SunFibre

Wearable Active Lighting Technology

2021

SCILIF

scilif.com

OUR COMPANY

"SCIENCE FOR LIFE"

SCILIF is a combination of these two key words that fundamentally express what we do: applying new technologies to make life safer.

The company was founded in 2014 for the purpose of developing **SunFibre Wearable Active Lighting Technology for personal safety.** The core concept was invented in collaboration with the Technical University in Liberec and further developed by SCILIF into a comprehensive system protected by **several patents**, and sold under the brand name SunFibre.

SunFibre Wearable Active Lighting Technology is a **unique optic fibre lighting system** that increases visibility in darkness or low-light conditions. Unlike retroreflective safety elements, SCILIF SunFibre emits light through optic fibres encased in a textile coating, ensuring active protection. Side-emitting optic fibres provide visibility in all directions up to a distance of 3 kilometres. The properties of the textile coated optic fibre allow easy sewing into textile products and guaranteed **mechanical durability and washability.** The system is easy to operate and recharge.

The Technology is now **distributed in five continents** and used by leading manufacturers worldwide.

We at **SCILIF** are totally committed to providing our customers, but also our customers' customers, **absolutely the best available technology in Wearable Active Lighting.** We look forward to learning how we can support your brand and help protect your customers.

OUR FOUR COMMITMENTS...

SAFETY

We are absolutely committed to improving practical safety wherever we can.

360 degree active lighting can and will make the difference and could quite literally save your life.

Our commitment to safety, however, does not stop with just active lighting. It extends to how easy the product is to use, how reliable it is, and we work with our customers to ensure the best implementation possible to ensure the highest level of safety for the wearer.

QUALITY AND DURABILITY

We place a very high value on product quality and durability. Our products are designed to be as rugged and durable as the products they are integrated into. These are not short-lived fashion accessories, they are designed to serve well and as long as customers expect when they buy professional brands.

Our production facilities are located in Europe, and we conduct our own tests, alongside a wide range of European testing organizations to confirm both quality and durability. The fact that leading global brands have tested and chosen SCILIF SunFibre products speaks to our commitment.

TECHNICAL LEADERSHIP

At SCILIF we are 100% committed to maintaining technological leadership: not just tomorrow, but for the long run. Internally, we are working on several new patent filings that will take our SCILIF SunFibre technology to new levels as well as extending SCILIF SunFibre application areas so more customers can benefit from the safety features.

Also, we are working on a number of special application areas with tactical units and selected industrial clients that will lead to solutions with broader applicability.

Should you have a special requirement or would like us to work with you on developing a special bespoke application, please feel free to contact us.

SUSTAINABILITY

Sustainability is more than just a buzzword for us. The following are characteristics that demonstrate our commitment to minimizing our impact on our earth.

HIGH QUALITY

First and foremost, we design our products to last at least as long as the products they are integrated into. This means product life-spans are maximized, as is customer value from your product.

BATTERY REPLACEMENT

In the rare event that product usage has exceeded the battery cycle rating, we offer a service to replace the battery and thus extend product usability.

REFURBISHING

We offer all our customers and their customers the option of sending us back used SCILIF SunFibre components. Wherever possible, we recycle and/or repurpose parts for pro-bono projects or customers that specifically want re-purposed products.

ZERO-WASTE PRODUCT

We produce exactly to customer specifications, which means practically no waste on our side and zero waste at customer production site.

REPAIRS

Unlike most technology suppliers, we offer an unlimited repair service to customers and their customers. If something breaks for whatever reason, it is likely we will be able to fix it – from our control units all the way through to replacing light fibres.

GREEN STRATEGY

We produce in compliance with RoHS and OEKO-TEX-Standard 100 norms in all stages, which ensures safe and healthy products. The light emitted by our products is environmentally friendly and does not disturb most animals, etc. The current produced by the battery is regulated by a microprocessor to control how much power the battery releases. This saves energy, prevents overheating and prolongs the lifespan of the battery.

COMPONENTS OVERVIEW

80% life size

1-SIDED LIGHT SOURCE
55 x 15.2 x 3.7 mm

PLASTIC WITH L-JACK

POWER
CONTROL
MINI
1000 mAh

PIPING

POWER
CONTROL
STANDARD
1600/2300 mAh

PLASTIC HEAVY DUTY WITH SCREW JACK

TUBING

RUBBER CLIP

POWER
CONTROL
HEAVY DUTY
3500 mAh

PLASTIC WITH USB-A PLUG

FLOATING BUTTON
(connected with
separate cable
directly to the light
source)

POWER
BANK
MINI
2500 mAh

2-SIDED LIGHT SOURCE
82.4 x 15.2 x 3.7 mm

TEXTILE FLAT WITH USB-A PLUG (washable)

TEXTILE FLAT WITH USB-A PLUG (washable)

NAKED

POWER
BANK
DUOPORT
5000 mAh

SEW-IN BUTTON

ATTACHMENT METHODS

PIPING

This is the easiest and most secure way to fasten SunFibre to a product. The optical fibre is protected within textile piping that is easily sewn into any seam.

