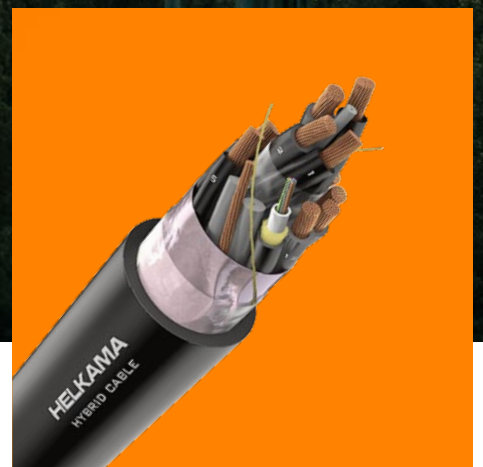


WELCOME TO A HIGHER LEVEL

HIGH QUALITY TELECOM CABLES WITH
HIGH LEVEL CUSTOMER SERVICE



HELKAMA
THE PERFECT CONNECTION

HELKAMA \ TELECOM

WHO WE ARE



Helkama has over half a century of experience in the development and production of Marine and Telecom cables. Working with the biggest partners in the marine sector for many years, we have learned to operate fluently on an international level. We have continued to grow our business and develop our in-house expertise over the years. Our R&D department is always bringing their A-game to the playing field, and that playing field is the one we effortlessly share with huge and rigid cable manufacturer giants.

But, we have a significant advantage to the other players: we are flexible, able to react fast and fully capable of customizing every cable. Every time. We are big enough to dare, small enough to care. And we care, about our customers and about finding the perfect cabling solution for every project, big or small.

Our extensive knowledge in cabling, in-house R&D department and highest level of customer service makes it possible for us to be flexible according to each project's

changing needs. We take pride in always providing our customers with the product they need, when they need it. We at Helkama do not offer ready solutions or set product packages, unless that is what our customers want. We strive to understand each customer's specific needs and always tailor the solution to fit the project.

Helkama Telecom Cables catalogue introduces the possibilities of the Helkama telecom cable portfolio, and provides solution options for different Telecom applications. Our range of expertise in telecom cabling goes beyond what could ever fit inside any conventional catalogue. But we tried, anyway.

We are flexible, and it's not just a slogan made up by a clever marketing team. It is who we truly are, what we do and what we are the best in the field at!



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↑ HIGH QUALITY CABLES WITH HIGH QUALITY SERVICE

We have produced telecommunication cables since 1964. Our cable portfolio covers all major cable needs for land-based requirements, such as telecom cell towers and data centers.



WE'LL TAKE YOU HIGHER

Helkama offers a full range of cable products for land-based applications such as telecommunication towers, rooftop solutions, data centers, housing, and industrial needs. Additionally, we offer a wide range of customized cables so you can get an optimal solution.



**POWER CABLES
OPTICAL FIBER CABLES
HYBRID CABLES**

GET TO KNOW OUR SOLUTIONS →

WE'VE GOT THE POWER. FOR YOUR TOWER.

POWER CABLES

Helkama manufactures a variety of PTTX cables, always designed and produced according to customers' needs.

CONDUCTORS

From single wire to 12 pairs, with either IEC or UL specified Class 2 or Class 5 conductors or a mixed cross section of conductors combined in one cable, designed according to cable use and installation needs.

CORE IDENTIFICATION

Conductor coding and markings can be customized, either black or white base with number codes, using various different colour codes or a combination of both.

SHIELDING/ARMOUR

We can offer different approaches for shielding of power cables. Copper braid or copper tape shielding for traditional copper conductor cables, aluminium polyester tape for tinned copper conductors, or for reduced copper usage and lower coverage percentage concentric conductors with copper binding tape.

SHEATH

All Helkama cables are manufactured using halogen-free XLPE and thermoplastic insulation according to various standards.

EXTERNAL SHIELDING

For challenging outdoor environments, we can offer corrugated steel or aluminium shielding. Cables can even be bird proofed using a nylon-shielding layer on top of the cable.

EXAMPLES OF HELKAMA POWER CABLES





↑ HIGHER, FASTER, STRONGER

As a company, we exist to serve our customers and we strive to deliver only the best. We're all about quality, flexibility, and outstanding customer service.

