LXS®

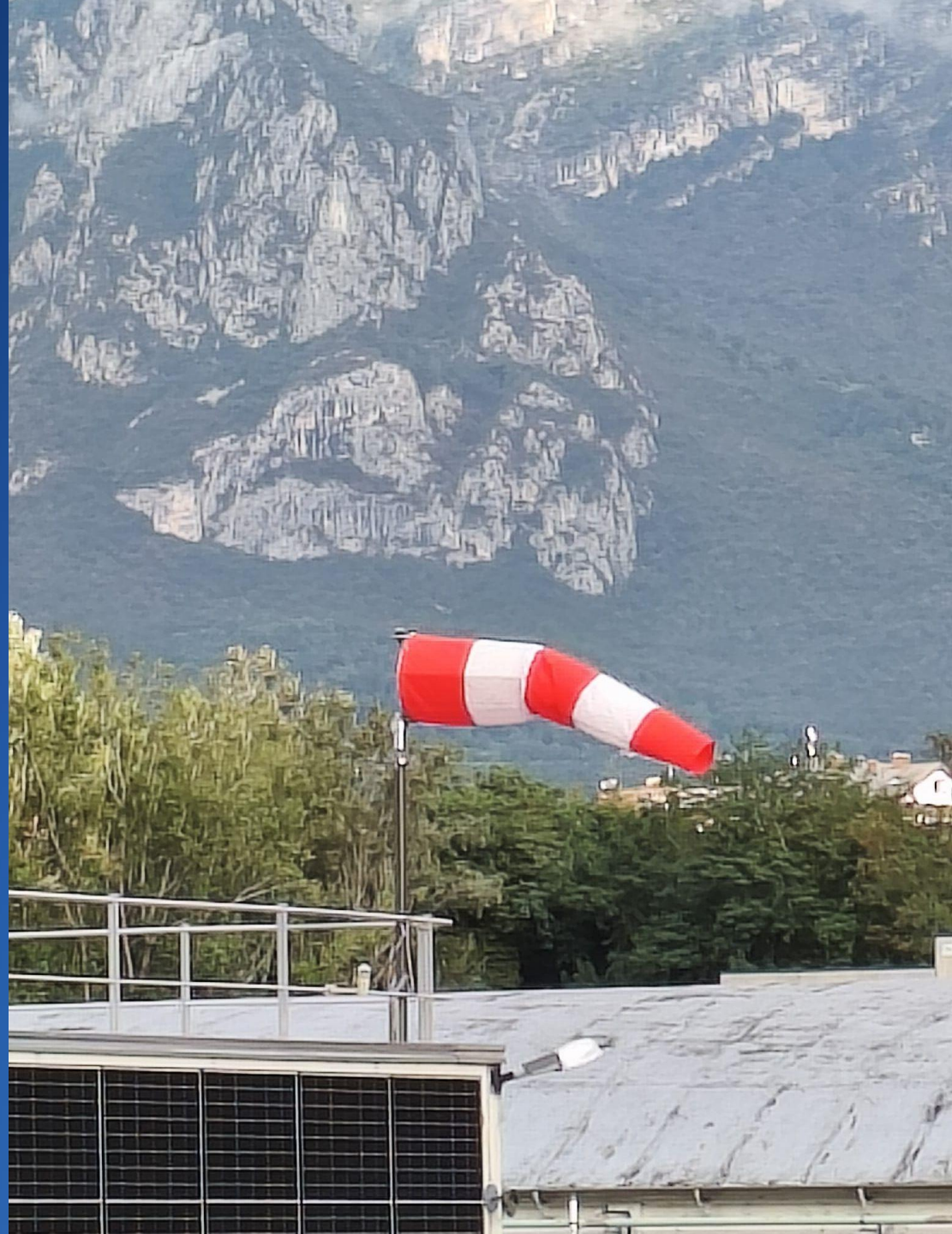
CE2K · LUXSOLAR DIVISION

INDICATING WIND DIRECTION AND SPEED

With LUXSOLAR windsocks for helipads

www.luxsolar.com | info@ce2k.com

rev_261104



THE LXS-MAV RANGE

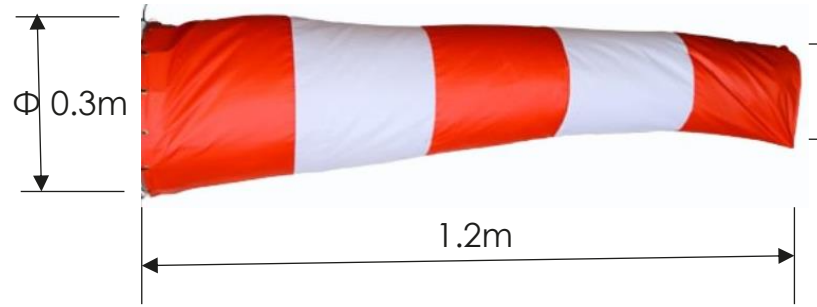
Main and auxiliary windsocks for helipads

