

TECHNOLOGY | SAFETY | EXPERIENCE



OPTOMER
FIBRE OPTIC TECHNOLOGY



OPTOMER SKY SYSTEM+
THE AERIAL FTTH ACCESS NETWORK

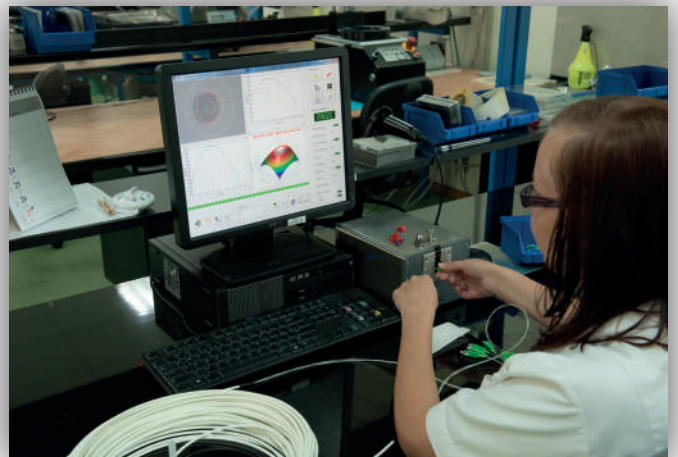
**OPTOMER - A POLISH MANUFACTURER
WITH OVER 25 YEARS OF EXPERIENCE!**



The company's head office and production hall are based in Lodz, Poland.



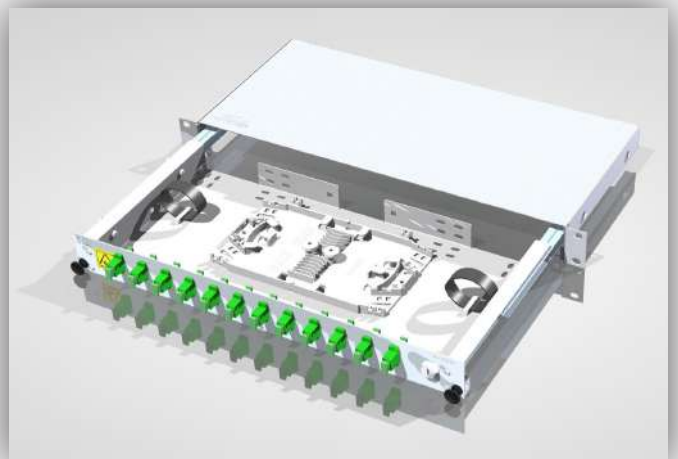
The company is very flexible in terms of making customised products thank to all production facilities and offices are placed in one location.



All products are checked for quality, according to ISO-9001:2008.



OPTOMER offer training sessions and consultancy in fibre optic technology.



Supporting designers by publishing DWG and PDF 3D files.

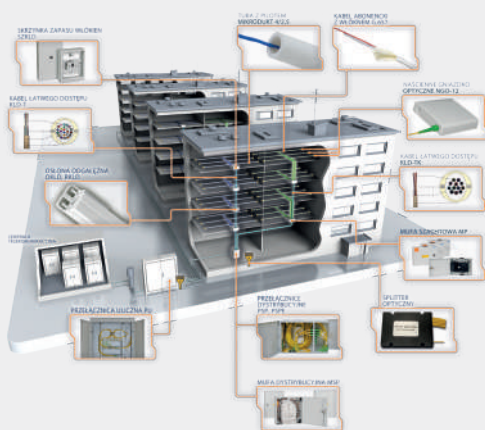
EXAMPLES OF PROJECTS



Providing products for The Intelligent Transport System in Lodz.



OPTOMER's products were used for building and modernisation of fibre optic infrastructure in, among others, train line Działdowo - Olsztyn and LCS Konin.



OPTOMER is one of the main supplier of FTTH solutions for main Polish telecoms, such as Orange and Netia.



The company also offer solutions for FTTA, that can be used for a GSM and LTE base stations.



The central office equipment: central office cabinets, patchpanels, patchcords, adapters and cable ducts.



Optomer Sky System+ is an innovative solution for aerial networks, built with Aerial Easy Access Cable.

OPTOMER SKY SYSTEM + PROJECTS



OPTOMER SKY SYSTEM + is an innovative solution for aerial networks. Small number of components, short installation time and cost reduction.



Example aerial network OPTOMER SKY SYSTEM + was built on the housing estate in Warsaw



Using an aerial easy access cable OSS+KLD/ADSS enables quick and convenient customer connection.