TUBING

This method allows the user to detach the SunFibre system from rubber clips sewn into the seam of the textile product while retaining the full benefits of having the optic fibre protected by an external textile sheath.

NAKED

Here we supply only the naked optic fibre and manufacturing inserts this into a prepared "tunnel" in the product, typically made of perforated netting material.
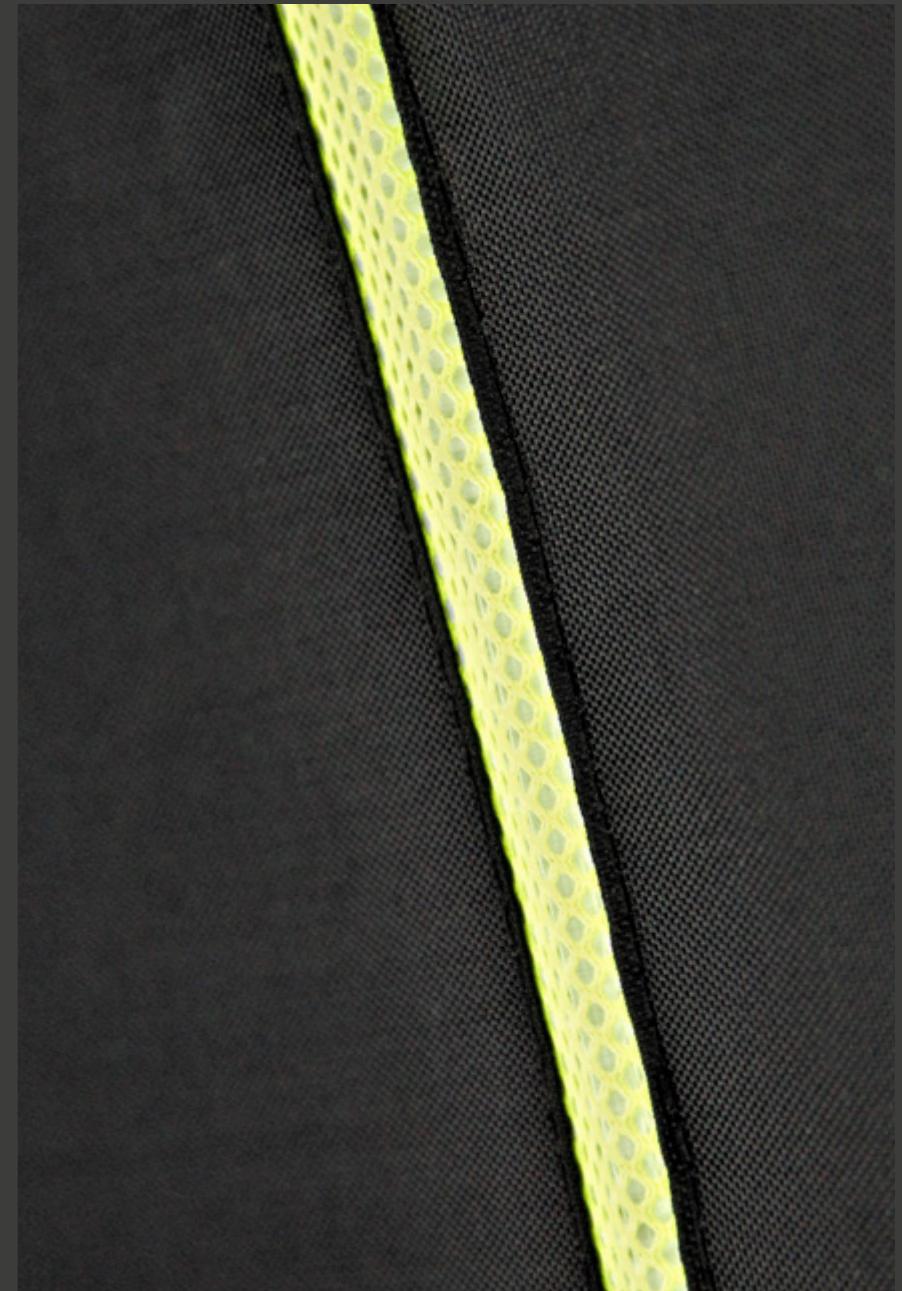
TACTICAL

The TACTICAL SCILIF SunFibre set was developed for the army and special squad units to protect the users in direct life-threatening situations or in a wide range of support functions. Both basic and special functions of the TACTICAL set are designed to operate in harsh climatic conditions, such as during continuous rain, mists, snowstorms or in the desert. Users decide whether they want to be seen or not and in which spectrum or at what distance, as they need. Special attention was paid to quick control of the unit, long-lasting batteries, good haptics and fast recharging.

