-LOCK locking mechanism	06 508 1313
Basic kit D 400, COLT/TELENET locking mechanism	06 508 1314
Accessories for concrete-lined steel cover, lockable	
4 x hex locking mechanism	50 000 6300
4 x hexagon socket locking mechanism	50 000 7300
4 x LIC-LOCK locking mechanism	50 000 8300
4 x COLT/TELENET locking mechanism	50 000 9300
Sealing plug for locking mechanism, black	70 046 0716
Concrete-lined steel cover, B 125, 2-piece	70 046 0375E
Concrete-lined steel cover, D 400, 2-piece[4]	70 046 0370E
Steel frame	70 039 7980E

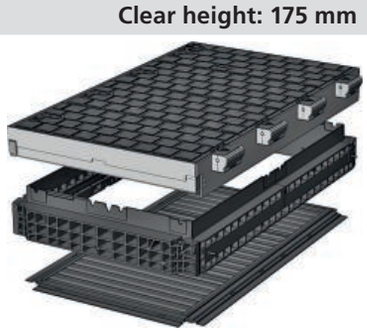
Manhole with paveable steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 508 1113
Basic kit D 400, without lock, locks retrofittable	06 508 1639
Accessories for paveable steel cover, lockable	
4 x hex locking mechanism	50 000 6300
4 x hexagon socket locking mechanism	50 000 7300
4 x LIC-LOCK locking mechanism	50 000 8300
4 x COLT/TELENET locking mechanism	50 000 9300
Sealing plug for locking mechanism, black	70 046 0716
Paveable steel cover, D 400, 2-piece[4]	70 088 2700E
Steel frame	70 088 2720E

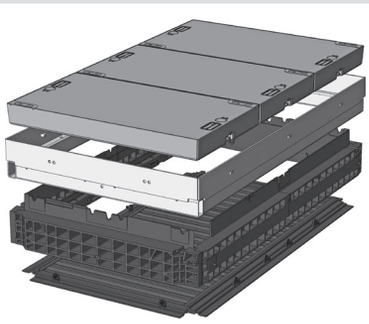
For all basic kits	**Order number**
Top frame, height 140 mm	06 508 0082E
Base plate, height 5 mm	06 508 0054E

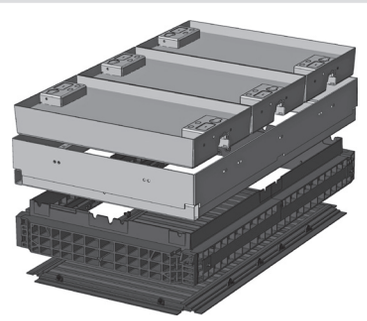
QualityBox PC EK428 basic kits

Clear dimensions: 800 x 1400 mm

Basic kit with triangular swivellingcast-iron cover:		**Outer dimensions: 1030 x 1590 mm Clear height: 135 mm**
Test classes according to DIN EN 124	**D 400**[3]	
Complete cover	315.0 kg	
Single cover	57.0 kg	
Special top frame	34.5 kg	
Base plate	10.5 kg	
Total weight of basic kit	**360.0 kg**	
Overall height of basic kit	**285 mm**	

Basic kit with rectangular swivellingcast-iron cover:		**Outer dimensions: 1240 x 1580 mm Clear height: 175 mm**
Test classes according to DIN EN 124	**D 400**[3]	
Complete cover	220.0 kg	
Single cover	55.0 kg	
Steel frame	50.0 kg	
Top frame	34.5 kg	
Base plate	10.5 kg	
Total weight of basic kit	**315.0 kg**	
Overall height of basic kit	**274 mm**	

Basic kit with concrete-lined steel cover:			**Outer dimensions: 960 x 1560 mm Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover	336.0 kg	336.0 kg	
Single cover	112.0 kg	112.0 kg	
Hot-dip galvanised steel frame	59.0 kg	59.0 kg	
Top frame (standard height)	34.5 kg	34.5 kg	
Base plate	10.5 kg	10.5 kg	
Total weight of basic kit	**440.0 kg**	**440.0 kg**	
Overall height of basic kit	**310 mm**	**310 mm**	