OSS+SD-KLD distribution box protects fibre module access point. The customer is connected with ADSS OSS+RA subscriber tube, by pushing or pulling the fibre.



OSS+PSHN Pole Hermetic Distribution Box provides gradual expansion of the customer capacity, simply by installing additional splitters.

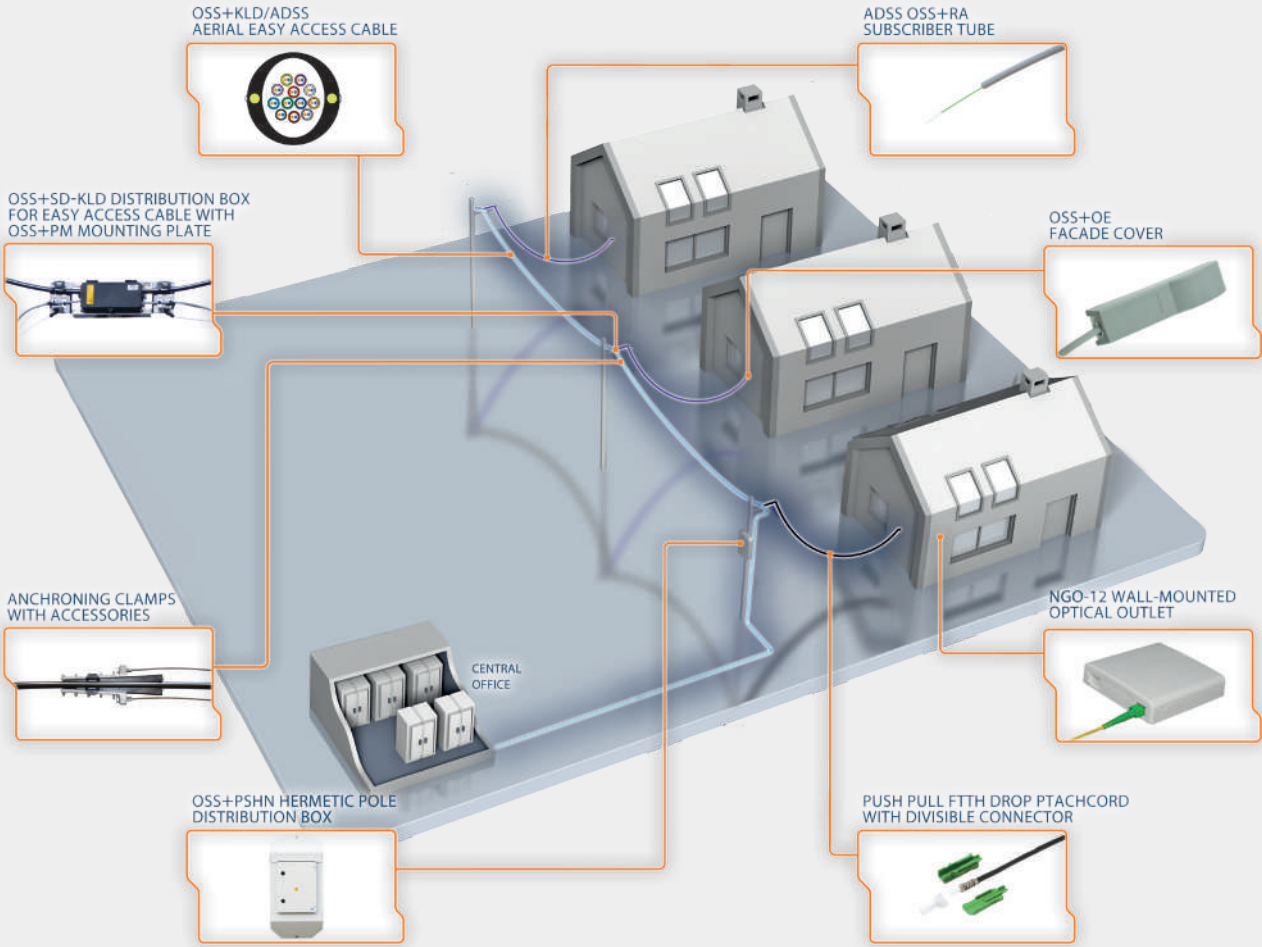


Apart from a technical support OPTOMER offer professional FTTH aerial network training courses.

OPTOMER SKY SYSTEM + SYSTEM ARCHITECTURE

A development of fibre optic access networks is growing rapidly around the world. The access to broadband services is becoming an indicator of a level of development of a country. It creates a challenge to connect as many subscribers as possible in the shortest time. The connection must be reliable independently from client's location and done in the most economical way.