TWO'S COMPANY, THREE'S A CLOUD.

OPTICAL FIBER CABLES

Helkama offers optical fiber cables with slotted core structures according to customer specifications.

CORE DESIGN

Slotted core cables with either Single-mode or Multi mode fibers. The slotted core structure provides superior mechanical protection for the fibers. No grease, enabling easier installation on site.

WATER BLOCKING

Water swellable tape available to protect the fibers from water.

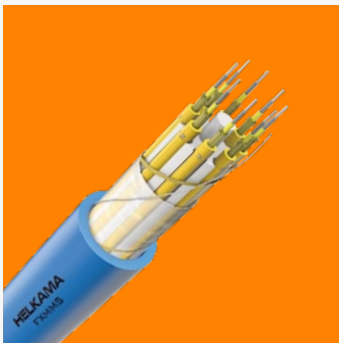
SHEATH

Fiber optic cables are manufactured using LSZH thermoplastic insulation according to various standards. Sheath colours can be fully customized according to design specifications. Flame retardant and fire-resistant options are also available.

EXTERNAL SHIELDING

Cables are available for indoor or outdoor use, or for direct burial. For challenging outdoor environments, we can offer corrugated steel tape shielding. Cables can even be bird proofed using a nylon-shielding layer on top of the cable.

EXAMPLES OF OPTICAL FIBER CABLES



↑ FXMMS

Halogen-free installation cable for indoor use. Aramid binding yarns. Slotted core construction.



↑ LIFECORD FRHF (F)

Fire-resistant optical fiber cable for indoor application.



↑ FXMSU 900 µm

Halogen-free optical fiber cable with 900 µm tight-buffered fiber for indoor/outdoor application.



↑ WORLDWIDE HIGH FIVE!

Did you know that the first operational 5G services in the world were made with Helkama cables?

KEEP IT TOGETHER. WITH A HYBRID.

HYBRID CABLES

Being a forerunner in the telecom field Helkama manufactures Telecom hybrid cables with completely customized structures and designs. Our R&D department can help design the perfect hybrid for every application.

CORE DESIGN

Helkama offers both loose tube and slotted core based hybrid cables.

CONDUCTORS

Typical structure consists of 6 to 18 conductors for 3 to 9 radios' power supply, sizes 6-16 mm² or #8 - #4 AWG conductors. Hybrid cables for AC voltage feeding with 3 power conductors.

CUSTOMIZED STRUCTURES

A single hybrid cable can consist of mixed copper wire sizes for power feeding, Remote Electrical Tilt control wires, fiber optics and LAN (CAT) cables. Small jumper cable for single radio can consist of two wires for power supply and 1-3 fiber pairs for data, according to radio design requirements.

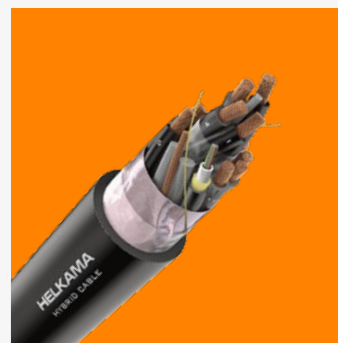
SHEATH

All Helkama cables are manufactured using halogen-free XLPE and thermoplastic insulation according to various standards.

EXTERNAL SHIELDING

For challenging outdoor environments, we can offer corrugated steel shielding. Cables can even be bird proofed using a nylon-shielding layer on top of the cable.

EXAMPLES OF HELKAMA HYBRID CABLES





↑ REFERENCE: LUXTURRIM 5G

We have worked with Nokia on the LuxTurrim 5G smart city ecosystem. One of its pilot applications is a self-driving shuttle bus between Nokia's headquarters and the train station. The smart poles along the route are equipped with Helkama cables.

IT'S THE IZING ON THE CAKE: CUSTOMIZING, OPTIMIZING AND MINIMIZING.

CABLING SOLUTIONS

The solution for all types of cabling needs. Helkama offers two complete hybrid cable solutions for mobile networks and the Telecom infrastructure: Fan Out solution and Junction Cabinet solution.

Fan Out solution is custom made for Smart City applications, for both towers and rooftops. Junction Cabinet solution is suitable for indoor or outdoor use, and saves remarkably on installation time where the assembly of power and fiber jumpers needs to be done on site.