LXS-MAV-60-240



MAIN WINDSOCK
FOR SURFACE-LEVEL HELIPORTS

LXS-MAV-30-120



MAIN WINDSOCK
FOR ELEVATED HELIPORTS AND HELIDECKS

AUXILIARY WINDSOCK
FOR SURFACE-LEVEL HELIPORTS

WHY A LUXSOLAR WINDSOCK

Indicating wind direction and speed reduces risks for all types of aircraft and for people living or working near plants that may release hazardous fumes or gases, subject to the Seveso Directive.



01

STANDARDS

Made to ICAO, FAA, EASA and ENAC standards. Weather- and UV-resistant, antistatic for explosion-hazard areas.

02

FABRIC

100% polyester, 150 g/m²: full extension between 15 and 17 knots, even with the patented CET internal lighting.

03

STRENGTH

Tested up to category 4 hurricanes, with winds up to 130 knots (240 km/h).

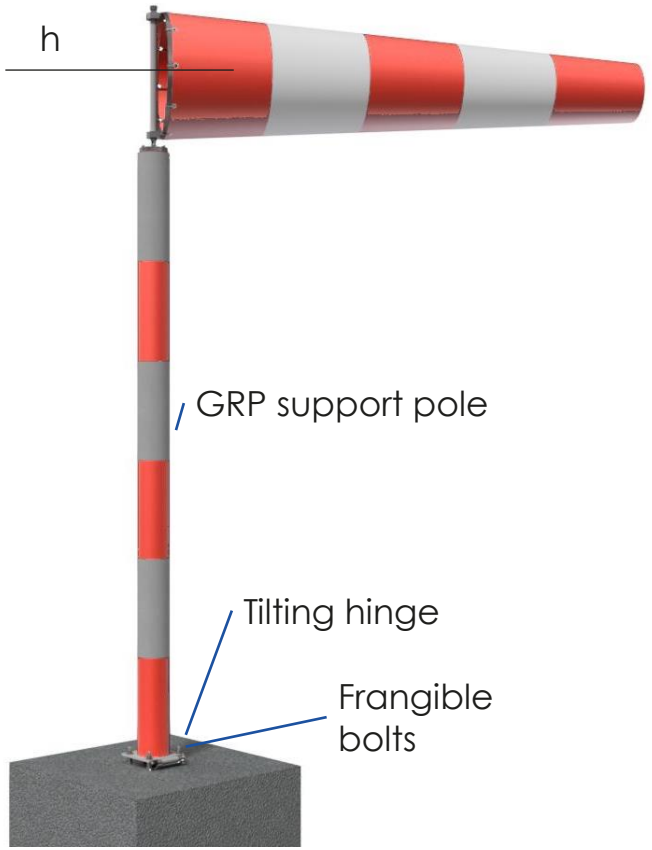
04

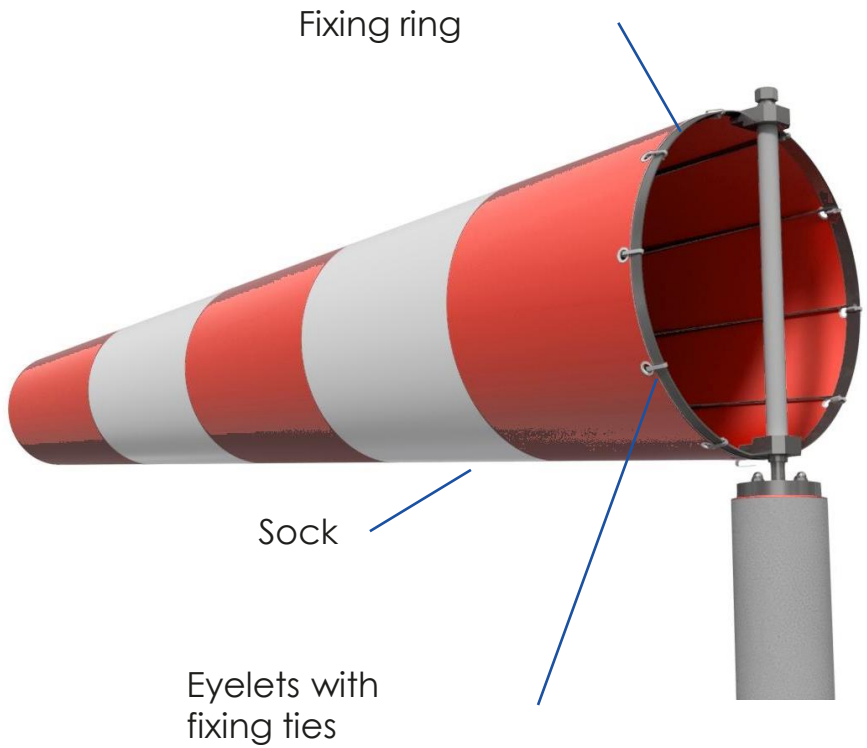
MOUNTING

SS316 steel eyelets with 10 mm clear hole: fixed to the basket with steel or plastic cable ties.

WINDSOCK ON GRP POLE

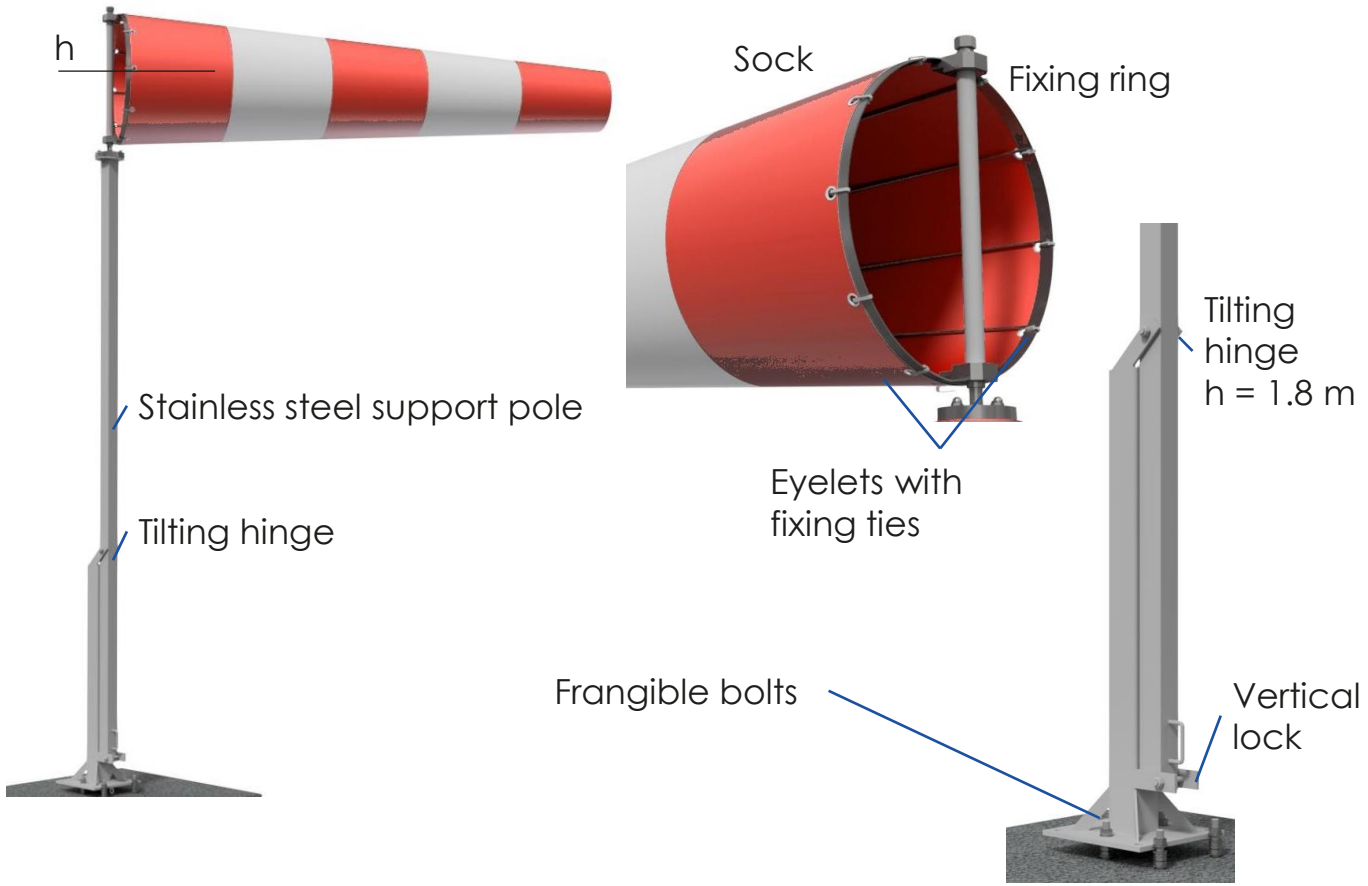
Fibreglass pole, h 3.5 m · unlit · model LXS-MAV-6-T-0-4-G-35