KEY CHARACTERISTICS

| IP68			50 h
Exellent resistance to water and dust	Variable modes of operation	High mechanical durability	Operation time up to 50 hours

OTHER FEATURES AND BENEFITS

→ Up to 3 km visibility in all directions (360°)

→ Homogenous lighting along the entire length of the optic fibres

→ Almost invisible and easy integration into product (our patented solution)

→ Suitable for application with glue underneath

→ Easy haptic control

→ Special IP68 connectors

→ Fast recharging (Li-Ion battery) and battery level control

ADDITIONAL OPTIONS

→ IR mode

→ Special colours of textile coating (khaki etc.)

→ Ability to program signal mode for communication within the unit

→ Optional integrated recharge cable

TYPICAL APPLICATIONS
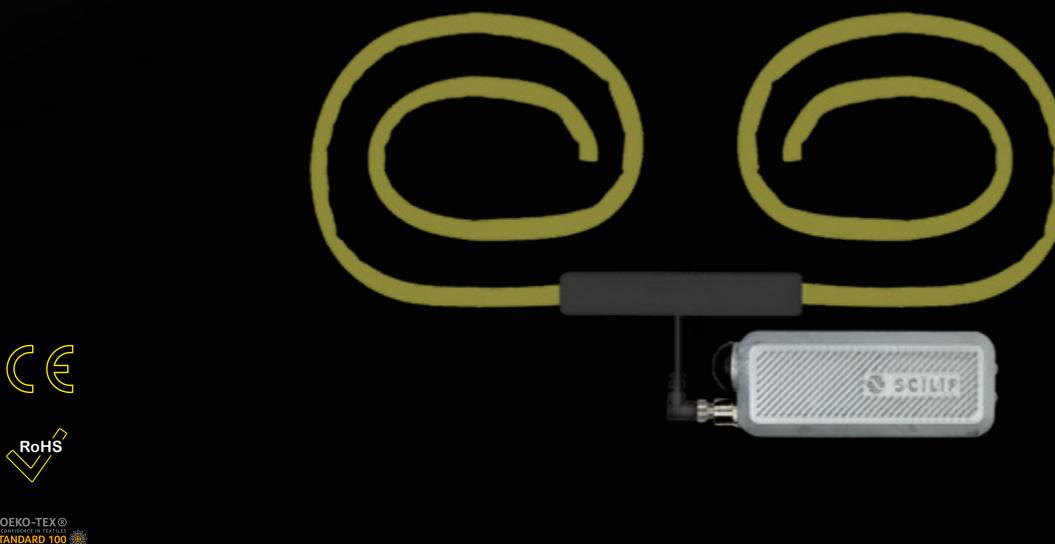
RECOMMENDED: 2-sided, 2 or 3 mm diameter of optic fibre in textile PIPING + Plastic Cable / Heavy Duty Screw Jack / Power Control HEAVY DUTY 3500 mAh

PPE UNIFORMS

This PPE UNIFORMS SCILIF SunFibre set is specifically designed for civil services and other integrated rescue systems which frequently find themselves in life-threatening situations with poor visibility. SCILIF SunFibre increases the visibility of the user, as well as enables easy identification of individual members of the rescue team and their gear.

KEY CHARACTERISTICS

3 km			
Up to 3 km visibility in all directions (360°)	Variable modes of operation	Mechanical durability and bendability	High washability

OTHER FEATURES AND BENEFITS

→ Highly visible textile coating colours meeting the requirements of the EN20471 regulation

→ Homogenous lighting along the entire length of the optic fibres even in long lengths

→ Almost invisible and easy integration into product (our patented solution)

→ Suitable for application with glue underneath

→ Up to 34 hours of operation on a single charge

→ Fast recharging (Li-Ion battery) and battery level control

ADDITIONAL OPTIONS

→ Retroreflective thread in the textile coating

→ FR textile coating of the optic fibres

→ Accelerometric Power Control 1600/2300 mAh

TYPICAL APPLICATIONS

IP68

IP44

CE

RoHS

OEKO-TEX®
STANDARD 100

RECOMMENDED: 2-sided, 2 or 3 mm diameter of optic fibre in textile PIPING + Plastic Cable / L-Jack / Power Control STANDARD 2300 mAh
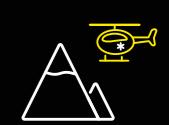
PPE WORKWEAR

This PPE WORKWEAR SCILIF SunFibre set is specifically intended for workers operating in conditions where the law requires adherence to the Personal Protective Equipment (PPE) regulations, whether this is due to lower visibility, harsh climatic conditions or other environmental considerations. SCILIF SunFibre significantly increases visibility of textile products produced in accordance to the EN20471 regulation, providing the user with maximum protection.