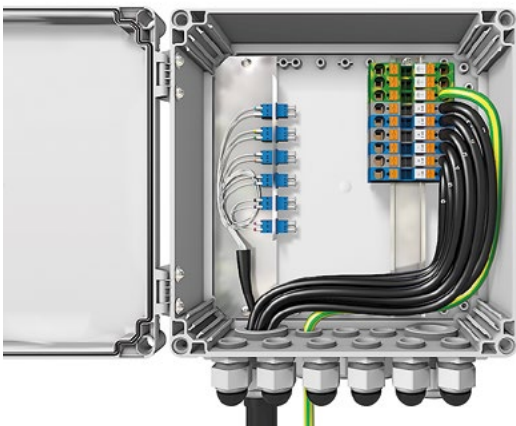


HELKAMA HYBRID FAN OUT SOLUTION

A plug and play solution, with both cable ends equipped with customer specific fiber optic connectors and blunt cut power conductors. Shrinkage joint rating is IP 65 at separation point. The Helkama Fan Out cable harness serves three Remote Radio (RRU) or Active Antenna (AAU) Units. One power pair and one to three fiber optic pairs to each Unit.

The key benefit of this solution is an uninterrupted fiber optic cable from the base station to the radio unit, without any splices or connectors.

The Helkama Hybrid Fan Out is the smallest, most lightweight and reliable solution on the market for this purpose.



HELKAMA JUNCTION CABINET SOLUTION

A plastic enclosure for indoor or outdoor solutions. Enclosure rating is IP65. Suitable for solutions where power and fiber jumpers' assembly needs to be done at the site.



↑ FROM THE HIGH NORTH WITH HIGH STANDARDS

When measuring cable quality, reliability and mechanical properties are the most important factors. Born in the north, all our cables are designed to withstand extreme conditions, making them a reliable choice even under the toughest conditions.

BENEFITS OF HELKAMA HYBRID CABLE SOLUTION

Having only one cabinet to install saves remarkably on installation time, reduces both weight and the needed space, and minimizes wind load.

There are also further benefits for design, logistics and assembly. One common challenge is minimizing cable scrap: Cabling costs are approximately 30% of the total site costs, and with an average cabling scrap rate of 17%, it equals to 5% of the total site cost.

The Helkama Hybrid Cable solution minimizes cable scrap costs due to simplified cabling systems from design to assembly. Installation time can also be minimized by customizing the number of cables and accessories.

DESIGN BENEFITS

There is always a risk for cables ending up being too short or too long if the site survey is not done perfectly. The Helkama Hybrid Cable solution offers flexibility for the cable length by two ways: Using jumper cables at the top of the mast, the cable length can be adjusted up to 10 meters (± 5 m). At the base station, the possible extra length of cable can be ribbed out 5-10 meters and power conductors can be cut as needed. The extra fibers (250 μm) can be coiled inside the Fiber Optical terminal.

LOGISTICS BENEFITS

Minimizing the number of items on site and sourcing the equipment from one supplier minimizes the risks for misunderstandings and responsibilities at the site. HELKAMA designs and produces the whole range of power cables, hybrid cables and fiber optic cables under one roof and under one management system.

ASSEMBLY BENEFITS

Required assembly time on site is extremely short. Helkama Solution cable harnesses can be hoisted to the mast as one