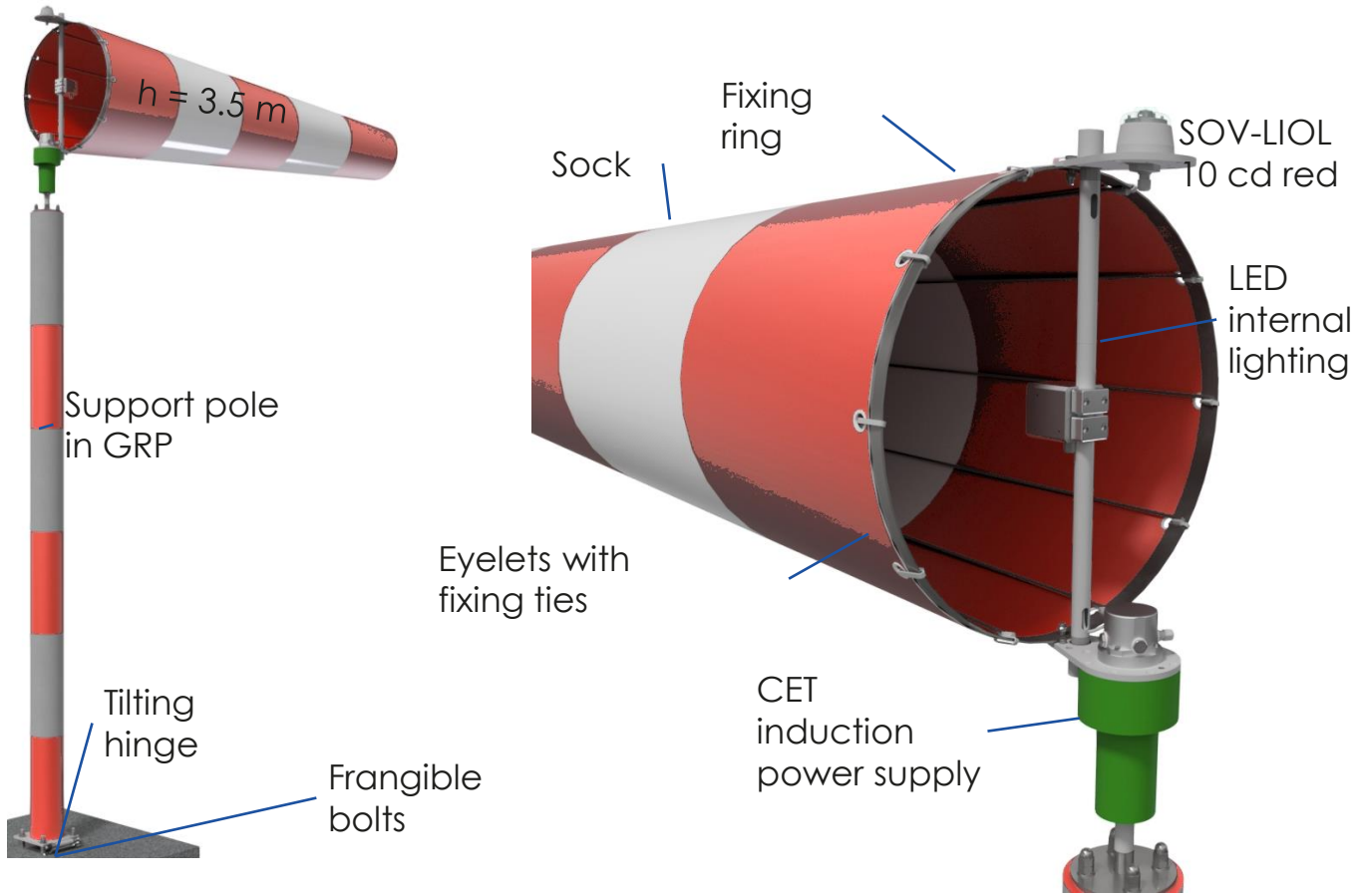
WINDSOCK ON STAINLESS STEEL POLE

Stainless steel pole, h 5.5 m · unlit · model LXS-MAV-6-T-0-4-S-55



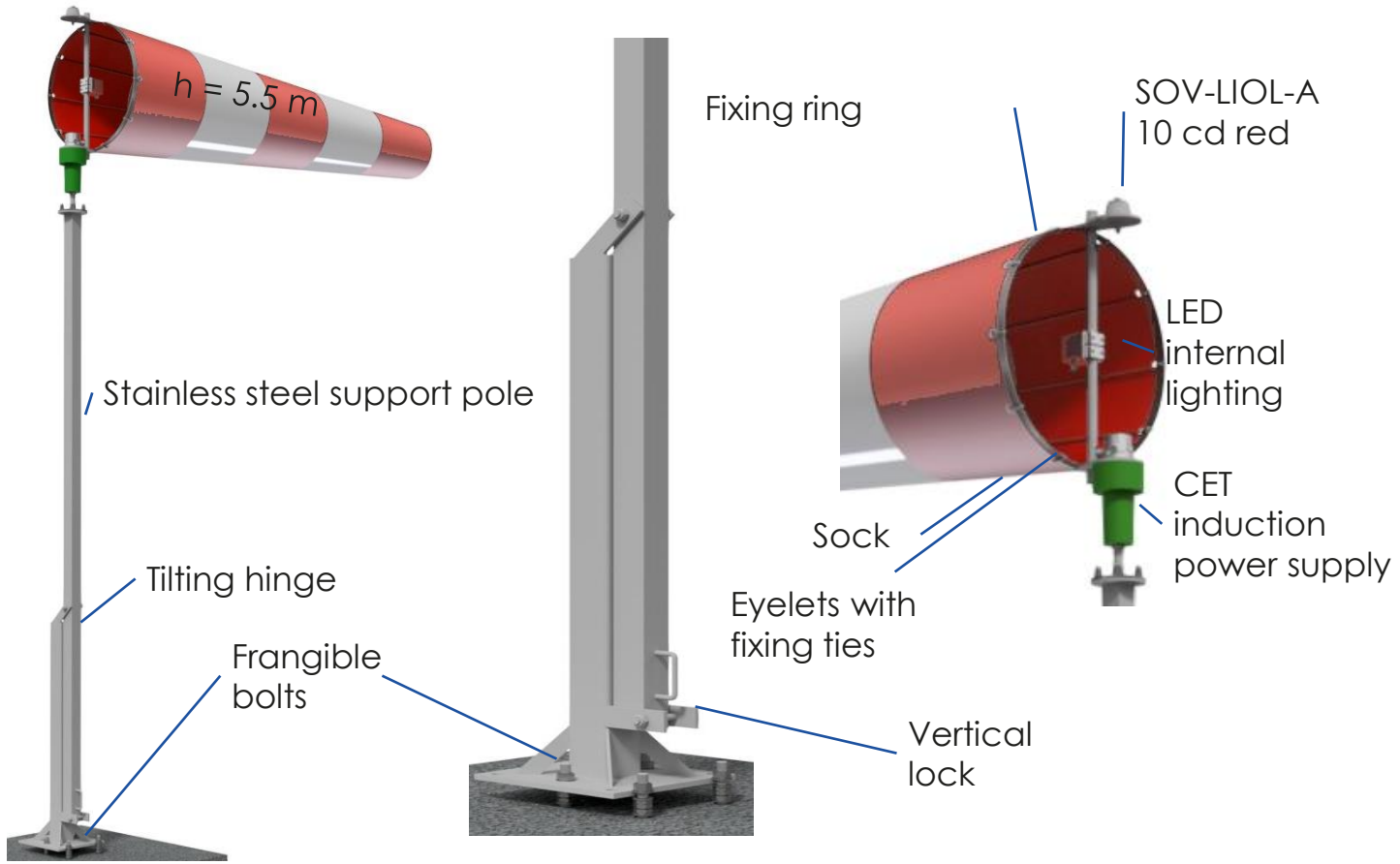
LIT WINDSOCK ON GRP POLE

Fibreglass pole, h 3.5 m · lit · model LXS-MAV-6-T-3-4-G-35



LIT WINDSOCK ON STAINLESS STEEL POLE

Stainless steel pole, h 5.5 m · lit · model LXS-MAV-6-T-3-3-S-55



ORDER CODE

	PRODUCT CODE		1 · SOCK DIAMETER		2 · SOCK COLOUR AND MATERIAL		3 · LIGHT		4 · TYPE		5 · POLE MATERIAL		6 · POLE HEIGHT
LXS-	MAV	–	2	–	L	–	1	–	1	–	A	–	25

1
SOCK DIAMETER

0 = Not included
2 = 250 mm
3 = 300 mm
4 = 450 mm
6 = 600 mm
9 = 900 mm

2
SOCK COLOUR AND MATERIAL

0 = Not included
L = Red nylon
M = Red/white nylon
N = White nylon
P = Orange nylon
S = Red polyester
T = Red/white polyester
U = White polyester
W = Orange polyester