A detailed analysis of market needs had helped us to offer a groundbreaking solution. OPTOMER SKY SYSTEM+ (OSS+) is an answer to service providers' needs. Thanks to a simple construction OSS+ is easy to design, cheap, convenient and fast in installation. The idea allows to quickly connect new subscribers, both B2C and B2B. In addition, the system is flexible and can be fit to any conditions. The range of the network built in OSS+ system is basically unlimited, because each end can be extended to start a new network branch.



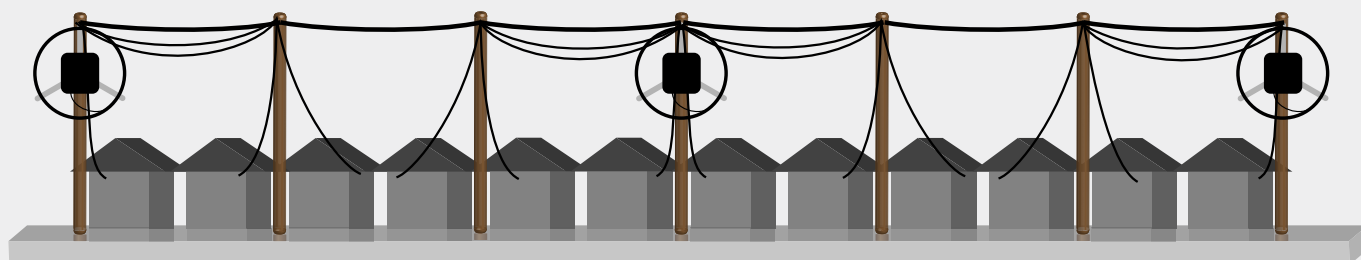
OPTOMER SKY SYSTEM + on the housing estate

ADVANTAGES OF OSS+ COMPARED TO TRADITIONAL AERIAL NETWORKS

OPTOMER SKY SYSTEM + is dedicated to aerial networks. It is designed for both rural and urban areas. It is possible to design and build the network in the most optimised way and with the possibility to extend it in the future. In the traditional aerial networks based on poles it is necessary to use cable spare length frame every second or every third pole.

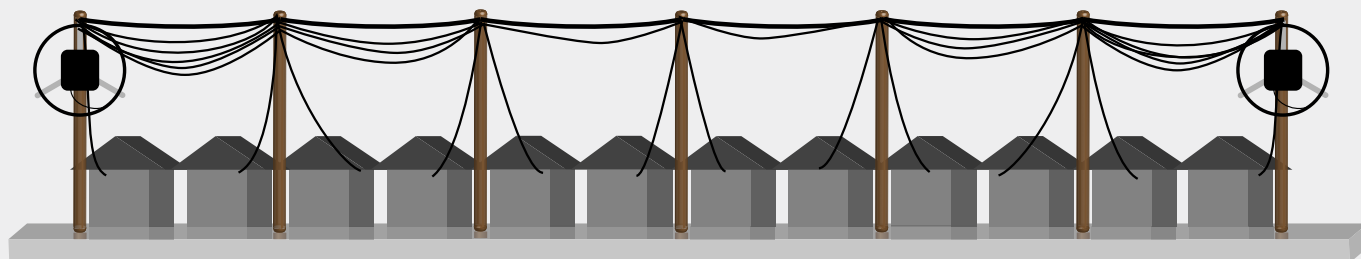
A spare length of the cable is gathered in the frame, which enables conducting any kind of operations, such as splicing on the ground. The placement and number of frames must be predicted at the beginning of the investment, to enable network reconfiguration at the given point. However the optical closure can be added to the already existing cable only at the time of connecting subscriber.

In such traditionally built networks the subscriber cable must be led from a subscriber to the nearest closure. Very often it means leading many subscriber cables along with the easy access cable. This solution strains the pole unnecessarily, increase the quantity of used material and costs of installation. What is more, each subscriber's connection means opening a optical closure and preparing cable spare length once again. The installer also needs to think about the time necessary for making a splice for each newly connected client.



Traditional aerial network with densely placed spare length cable frames.