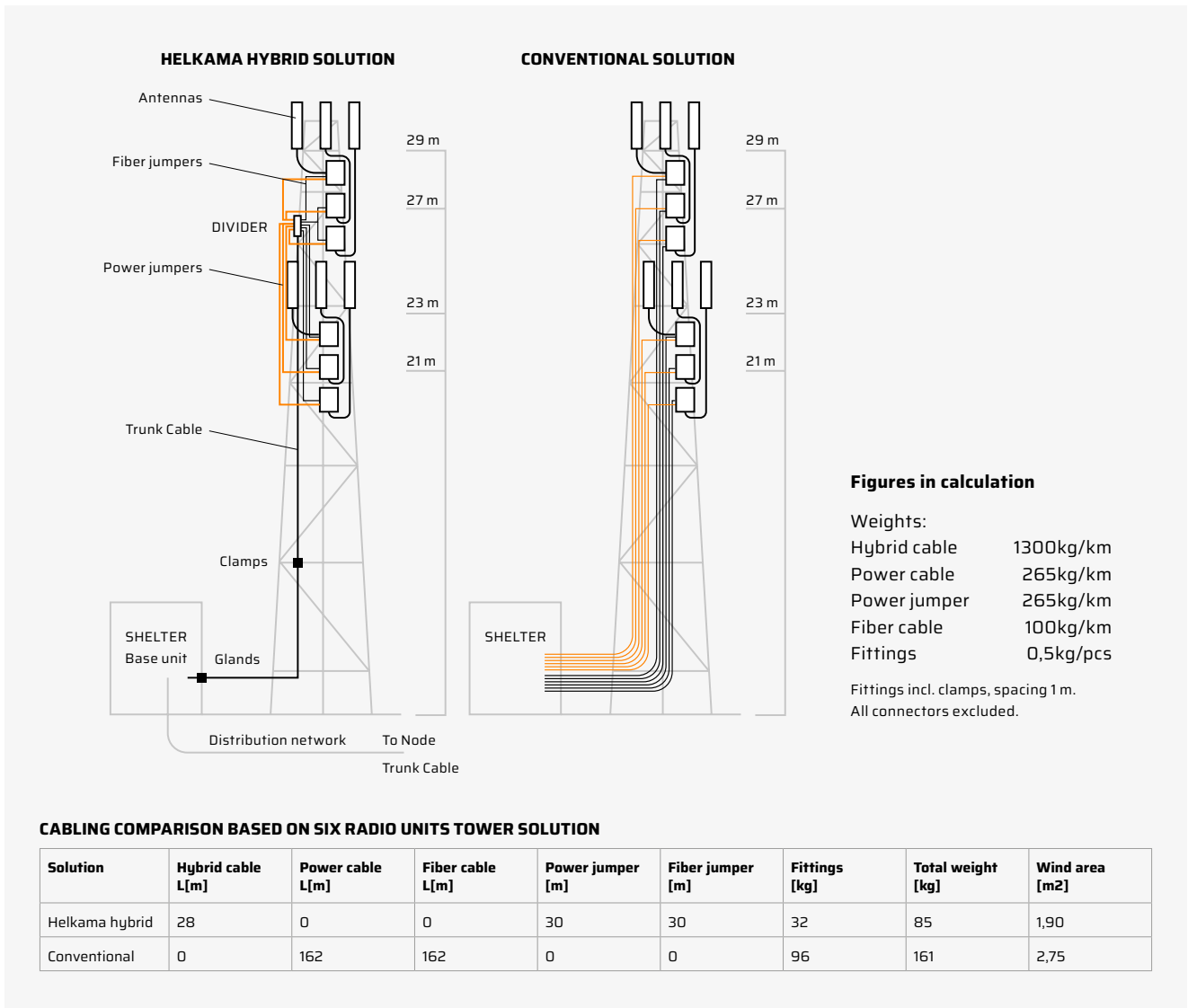
set. No special tools needed. The cost of a single fiber is very small, but the cost of IP rated outdoor connectors are very high. Extra fibers with indoor connectors can be installed into the Junction Cabinet for future needs or just as spares.

QUALITY GUARANTEE

Production Quality comes from carefully selected materials, cleanliness in the assembly environment, precise measuring equipment and qualified personnel. Overall Quality also includes design, testing, On-Time deliveries and customer support. At HELKAMA, every single component, conductor and cable are quality approved before delivery to ensure long durability.

WIDE VARIETY OF CABLE SOLUTIONS

On request, Helkama can provide design support for the cable structure design. Typical cable sizes for Multi-Core Power Cables are 6-24 cores with cross sections ranging from 4 mm^2 to 25 mm^2 . Two-Core Power Cables are available with cross sections up to 35 mm^2 . Hybrid Cables are typically available with 2-18 cores with cross sections ranging from 6 mm^2 to 25 mm^2 and with Single-Mode or Multi Mode fibers.



↑ A comparison between the Helkama Hybrid Cable solution and conventional individual power and fiber cabling for six radio and antenna units.

EXAMPLES



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