3
LIGHT

0 = Not included
1 = Obstruction IP
2 = Internal CET IP
3 = Internal CET + obstruction IP
4 = Obstruction Ex
5 = Internal CET Ex
6 = Internal CET + obstruction Ex

4
TYPE

0 = Not included
1 = Fixed
2 = Frangible
3 = Tilting
4 = Frangible and tilting

5
POLE MATERIAL

0 = Not included
A = Aluminium
G = GRP
S = Stainless steel
B = Painted aluminium
H = Painted GRP
T = Painted stainless steel

6
POLE HEIGHT

0 = Not included
25 = 2.5 m
30 = 3 m
35 = 3.5 m
XY = Custom

TECHNICAL FEATURES

SOCK	
Colour	Red-white, orange-white, alternating two-colour
Material	Nylon or polyester
Fabric weight	150 g/m²
Visibility	Up to 200 m
Strength	Mechanical resistance to wind and tearing
Protection	Waterproof, UV-resistant colour
Options	TWIN version

MECHANICAL	
Pole material	Aluminium, GRP, SS304 stainless steel
Windsock centre height	3.5 m (standard); 4 to 6 m (reinforced)
Pole structure	Fixed, frangible (GRP only), frangible + tilting (GRP only), collapsible (tilting)
Paint finish	Red/white bands (GRP only)
Basket	SS304 stainless steel
Basket rotation	360° on rolling bearings

DIMENSIONS AND CERTIFICATIONS

LUXSOLAR model	Large Ø (mm)	Small Ø (mm)	Length (mm)
LXS-MAV 30-120	300	180	1200
LXS-MAV 45-250	450	200	2500
LXS-MAV 60-240	600	300	2400
LXS-MAV 90-375	900	450	3750



Four standard sizes, from 1.2 m to 3.75 m in length.