KEY CHARACTERISTICS

Up to 3 km visibility in all directions (360°)

Easy haptic control in gloves. **SEW-IN BUTTON** modes: one intensity of continuous light + one flashing mode

High washability

Operation time up to 60 hours

OTHER FEATURES AND BENEFITS

→ Highly visible textile coating colours meeting the requirements of the EN20471 regulation

→ Homogenous lighting along the entire length of the optic fibres even in long lengths

→ Mechanical durability and bendability of the optic fibre

→ Almost invisible and easy integration into product (our patented solution)

→ Suitable for application with glue underneath

→ Battery level control

ADDITIONAL OPTIONS

→ Retroreflective thread in the textile coating

→ FR textile coating of the optic fibres

TYPICAL APPLICATIONS

RECOMMENDED: 1-sided, 2 or 3 mm diameter of optic fibre in textile PIPING + Textile Flat Cable / Flat USB-A Plug (washable) + SEW-IN BUTTON / Power Bank MINI 2500 mAh/DUOPORT 5000 mAh

IP68

CE

RoHS

OEKO-TEX®
STANDARD 100

SPORT/FASHION

The SPORT/FASHION SCILIF SunFibre set is designed for application in products intended for fast motion, such as motorcyclists or skiers. Typically the user is moving fast or is among other people moving fast, and in every case wants to be seen to be safe, ideally from far away. Active lighting is practically the only option to effectively increase visibility and safety on ski slopes where passive light reflection does not function.

KEY CHARACTERISTICS

Up to 3 km visibility in all directions (360°)

Cost effective solution

Wide selection of colours

Operation time up to 60 hours

OTHER FEATURES AND BENEFITS

→ Homogenous lighting along the entire length of the optic fibres even in long lengths

→ High washability of the SunFibre system upon the removal of Power Control

→ Mechanical durability and bendability of the optic fibre

→ Almost invisible and easy integration into product (our patented solution)

→ Suitable for application with glue underneath

→ Battery level control

ADDITIONAL OPTIONS

→ SEW-IN BUTTON for easy haptic control

TYPICAL APPLICATIONS

IP68

CE

RoHS

OEKO-TEX®
STANDARD 100

RECOMMENDED: 2-sided, 2 or 3 mm diameter of optic fibre in textile PIPING + Textile Flat Cable / Flat USB-A Plug / Power Bank MINI 2500 mAh / Power Bank DUOPORT 5000 mAh
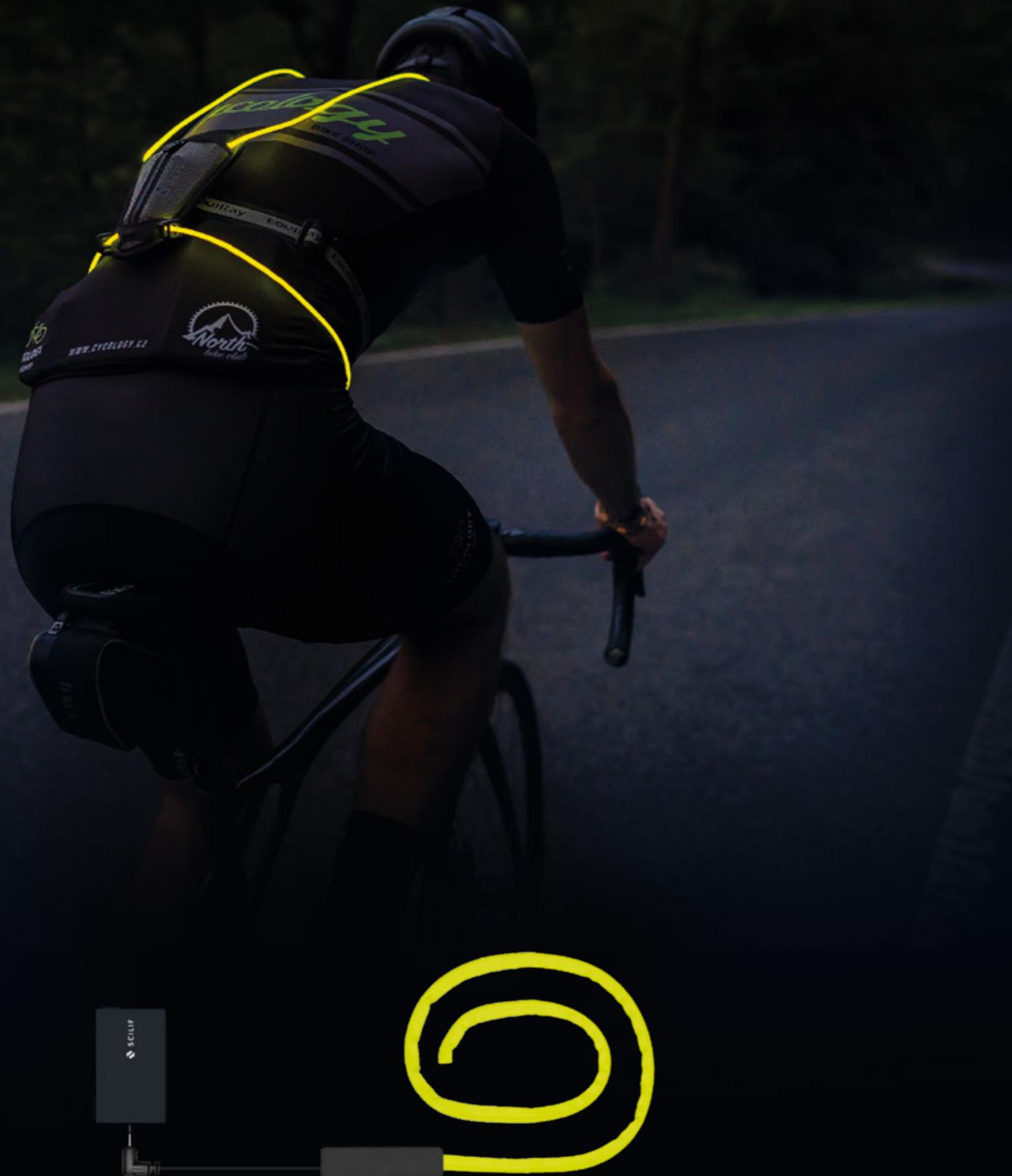
SPORT ULTRALIGHT