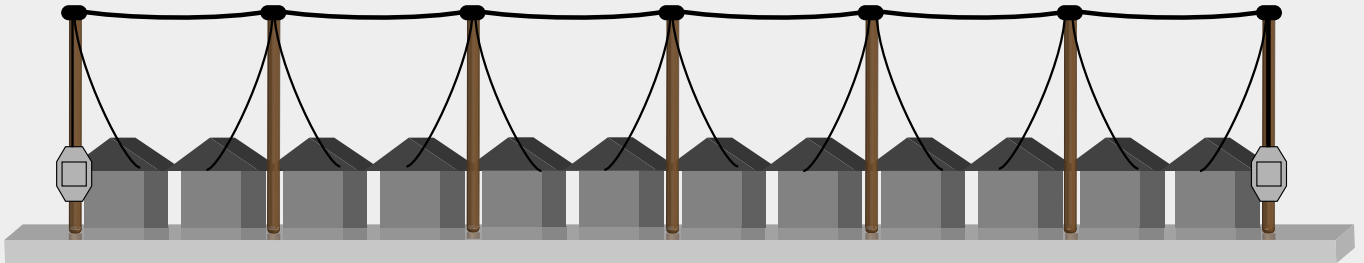
To reduce expenses of building a traditional aerial network some companies decide to increase the distance between optical closures. It lets to decrease the number of spare length cable frames, cable and closures used for installation. Surprisingly this can cause even higher load of all unfavorable factors mentioned before. The necessity of using a higher number of cables and equipment with each new connection means that the total cost of installation is a lot higher that with the network where such „savings“ were not used.



Traditional aerial network with spare length cable frames located in a large distance.

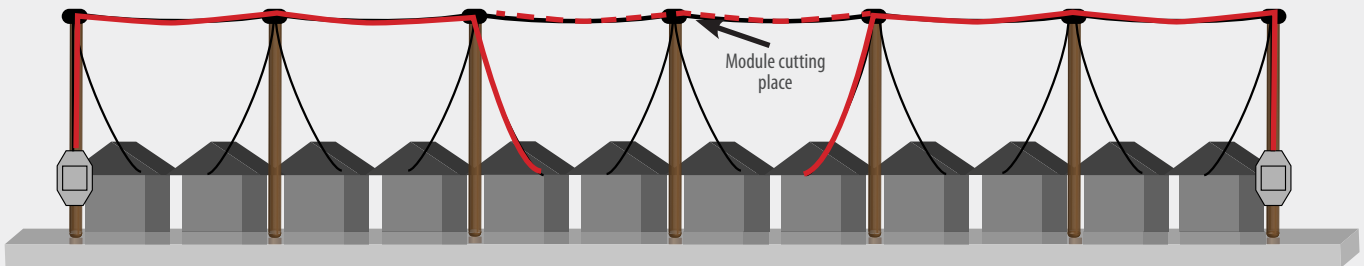
ADVANTAGES OF OSS+ IN COMPARISON TO TRADITIONAL AERIAL NETWORKS

In OSS+ the distance between optical closures does not have any influence on the number of materials needed to connect a subscriber, because the client is being connected always from the nearest pole and there is no need to lead many cables along the cable track. It helps to optimize the access network in the way not reachable for the traditional aerial system.



A network based on Optomer Sky System+.

OSS+ provides an unusual way of fibre management due to the fact that subscriber's fibre is already present in the easy access cable used in the system. It eliminates the necessity of splicing for each new subscriber in the closure while connecting, because all fibres are already spliced in OSS+PSHN pole distribution box right at the beginning. Additionally it is possible to use one module for 2 subscribers, because we can terminate both fibres of the easy access cable in OSS+PSHN pole distribution box. When we cut a single module to connect the subscriber in one of the distribution boxes we free the fibre terminated in another distribution box. It can be used to provide the service to another subscriber or as a spare in case of any unexpected situations.



Possibility to connect two subscribers with one module (from 2 directions).

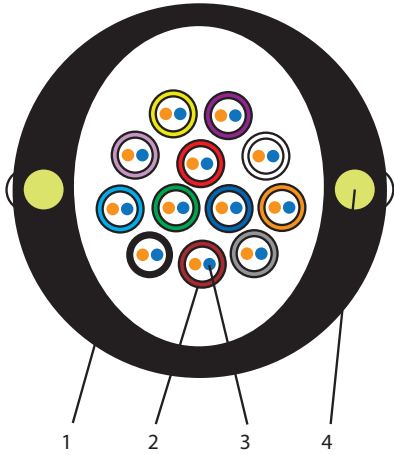


Fibre splicing in OSS+PSHN in a service tent.

Pole distribution boxes OSS+PSHN are designed to be mounted relatively low, which eliminates the necessity of gathering spare length of the fibre that is usually needed to take a distribution box from the pole. It also lets to save time to connect a new subscriber (the installer does not need to climb a ladder to reach the splitter). It is still possible to gather spare fibre length in a distribution box, because it is integrated with a housing designed especially for this purpose. This outer housing can be quickly dismounted to take the distribution box out to the service car.