CERTIFICATIONS

ICAO Annex 14 Vol. II
Heliports – par. 5.1.1

ICAO Annex 14 Vol. I
Visual Aids – par. 5.1.1

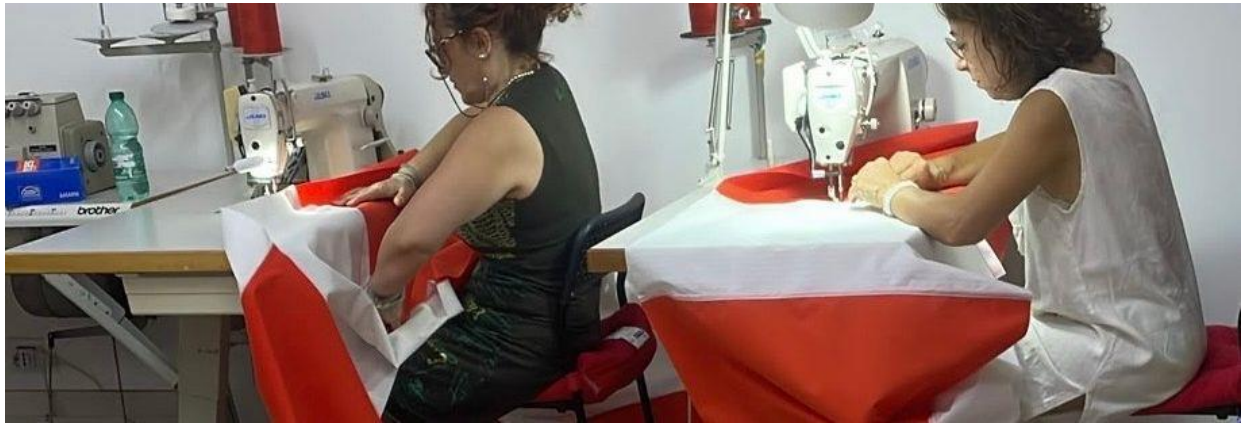
FAA
AC 150/5345-27E

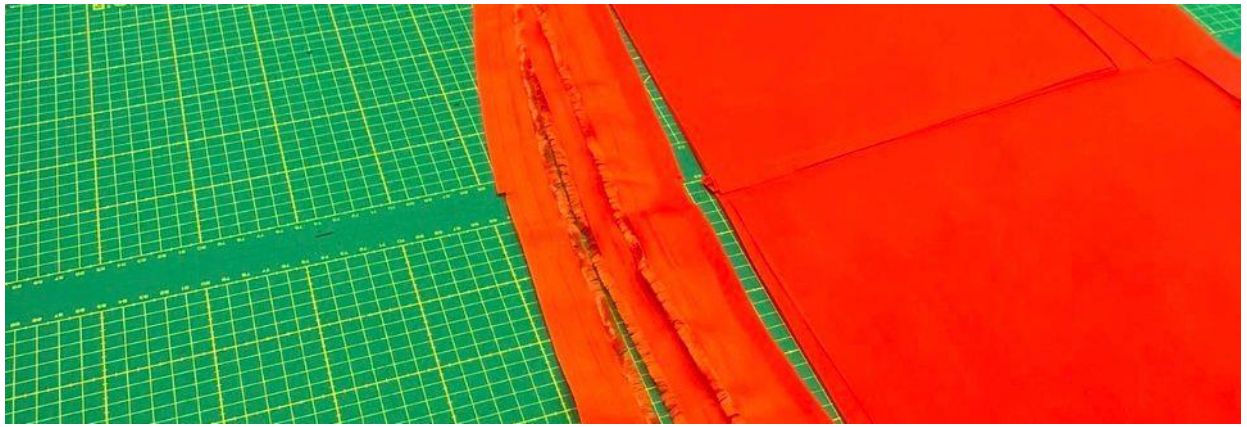
EASA Chapter F
Heliport Windsock Visual Aids

THE SOCKS TAKE SHAPE

Made in Italy

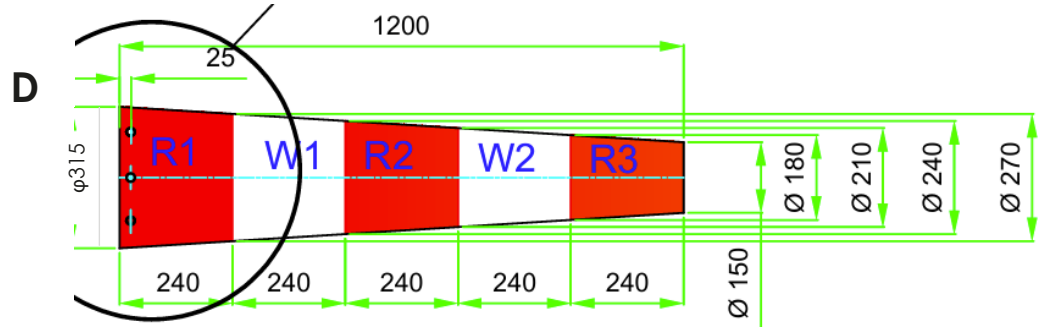






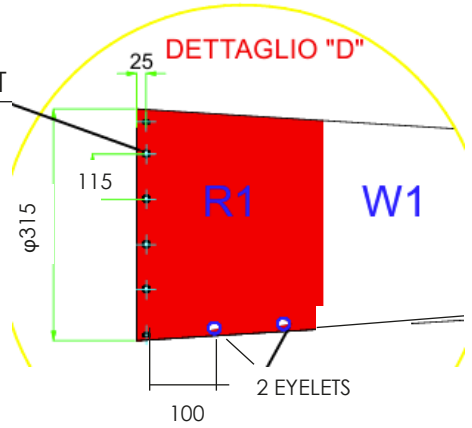
AUXILIARY SOCK LXS-MAV-30-120

Standard dimensions for helipads



ALSO SUITABLE AS MAIN SOCK
FOR ELEVATED HELIPADS

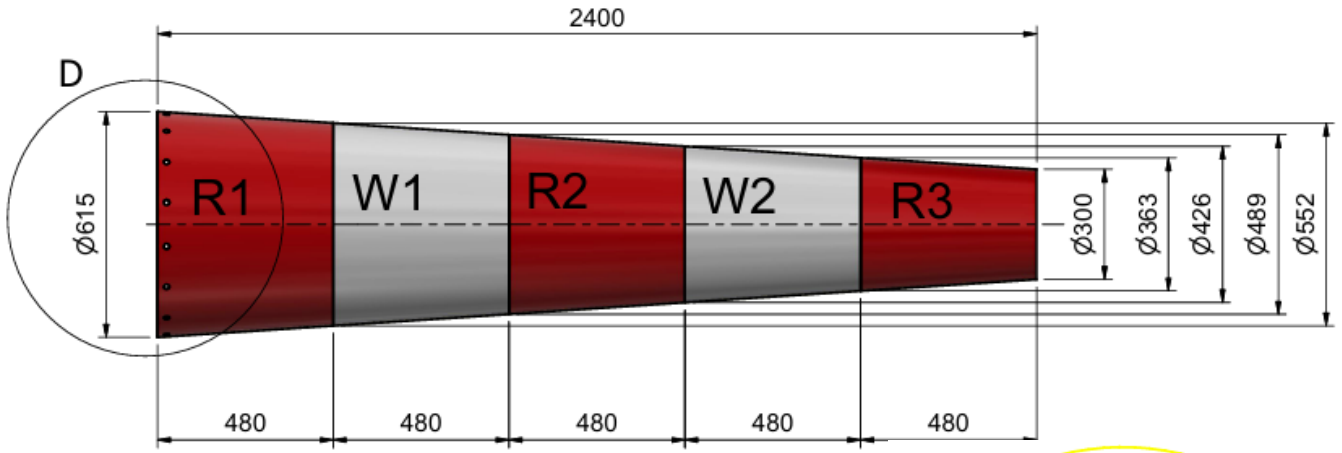
5 × LXS-MAV-VL40 EYELETS TO FIX THE SOCK TO THE BASKET
SS316 MATERIAL, HOLE φ 10 mm