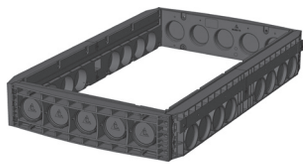
Basic kit with paveable steel cover: (paveable height 45 mm)			**Outer dimensions: 960 x 1560 mm Clear height: 190 mm**
Test classes according to DIN EN 124	**B 125**[2]	**D 400**[3]	
Complete cover (non-paveable)	367.0 kg	367.0 kg	
Single cover (non-paveable)	122.5 kg	122.5 kg	
Hot-dip galvanised steel frame	67.0 kg	67.0 kg	
Top frame (standard height)	34.5 kg	34.5 kg	
Base plate	10.5 kg	10.5 kg	
Total weight of basic kit	**479.0 kg**	**479.0 kg**	
Overall height of basic kit	**355 mm**	**355 mm**	

QualityBox PC EK428
Frames / Vario Modules

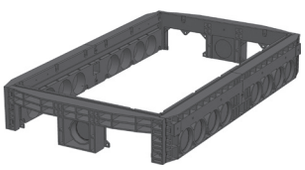
Clear dimensions: 800 x 1400 mm

Frame 70 mm
Art. no.: 06 428 0058E
6 x Ø 50
Weight: 18.0 kg

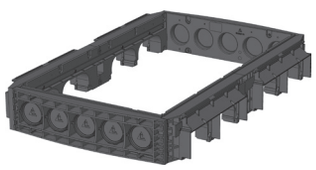
Frame 70 mm overbuild
Art. no.: 06 428 0358E
4 x overbuild / 2 x Ø 50
Weight: 18.0 kg



Frame 220 mm
Art. no.: 06 428 0052E
5 x Ø 110 / 8 x Ø 110
Weight: 45.0 kg

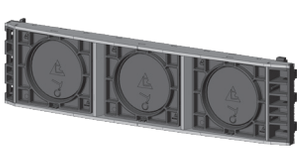


Frame 220 mm overbuild
Art. no.: 06 428 0061E
2 x rectangular / 1 x Ø 110
8 x Ø 110
Weight: 41.5 kg

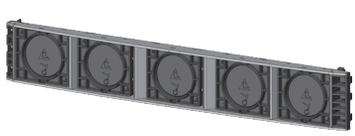


Frame 220 mm overbuild
Art. no.: 06 428 0085E
5 x Ø 110
4 x rectangular
Weight: 41.5 kg

Frame 220 mm overbuild
Art. no.: 06 428 0062E
2 x rectangular / 1 x Ø 110
4 x rectangular
Weight: 41.5 kg



Vario Module
Art. no.: 06 328 0350E
CD800 3 x 160 mm



Vario Module
Art. no.: 06 578 0350E
CD1400 5 x 160 mm

QualityBox PC EK428
Order numbers

Clear dimensions: 800 x 1400 mm

Manhole with triangular swivelling cast-iron cover, lockable[4]	**Order number**
Basic kit D 400, COLT/TELENET/OTC locking mechanism	06 428 2202
Accessories for triangular swivelling cast-iron cover, lockable	
Cast-iron cover D 400, 4-piece[4]	06 428 0281E

Manhole with rectangular swivelling cast-iron cover, lockable[4]	**Order number**
Basic kit D 400, COLT/TELENET locking mechanism	06 428 2000
Accessories for rectangular swivelling cast-iron cover, lockable	
Locking flap for locking mechanism	70 065 8202E
Cast-iron cover D 400, 4-section, with steel frame[4]	06 428 0252E
Top frame	06 428 0083E

Manhole with concrete-lined steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 428 1006
Basic kit D 400, hex locking mechanism	06 428 1010
Basic kit D 400, hexagon socket locking mechanism	06 428 1014
Basic kit D 400, LIC-LOCK locking mechanism	06 428 1011
Basic kit D 400, COLT/TELENET locking mechanism	06 428 1015
Accessories for concrete-lined steel cover, lockable	
6 x hex locking mechanism	50 000 6500
6 x hexagon socket locking mechanism	50 000 7500
6 x LIC-LOCK locking mechanism	50 000 8500
6 x COLT/TELENET locking mechanism	50 000 9500
Sealing plug for locking mechanism, black	70 046 0716
Concrete-lined steel cover, B 125, 3-piece	70 045 8675E
Concrete-lined steel cover, D 400, 3-piece[4]	70 045 8670E
Steel frame	70 042 0180E