OSS+KLD/ADSS AERIAL EASY ACCESS CABLE

OSS+KLD/ADSS
Aerial Easy Access Cable



1. HDPE outer sheath, UV-stabilised
2. fibre modules filled with hydrophobic gel
3. optical fibres
4. FRP glassfibre strength members

FEATURES:

- designed for aerial FTTH networks
- universal, self-supporting cable with 2 strength members inside the outer sheath made of fibre reinforced plastic (FRP) glassfiber
- outer sheath is made of UV stabilised mechanically durable MDPE
- the access to modules with fibres in an easy access cable is performed by window cuts (the location of strength members is indicated by white strips along the cable)
- Modules taken out of the cable are pushed or pulled to ADSS subscriber tubes
- quick and easy installation, no special tools needed
- each module is filled with hydrophobic gel and contains 2 fibres, 4, 8 and 12 fibres per module available on request

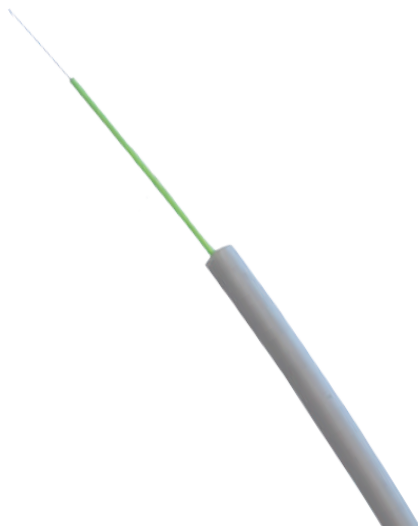
TECHNICAL SPECIFICATION:

	OSS+KLD/ADSS
sheath material	HDPE
application	outdoor, indoor, aeria
module count	12/24/48
module fibre count	2/4
outer cable diameter [mm]	15
inner cable diameter [mm]	9
bending radius [mm]	150
weight [kg/km]	129
fibre type	G.652D/G.657A1/G.657A2 (ITU-T)
fibre manufacturer	Corning

ORDERING:

OSS+KLD/ADSS-24-12X2/G657A2 – Aerial ADSS Easy Access Cable ADSS 24J (2x12) OPTOMER Sky System +, G657A2 fibre

ADSS OSS+RA SUBSCRIBER TUBE



ADSS OSS+RA
Subscriber tube

FEATURES:

- designed for connecting subscribers in aerial networks
- it is a universal ADSS tube with 2 strength members made of FRP fibreglass, inside the outer sheath
- outer sheath is made of UV stabilised, mechanically durable HDPE polyethylen
- fibres from easy access cable modules are pushed in or pulled into the tube
- it enables easy module management and subscriber connections
- available with pullcord
- quick and easy installation, no special tools needed

TECHNICAL SPECIFICATION:

	OSS+RA/ADSS-7/3,7	OSS+RA/ADSS-12/8
sheath material	HDPE	
application	indoor, outdoor and aerial	
outer tube diameter [mm]	7	12
weigh [mm]	3,7	8
weight [kg/km]	31	71
bending radius [mm]	120	120

ORDERING:

OSS+RA/ADSS-7/3,7p – ADSS Subscriber Tube OPTOMER Sky System + 7/3,7 mm with Pullcord, Reinforced, UV Stabilised

OSS+SD-KLD DISTRIBUTION BOX FOR EASY ACCESS CABLE

FEATURES:

- the box is a part of a system that enables quick and easy connection of subscribers to aerial networks
- it is a protection for ADSS multifibre aerial easy access cable in a branching place
- access to fibres in easy access cable is possible by cutting an access window in its outer sheath. It enables taking modules with fibres out and connecting new subscribers
- modules taken out of the cable can be pulled in or pushed into ADSS subscriber tube
- quick and easy installation, no need to use special tools
- the box should be ordered together with OSS+PM mounting plate

TECHNICAL SPECIFICATION:

	OSS+SD-KLD
sheath material	HDPE, PP, fibreglass
application	indoor, outdoor, aerial
number of ports for a distribution cable	2
number of ports for a subscriber cable	4
nominal distribution cable diameter [mm]	15
nominal subscriber tube diameter [mm]	7
dimension length/weight/height [mm]	195/100/30
environmental protection	IP68
cable sealing system	rubber seals
lid to base sealing system	rubber seals

ORDERING:

OSS+SD-KLD – Distribution Box for Easy Access Cable OPTOMER Sky System +



OSS+SD-KLD distribution box for easy access cable with a mounting plate OSS+PM

OSS+PM MOUNTING PLATE

FEATURES:

- supports OSS+SD-KLD distribution box for easy access cable
- quick and easy installation with a stainless steel strap OSS-TS-50-M