This SPORT ULTRALIGHT SCILIF SunFibre set was developed with the ultra-performance athlete in mind, so we created an ultralight product without compromising functionality, performance, and most importantly visibility. This solution is ideal for both urban and rural sports, even in harsh weather conditions especially where visibility is key such as cross-country running or skiing, and similar.

KEY CHARACTERISTICS

Up to 3 km visibility in all directions (360°)	Ultralight Solution	Almost invisibly and easily integrated	High washability

OTHER FEATURES AND BENEFITS

→ Homogenous lighting along the entire length of the optic fibres even in long lengths

→ High washability of the SunFibre system upon the removal of Power Control

→ Mechanical durability and bendability of the optic fibre

→ Almost invisible and easy integration into product (our patented solution)

→ Suitable for application with glue underneath

→ Battery level control

ADDITIONAL OPTIONS

→ Accelerometric Power Control 1600/2300 mAh

TYPICAL APPLICATIONS

IP68
IP44
CE
RoHS

OEKO-TEX®
STANDARD 100

RECOMMENDED: 1-sided, 2 mm diameter of optic fibre in textile PIPING + Plastic Cable / L-Jack / Power Control MINI 1000 mAh
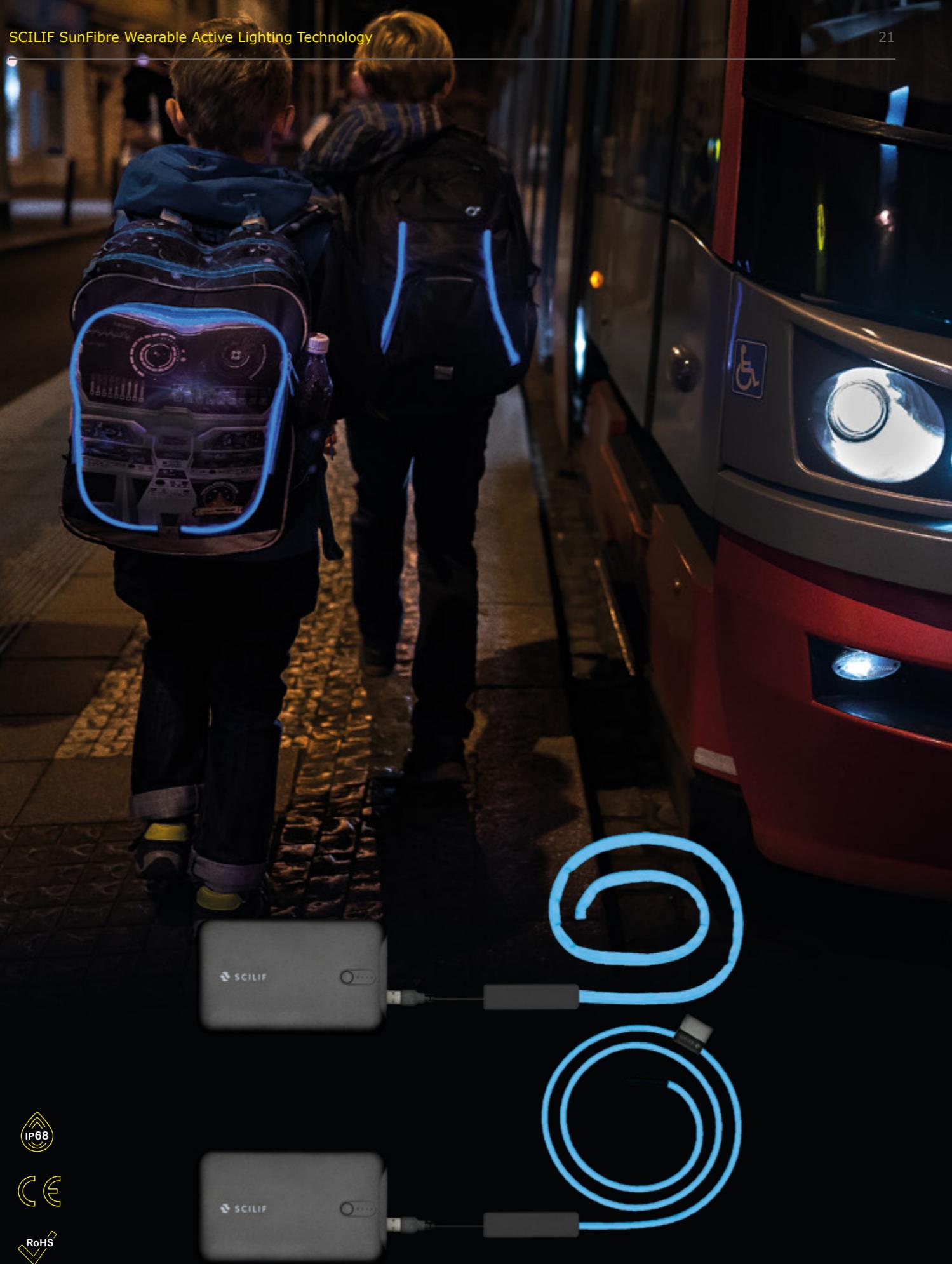
BASIC