Manhole with paveable steel cover, lockable [4]	**Order number**
Basic kit B 125, without lock, locks retrofittable	06 428 1005
Basic kit D 400, without lock, locks retrofittable	06 428 1038
Accessories for paveable steel cover, lockable	
6 x hex locking mechanism	50 000 6500
6 x hexagon socket locking mechanism	50 000 7500
6 x LIC-LOCK locking mechanism	50 000 8500
6 x COLT/TELENET locking mechanism	50 000 9500
Sealing plug for locking mechanism, black	70 046 0716
Paveable steel cover, D 400, 3-piece[4]	70 088 2800E
Steel frame D 400	70 088 2820E

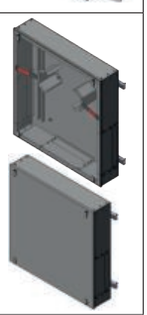
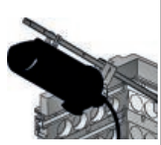
For all basic kits	
Top frame, height 140 mm	06 428 0082E
Base plate, height 5 mm	06 428 0054E

Frame **accessories**

	Order number	Product
ADAPTER • For openings Ø 110 mm • For insertion of cables or pipes		
With Ø 63 mm	06 568 0211	
With Ø 50 mm	06 568 0210	
MICRO-DUCT PIPE ADAPTER For opening Ø 110 mm | with 3 pipe inlets or micro-duct pipe bundle/cables up to Ø 50 mm	06 568 0377	
PROTECTIVE PIPE SEAL EK186 • For insertion of cables or narrow pipes • Special egg-crate foam insert to seal against ground • Hinged, can also be used with existing cables or manholes		
For opening Ø 50 mm	08 186 0050	-
For opening Ø 110 mm	08 186 3110	-
For opening Ø 160 mm	08 186 0160	-
Reducer for opening Ø 50 mm | reduced to Ø 40 mm, split	06 568 0024	

Accessories –
General

	Order number	Product
CABLE PLATE • For installation on the interior wall of the manhole • Includes installation accessories		
Cable plate for minimum bend radius of 300 mm (manholes with internal dimensions of 1,400–2,200 mm) • Mounted on the manhole wall with self-tapping screws FH 6.3 x 32 mm DIN ISO 7049 and flange sleeves	06 568 0216E	
Cable plate for minimum bend radius of 375 mm (manholes with internal dimensions of 1165–2,200 mm) • Mounted on the manhole wall with self-tapping screws FH 6.3 x 32 mm DIN ISO 7049 and flange sleeves	06 568 0215E	
Cable plate for minimum bend radius of 330 mm (manholes with internal dimension of 1,165 mm) • Powder-coated steel wire with 4x F8 x 22/7981 fastening screws and hook-and-loop fastener strips	70 065 0410	
Cable plate for minimum bend radius of 300 mm (manholes with internal dimension of 1,165 mm) • Hot-dip galvanised steel plate • With 4 F6.3 x 22/7981 fastening screws	06 568 0223	
Cable plate for minimum bend radius of 420 mm • Powder-coated steel wire with 4x F8 x 22/7981 fastening screws and hook-and-loop fastener strips	70 064 3410	

FIBRE ENCLOSURE SUPPORT/FIBRE ENCLOSURE BRACKET • For installation on interior wall of manhole, e.g. to support optical fibre enclosure • Includes installation accessories		
Fibre enclosure support, set (2x) With self-tapping screws FH 6.3 x 32 mm DIN ISO 7049 and flange sleeves	06 568 0217E	
Fibre enclosure support	70 033 8200E	
Extended box for the protected storage of cables and optical fibres 700 x 700 x 150 mm	70 087 9761	
Fibre enclosure bracket, swivelling, - for manholes with clear width 1400 mm - stainless steel, factory-fitted	70 062 3600	