TECHNICAL SPECIFICATION:

	OSS+PM
sheath material	stainless steel
application	indoor, outdoor, aerial
dimension length/weight/height [mm]	363/101/37,2

ORDERING:

OSS+PM – Mounting Plate OPTOMER Sky System+ for mounting a Distribution Box OSS+SD-KLD



OSS+PM Mounting Plate

OSS+PSHN HERMETIC POLE DISTRIBUTION BOX



OSS+PSHN Hermetic Pole Distribution Box

FEATURES:

- designed mostly for PON networks
- pole installation
- it enables gradual connection of subscribers by adding splitters
- it is suitable for both underground and aerial cables
- the distribution box consists of an inner box with an environmental protection IP65 and outer box protecting the cable reserve
- compact housing with cable entries on the bottom
- changable door with a two-point bolt, locks available on request
- all metal accessories are corrosion resistant
- there are 3 areas inside the box: subscriber area, for mounting subscriber cables and for splicing and gathering pigtails and fibres; splicing area, for splicing fibres incoming to splitters and gathering splitters; adapter plate
- access to the box is enabled for cables coming down from the pole and coming up from the ground
- corrosion resistant and mechanically durable

TECHNICAL SPECIFICATION:

	OSS+ PSHN-12	OSS+ PSHN-24	OSS+ PSHN-48	OSS+ PSHN-72	OSS+ PSHN-96	OSS+ PSHN-144
dimension weight/height/diameter [mm]	440/880/220		564/930/250		654/1030/250	
number of optical splitters (max. dimension: 140x115x18 mm)	2		3		3	
recommended minimum length of splitter outputs [m]	1					
recommended minimum length of splitter inputs [m]	2					
number of splices on the subscriber side	12	24	48	72	96	144
connectors	SC, SC Duplex					
number of splice trays / number of splices per tray (subscriber side)	1/24		2/24	3/24	4/24	6/24
number of splice trays / number of splices per tray (distribution side)	1/24					
recommended pigtail length [m]	2					
maximum number of distributor cable entries	2					
incoming subscriber cable diameter [mm]	7					
incoming distribution cable diameter [mm]	4-15					
number of connectors on subscriber side	12	24	48	72	144	
number of connectors on feeder side	12					
material: inner box/outer box/equipment	polyester/aluminum/ABS					
possibility of entering an uncut cable loop	yes					

EQUIPMENT:

- hermetic housing
- housing protecting a cable
- uncut cable loop entry
- lock
- PSPH inset
- subscriber side splice tray
- distribution side splice tray
- TK – 20/5 cable tie
- TK – 9/3 cable tie
- protective band for tight buffered fibre
- table - descriptive label
- DP cable gland
- splittable cable entry

ORDERING:

OSS+PSHN-12 - Hermetic Pole Distribution Box OSS+ for 12 subscribers, IP65, housing for cable reserve

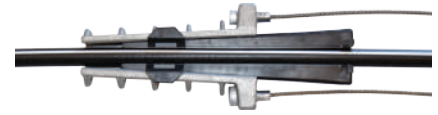
OSS-ZO-ADSS-X-M ANCHORING CLAMP

FEATURES:

- designed for pole aerial networks
- dedicated for ADSS cables with diameter from 4 mm to 20 mm
- the body is made of highly durable UV-stabilised plastic and aluminum alloy
- stainless steel suspension cord
- cable tension reduction
- maximum installation length is 100 m
- available in different options, depending on cable diameter

TECHNICAL SPECIFICATION:

	OSS-ZO-ADSS-X-M
material	thermoplastic, aluminum alloy and steel suspension cord
application	aerial
cable diameter [mm]	4 - 20
minimum breaking force [daN]	400 ± 100
maximum span distance	100
fibre manufacturer	Malico / Sicame



*OSS-ZO-ADSS-X-M
Anchoring Clamp*

OSS-ZO-A-OK-04-06-M ANCHORING CLAMP

FEATURES:

- designed for pole aerial networks
- dedicated for ADSS cables with diameter from 4,2 mm to 6 mm
- provides bending radius ≤ 30 mm
- made of high quality, UV-stabilised material
- easy installation, no need to use special tools

TECHNICAL SPECIFICATION:

	OSS-ZO-A-OK-04-06-M
material	UV-stabilised thermoplastic
application	aerial
cable diameter [mm]	4,2 - 6,0
clamp durability [N]	800
weight [kg]	0,03
fibre manufacturer	Malico / Sicame



*OSS-ZO-A-OK-04-06-M
Anchoring Clamp*

OSS-ZO-A-P-03-06-M ANCHORING CLAMP

FEATURES:

- designed for pole aerial networks
- dedicated for ADSS cables with diameter from 3 mm to 6 mm
- cable tension reduction
- made of high quality, UV-stabilised material
- easy installation, no need to use special tools

TECHNICAL SPECIFICATION:

	OSS-ZO-A-P-03-06-M
material	thermoplastic, UV-stabilised
application	aerial
cable diameter [mm]	3 - 6
	4 - 7
maximum span distance [m]	70
minimum breaking force [daN]	160
weight [kg]	0,03
fibre manufacturer	Malico / Sicame



*OSS-ZO-A-P-03-06-M
Anchoring Clamp*

OSS-UD-M-7/30 SPACER



*OSS-UD-M-7/30
Spacer*

FEATURES:

- designed to keep the correct distance when leading aerial cables along poles and facades
- mounting with a steel strap or screw
- made of UV-stabilised material

TECHNICAL SPECIFICATION:

	OSS-UD-M-7/30
material	UV-stabilised
application	aerial
cable diameter [mm]	7 - 30
fibre manufacturer	Malico / Sicame

ORDERING:

OSS-UD-M-7/30 - Optomer Sky System Spacer 7/30

OSS-WS-U-M POLE UNIVERSAL BRACKET



*OSS-WS-U-M
Pole Universal Bracket*

FEATURES:

- designed for aerial networks based on poles
- made of aluminum
- possibility to install up to 4 anchoring clamps
- suitable for all types of poles
- mounting with a steel strap or M14 or M16 screw

TECHNICAL SPECIFICATION:

	OSS-WS-U-M
material	stop aluminium
application	napowietrzne
minimalna siła zrywająca [daN]	od 1700 do 2700
weight [kg]	0,22
fibre manufacturer	Malico / Sicame

ORDERING:

OSS-WS-U-M - Pole Universal Bracket OSS-WS-U-M

OSS-SH-M HOOK SCREW



*OSS-SH-M
Hook Screw*

FEATURES:

- dedicated for fixing a subscriber tube to the building facades
- made of hot-dip galvanised steel, corrosion-resistant
- M12 thread
- available in various lengths of threaded rods

TECHNICAL SPECIFICATION:

	OSS-SH-M
material	hot-dip galvanised steel
application	aerial
zakresy długości instalacyjnej [mm]	140, 160, 200, 250, 300, 350, 400
typ gwinta	M12

ORDERING:

OSS-SH-M - Hook Screw OPTOMER Sky System (with expansion pin)

OSS-TS-50-M STAINLESS STEEL STRAP

FEATURES:

- used for mounting cable equipment on poles
- made of corrosion-resistant steel
- delivered in 50m reels

TECHNICAL SPECIFICATION:

	OSS-TS-50-M
material	corrosion-resistance steel
application	aerial
length [m]	50
dimensions width/thickness [mm]	20/0,7
fibre manufacturer	Malico / Sicame

ORDERING:

OSS-TS-50-M - Steel Strap OPTOMER Sky System



*OSS-TS-50-M
Stainless Steel Strap*

OSS-TS-Z-20-M STAINLESS STEEL STRAP BUCKLES

FEATURES:

- used for mounting cable equipment to poles
- made of corrosion-resistant steel
- delivered in bags of 100pcs

TECHNICAL SPECIFICATION:

	OSS-TS-Z-20-M
material	corrosion-resistance steel
application	aerial
fibre manufacturer	Malico / Sicame

ORDERING:

OSS-TS-Z-20-M - Stainless Steel Tape Buckles OPTOMER Sky System



*OSS-TS-Z-20-M
Stainless Steel Strap Buckles*

OSS+OE SUBSCRIBER TUBE FACADE LEAD-IN POINT

FEATURES:

- used to protect a subscriber ADSS tube in an entry point
- dedicated for tube/cable with 13mm outer diameter
- quick and easy installation, no need to use special tools
- aesthetic appearance

TECHNICAL SPECIFICATION:

	OSS+OE
sheath material	ABS
application	outdoor, aerial
number of ports for tube/cable	1
maximum diameter of tube/cable [mm]	13
nominal diameter of subscriber tube [mm]	7
dimensions length/width/height [mm]	180/36/36

ORDERING:

OSS+OE - Subscriber Tube Facade Lead-in Point OPTOMER Sky System+



*OSS+OE Subscriber Tube
Facade Lead-in Point*

CORRUGATED PROTECTIVE TUBE



Corrugated Protective Tube

FEATURES:

- provides protection for distribution cable inside and between racks
- highly durable to bending and mechanical damages
- available in different types: with pullcord, splittable, UV-stabilised, halogen-free, self-extinguishing, for outdoor applications

	diameter inner/outer [mm]	type
WO-16	10,5/16,0	black with a pullcord - self-extinguishing, UV-stabilised, for distributions drop cables protection
WO-20	15,0/20,0	
WO-25	19,0/25,0	
WO-32	26,0/32,0	
WO-40	33,0/40,0	
WO-50	43,0/50,0	
WO/LSZH-15	11,4/15,0	black with pullcord - self-extinguishing, halogen-free, UV-stabilised, for distribution and drop cables protection
WO/LSZH-21	16,0/21,0	
WO/LSZH-25	21,0/25,0	
WO/LSZH-32	26,0/32,0	
WO/LSZH-40	32,0/40,0	
WO/LSZH-52	44,0/52,0	
WOD-10B	8,7/13,6	splittable corrugated tube, UV-stabilised, for drop cables protection
WOD-14B	12,5/18,5	
WOD-20B	19,5/25,5	
WOD-23B	24,2/31,0	
WO/SP-PU-30	30,0/36,0	corrugated tube, UV-stabilised, for indoor application

WALL-MOUNTED OPTICAL OUTLET NGO-12



*NGO-12
Wall-Mounted Optical Outlet*

FEATURES:

- network termination in customer's apartment
- installed directly on the wall or on flush-mounting box ø 60
- maximum capacity: 2 SC connectors or 4 LC connectors, 2 splice protectors
- 2 heatshrink splice protectors or 2 mechanical splices
- access to adapters protected by automatically closing shutters

EQUIPMENT:

- installation and handling instruction
- installation kit
- optionally with an adapter and pigtail

TECHNICAL SPECIFICATION:

	NGO-12
maximum number of splices	4
number of patching fields	2 x E-2000/SC/LC Duplex
total pigtail spare length (0.9 mm buffered fibre) [m]	4
total pigtail spare length (2mm cable) [m]	1
dimensions: width/height/depth [mm]	86/86/25
weight [kg]	0,08
housing material	ABS V0
colour	RAL 9016
mechanical IK protection	IK08
environmental IP protection	IP54

ORDERING:

NGO-12-1SCA – Wall-Mounted Fibre Optical Outlet, equipped with 1 pigtail and SC/APC adapter



*NGO-12
Wall-Mounted Optical Outlet*

PUSH PULL FTTH DROP PATCHCORD WITH DIVISIBLE CONNECTOR

FEATURES:

- innovative patchcord with patented factory terminated and polished connector with no need to use optical splicer
- superior mechanical and environmental performance, designed for indoor and outdoor installation
- pulling / pushing through a hole with diameter 4.5mm
- no tool installation system reduces time and costs
- excellent geometrical and optical parameters
- LSZH and UV resistant outer sheath

FEATURES:

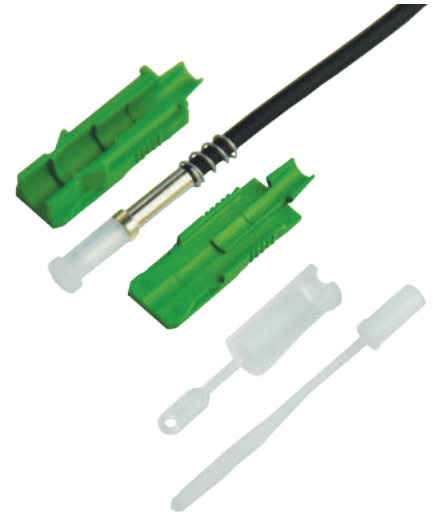
- patent application: P.423729
- industrial design right: 004417558-0001

TECHNICAL SPECIFICATION OF THE CONNECTOR:

standard	TIA / EIA 604-3 (SC)
connector type	SC
ferrule type	UPC, APC
insertion loss [dB]	0,3
return loss [dB]	≥ 50 dla UPC, ≥ 60 dla APC
tensile strength [N]	100
operating temperature [°C]	od -40 do +75

TECHNICAL SPECIFICATION OF THE CABLE:

standard	IEC794-1, EIA455
cross-section	round
fibre type	SM (G657A1, G657A2, G657B3)
cable diameter	3,0
outer sheath colour	black, grey
outer sheath thickness [mm]	0,4
outer sheath type	LSZH, UV resistant
unit weight [kg/km]	8
maximum tensile strength [N]	1000
bending radius	20 x outer cable diameter
operating temperature [°C]	od -40 do +70



*Push Pull FTTH Drop Patchcord
with Divisible Connector*



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