This BASIC SCILIF SunFibre set is our lowest-cost solution for integration into a wide range of price-sensitive products, especially for products that do not require frequent washing. Despite their advantageous price, the same visibility is maintained as in other SCILIF SunFibre sets. Users can power the unit from any standard power bank they may have available and additional control functions can be added by integrating the SunFibre SIMPLE Button. This solution is suitable for children's backpacks, child buggies, sporting equipment and similar.

KEY CHARACTERISTICS

Up to 3 km visibility in all directions (360°)	Cost effective solution	Mechanical durability and bendability	Operation time up to 30 hours

OTHER FEATURES AND BENEFITS

→ Homogenous lighting along the entire length of the optic fibres even in long lengths

→ Easy integration into textile products (patented solution)

→ Suitable for application with glue underneath

→ Very low-power consumption

→ Easy charging and operation using a SUNFIBRE Power Bank

→ Battery level control

ADDITIONAL OPTIONS

→ CLICK & GO optionable - clip-on rubber system replace the function of textile piping and 3 mm TUBING set may be attached with textile product and fully removed at any time

→ FLOATING BUTTON for easy haptic control

TYPICAL APPLICATIONS

IP68

CE

RoHS

OEKO-TEX®
STANDARD 100

RECOMMENDED: 1-sided, 3 mm diameter of optic fibre in textile TUBING + CLIP-ON RUBBER SYSTEM or PIPING + Plastic Cable / USB-A Plug / Power Bank MINI 2500 mAh

NAUTICAL

The NAUTICAL SCILIF SunFibre set was especially designed for offshore applications. It is waterproof, shockproof, and is designed to keep going through the roughest conditions. Special functions include an automatic flashing alarm mode if the user falls into water, thus improving rescue efforts. This NAUTICAL SCILIF SunFibre set can be integrated into lightweight vests, all-weather outer shell, or directly into life jackets. Both water-sport enthusiasts and professionals will appreciate this set.

KEY CHARACTERISTICS

3 km	IP68		50 h
Up to 3 km visibility in all directions (360°)	High resistance against water	Variable modes of operation	Operation time up to 50 hours
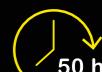
OTHER FEATURES AND BENEFITS

→ Homogenous lighting along the entire length of the optic fibres even in long lengths

→ High mechanical durability and bendability of the optic fibre

→ Easy integration into textile products (patented solution)

→ Suitable for application with glue underneath

→ Easy haptic control

→ Fast recharging (Li-Ion battery) and battery level control

ADDITIONAL OPTIONS

→ Automatic light signalling when immersed in salty water

→ Option to program signalling mode for long-distance communication

TYPICAL APPLICATIONS

IP68

CE

RoHS

OEKO-TEX®
STANDARD 100

RECOMMENDED: 1-sided, 3 mm diameter of optic fibre in textile PIPING + Plastic Cable / Heavy Duty Screw Jack / Power Control HEAVY DUTY 3500 mAh
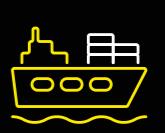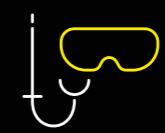
PRODUCT TECHNOLOGY

PATENTED TECHNOLOGY

Our SCILIF SunFibre Technology is protected by two patents. Patent EP2917391 is our invention of a side-emitting light guide incorporated into textile piping which can be easily attached to any fabric. This gives the final product a clean and professional look, provides for additional protection of the light guide, and maximizes colour choices for maximum design flexibility. Patent EP3073192 protects our unique optical LED configuration that powers our light guide, which maximizes the combination of high light power, high energy efficiency, low heat generation, and long battery life.