Accessories –
General

	Order number	Product
FIBRE ENCLOSURE SUPPORTS		
• Swivelling telescopic fibre enclosure support for mounting on the manhole wall - with fibre enclosure mounting adapter - without strain relief for micro-duct pipes • For clear width 1165, clear width 1400 • For TE (Tyco) fibre enclosures: FIST-GCOG2-DC24-NN FIST-GCOG2-DD24-NN FIST-GCOG2-DE24-NN FIST-GCOG2-DF24-NN	063360670	
• Flexible, swivelling and 360° rotatable telescopic fibre enclosure support for mounting on cross-bars (not included / see overview of cross-bars) - with fibre enclosure mounting adapter - without strain relief for micro-duct pipes • For clear width 1165, clear width 1400 • For TE (Tyco) fibre enclosures: FIST-GCOG2-DC24-NN FIST-GCOG2-DD24-NN FIST-GCOG2-DE24-NN FIST-GCOG2-DF24-NN	063360802	
• Flexible, swivelling and 360° rotatable telescopic fibre enclosure support for mounting on cross-bars (not included / see overview of cross-bars) - with fibre enclosure mounting adapter - without strain relief for micro-duct pipes • For clear width 1165, clear width 1400 • For TE (Tyco) fibre enclosures: FIST-GCOG2-DC6-NN FIST-GCOG2-DD6-NN FIST-GCOG2-DE6-NN FIST-GCOG2-DF6-NN	063360560	
• Flexible, swivelling and 360° rotatable telescopic fibre enclosure support for mounting on cross-bars (not included / see overview of cross-bars) - with fibre enclosure mounting adapter - without strain relief for micro-duct pipes • For clear width 1165, clear width 1400 • For TE (Tyco) fibre enclosures: FIST-GCOG2-BC16-NN FIST-GCOG2-BD16-NN FIST-GCOG2-BE16-NN	063360570	

CROSS-BARS		
• For clear width 800 • 2x required per manhole	700714050	
• For clear width 550 • 2x required per manhole	700735055	

Awards

2009
German Materials Efficiency Prize
"From vehicle
roof to manhole"

2010
Environmental Prize
"From vehicle roof to manhole"

2011
Bavarian Founder Award
"Succession" category

2012
Intertraffic Innovation Award
"Charging at the light pole"

2013
WPC Innovation Award
"Product Development & Product Design" category

2015
In the Top 3 - GreenTec Awards,
"Recycling & Resources" category

2019
Inno4wood Innovation Award

2021
Top Employer German SMEs 2021

2022
F.A.Z Institute

Our expertise for the networks of today and tomorrow

www.langmatz.de

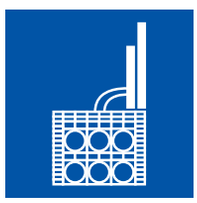
Langmatz

We will gladly send you further detailed product information for your planning.

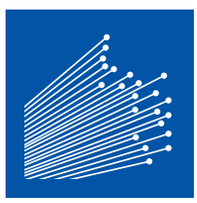
Please contact your local Langmatz representative or our head office.
Data sheets and other information can be found on our website:

www.langmatz.de

Polycarbonate manholes



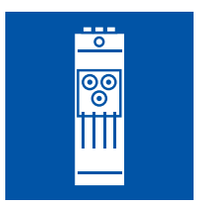
Underground distribution systems



FTTx solutions for optical fibre networks

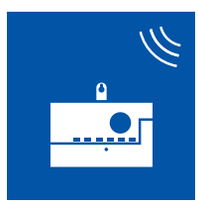
Outdoor cabinets and outdoor pedestals

Building cable & pipe entry systems



Fuse boxes

Signal requesting equipment



Radio ripple control receivers

Langmatz GmbH

Am Gschwend 10
82467 Garmisch-Partenkirchen
Germany

Phone: +49 8821/920-0
Fax: +49 8821/920-159

Email: info@langmatz.de

www.langmatz.de

Subject to technical modifications | Date of issue 09-2023