CERTIFICATES

The **CE** identification proves that the product is compliant with legislative EU regulations for protection of health, safety and environmental protection. Obtaining the CE identification is necessary to introduce the product to markets within the European Economic Community territory.

The **RoHS** identification ensures that the electric and electronic devices do not contain certain dangerous substances and that thus certified products are safe for health.

The **IP68** identification certifies the highest level of coverage, as Scilif Sunfibre products are water resistant to a depth of 2.5 m for up to 2 hours, including salt water. The electronic devices identified by the international certification are also resistant against penetration by a particles such as dust, sand or other dirt.

The **IP44** certification denotes resistance to dust particles down to 1 mm in size and resistance to water splashed from any direction.

STANDARD 100 by OEKO-TEX® is one of the world's best-known labels for textiles tested for harmful substances. All of our textile coatings has been tested for harmful substances and that the article therefore is harmless for human health.

TESTING PROCEDURES

We know that our customers will use active lighting in the most demanding and life-protecting ways. As such, we place a very high value on product quality, durability and reliability. Products go through a range of technical tests during development and are then submitted for independent testing to certification authorities. Finally, our products have gone through very robust testing with leading brands and are certified by certain tactical forces. Our Technical Guide has a complete overview of Testing Procedures that we recommend in selecting Active Lighting components in general.

GUARANTEE

Generally, our key components come with a standard 2-year warranty, though by design our SCILIF SunFibre Technology is made to last at least the average life expectancy of typical applications. Should you require a longer product warranty that matches your product warranty, then we are able to work with you to achieve this. See Technical Specifications for detailed information. Overall, we guarantee top workmanship, high-quality colour fastness, and use only brand-name battery suppliers.

SERVICES AND SUPPORT

The SCILIF Sales Team has deep technical knowledge and is available to provide assistance to you at every step of your produce development and manufacturing journey. Our goal is to support you in deploying our SCILIF SunFibre Technology into your product to build your competitive advantage and customer satisfaction. Specifically, we can offer the following:

REPAIR SERVICES

In case a product is damaged and assuming that our SCILIF SunFibre Technology has been integrated into the product using our guidelines, then we are able to repair and/or replace components, including the light guide itself without taking out the textile piping.

WARRANTY CLAIM EVALUATION

In case you have a claim that requires independent review, we will provide you with a formal opinion on whether our SCILIF SunFibre Technology was properly used and probable causes of failure/damage.

The standard warranty is 2 years, 600 charging cycles for the battery.

CUSTOM APPLICATION PRODUCT DEVELOPMENT

We have already worked with a wide range of leading brands in developing customized or proprietary solutions. The technology presented in this catalogue is only our standard commercial offering and we work with various manufacturers of tactical equipment on a wide range of classified projects that integrate our technology and electronics into complete personal safety systems.

DESIGN SUPPORT

Should you wish, we are able to support you in how best to integrate our SCILIF SunFibre Technology from a design perspective to maximize safety and ensure that customer comfort and SunFibre product life is also maximized.

INSTALLATION REVIEW

We are able to provide advice on how to best integrate SCILIF SunFibre Technology into your manufacturing process to maximize efficiency and quality.

TECHNICAL SPECIFICATIONS

POWER SOURCES

Product name/ Battery capacity:	Power Control STANDARD 1600 mAh	Power Control STANDARD 2300 mAh	Power Control MINI 1000 mAh	Power Control HEAVY DUTY 3500 mAh	Power Bank MINI 2500 mAh	Power Bank DUOPORT 5000 mAh
Description:	Fully integrated and ultra-compact power and control unit for widest range of professional applications, fully programmable firmware.		Super lightweight integrated power and control unit.	Extreme heavy duty integrated power and control unit.	Ultra-compact portable power bank, fireproof high-impact plastic (ABS), multiple smart protection systems.	
Continuous working time	23 hours (1-sided)	34 hours (1-sided)	16 hours (1-sided)	50 hours (1-sided)	30 hours (1-sided)	60 hours (1-sided)
(lower intensity):	12 hours (2-sided)	18 hours (2-sided)	8 hours (2-sided)	26 hours (2-sided)	15 hours (2-sided)	30 hours (2-sided)
Colour:	Black/Green	Black/Red	Black/Grey	Silver /Blue White Camouflage Green Camouflage Sand	Black	Black
Modes of operation:	2x different intensity of light 1x flashing				On/Off = 1x intensity of light (+1x flashing mode*)	
Modes Programmable to Customer Needs (extra cost):	YES				* YES	
Special sensors:	Motion detection (option)		N/A	Motion detection (option), Salt water immersion (for Nautical)	N/A	
Indication:	Button activation + Battery level + Charging Indicator + Mode Selection				Battery Level + Charging Indicator + On/Off	
Dimensions (mm):	74 x 32 x 18	74 x 32 x 18	52 x 32 x 13	90 x 37 x 20	102 x 62 x 10	143 x 74 x 10
Weight:	52 g	55 g	24g	110g	69g +/- 10g	130g +/- 10g
Battery type/ capacity:	Li-Ion 1600 mAh	Li-Ion 2300 mAh	Li-Ion 1000 mAh	Li-Ion 3500 mAh	Li-Pol 2500 mAh	Li-Pol 5000 mAh
Average charging time (80%):	2.0 hours	2.5 hours	1.5 hours	4.0 hours	Fast charge	Fast charge
Voltage:	<5V			<5V	3.7V	3.7V
Charging connector type:	Micro USB-B			IP68 screw-in custom connector	USB-B	
Certificates:	CE, RoHS, IP44 (if connector is plugged in, and USB is covered)			CE, RoHS, IP68	CE, RoHS, TUV	
Safety functions:	• over charging • battery draining • over heating during the operation and charging					
Operating temperature range:	-15°C/+40°C			-25°C/+45°C	+8°C/+35°C	+8°C/+35°C

ACCESSORIES

Product name:	SEW-IN BUTTON	FLOATING BUTTON	TRAVEL CHARGING ADAPTER	USB-A/B CHARGING CABLE	HEAVY DUTY CHARGING CABLE	RUBBER CLIP
Description:	Control Button for integration into fabric surface with integrated electronics to substitute power bank.	Our "Floating" button for loose integration into pocket or can be fixed on fabric surface. Connected to light source by cable.	Wall charger with USB-A output, compatible with all SunFibre Power Supplies.	Charging Cable to connect Travel Adapter to SunFibre Power Controls & Power Banks.	Special screw-in Charging Cable to connect Travel Adapter to SunFibre Heavy Duty Power Control (Tactical, Nautical).	Rubber sew-in clips to allow complete detachment of SunFibre lighting solution from backpack or garment.
Colour:	Black (any selected colour)	Black	Black	Black	Black	Black (any selected colour)
Material:	Silicon	Plastic	Plastic ABS/TPE	Plastic/Metal	Plastic/Metal	TPU
Dimensions (mm):	32 x 32 (button), 50 x 50 (including sewing edges)	36 x 6	110 x 160 x 30	Length = 1m	Length = 1m	18 x 17
Weight:	18g	10g	25g	20g	18g	1g
Modes of operation:	1: Flashing (3Hz) 2: Bright 3: Eco	1: Flashing (3Hz) 2: Bright 3: Eco	N/A	N/A	N/A	N/A
Certificates:	CE, RoHS, IP68		CE, RoHS	CE, RoHS	CE, RoHS	N/A
Operation temperature range:	-15°C/+40°C					N/A
Options:		Modes of operation fully customizable over MOQ 10 000 pcs.				

N/A = Not Applicable

N/A = Not Applicable

* = Function available if combined with Control Button

COLOUR CARD

IN 50+
COUNTRIES
WORLDWIDE

3 mm PIPING - standard colours (round color = recommended LED diodes)

* 1108 hi-vis yellow

CW GR

0003 white

CW AR BL GR

1244 millitary green

AR IR GR

* 5474 neon green

GR CW

* 2127 hi-vis orange

CW AR

8692 silver grey

BL GR AR CW

4904 light blue

CW BL

* 1257 sunny yellow

CW

* 3157 hi-vis red

CW AR

3119 rescue red

AR

4906 blue

CW BL

* 3405 pink

CW

* SunFibre BASIC colours: 1108, 2127, 3157, 5474, 3405, 1257 (available with CW LED diode only)

3 mm TUBING - standard colours

* 1108 hi-vis yellow

CW GR

0003 white

CW AR BL GR

* 2127 hi-vis orange

CW AR

8692 silver grey

BL GR AR CW

3157 hi-vis red

CW AR

4906 blue

CW BL

2 mm PIPING - standard colours

1108 hi-vis yellow

CW

0003 white

CW

2127 hi-vis orange

CW

5474 neon green

CW

3157 hi-vis red

CW

3405 pink

CW

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Note: Other special colours available for bigger volumes.
MOQ is 1000 m/colour for PIPING and 500 m/colour for TUBING options.