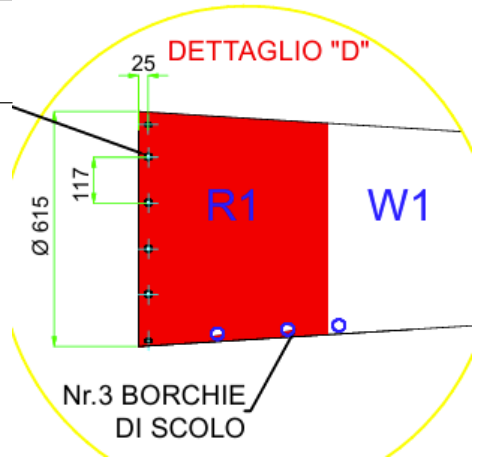
LENGTH 1200 mm
LARGE DIAMETER 300 mm
SMALL DIAMETER 180 mm

MAIN SOCK LXS-MAV-60-240

Standard dimensions for helipads



6 × LXS-MAV-VL40 EYELETS TO FIX THE SOCK TO THE BASKET
SS316 MATERIAL, HOLE φ 10 mm



LENGTH 2400 mm
LARGE DIAMETER 600 mm
SMALL DIAMETER 300 mm

COLOUR FASTNESS TEST

MAV windsock fabric · UNI EN ISO 105-B02:2014 and UNI EN ISO 105-B04:2024

ORANGE



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www.textilecomo.com

00041

Test Report No.: 2506025-001

Date Test Report 02-dic-25
Acceptance: 2506025
Arrival date sample 10-nov-25
Start date test 10-nov-25
End date test 01-dic-25
References: Ordine n. 240810 del 05/11/2025 - DDT N. 1429 del 5/11/25
Sampling Mode: Sampling by Customer *

Customer Code 08891
Dear:
CE2K SRL
Via Sabatelli, 38
23868 VALMADRERA (LC) Italia
C.a. Beatrice Greppi
Phone: +39 0341 260926

[C] Item: MAV-CO-01 (ORANGE)
[C] Declared Composition: 99% Polyester + 1% ESD, PU Coating, waterproof
[C] End use: fabric for EX enviroment use and aeronautical
[C] Typology: yarn-dyed fabric
Return: sample and specimens enclosed

Test Results

Test	Method	U.M.	Result
20605 COLOUR FASTNESS TO ARTIFICIAL LIGHT (XENON ARC LAMP) **Start date test** 11/11/2025 **End date test** 18/11/2025 **Instrument:** Q-SUN XE-2-HS Exposure cycle: A1 Exposure conditions: Normal condition (temperate zone) Blue wool references: series from 1 to 8 Assessment cabinet: complying with ISO 105 A01, under D65 (Artificial Daylight) illumination Exposure method: 2	**UNI EN ISO 105-B02:2014**		-
Colour fastness to light		grade	3-4
* **20585 COLOUR FASTNESS TO ARTIFICIAL WEATHERING- Xenon arc fading lamp test** **Start date test** 11/11/2025 **End date test** 01/12/2025 **Instrument:** Q-SUN XE-2-HS Exposure method: 2 Exposure conditions: - Light: 29 minutes - Light + water: 1 minute - Chamber temperature: 38°C Blue wool standard: series from 1 to 8 Assessment cabinet: provide to ISO 105 A01, under D65 (Artificial Daylight) illumination	**UNI EN ISO 105-B04:2024**		-
Colour fastness to artificial weathering		grade	2-3

WHITE



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www.textilecomo.com

00041

Test Report No.: 2506025-002

Date Test Report 02-dic-25
Acceptance: 2506025
Arrival date sample 10-nov-25
Start date test 10-nov-25
End date test 01-dic-25
References: Ordine n. 240810 del 05/11/2025 - DDT N. 1429 del 5/11/25
Sampling Mode: Sampling by Customer *

Customer Code 08891
Dear:
CE2K SRL
Via Sabatelli, 38
23868 VALMADRERA (LC) Italia
C.a. Beatrice Greppi
Phone: +39 0341 260926

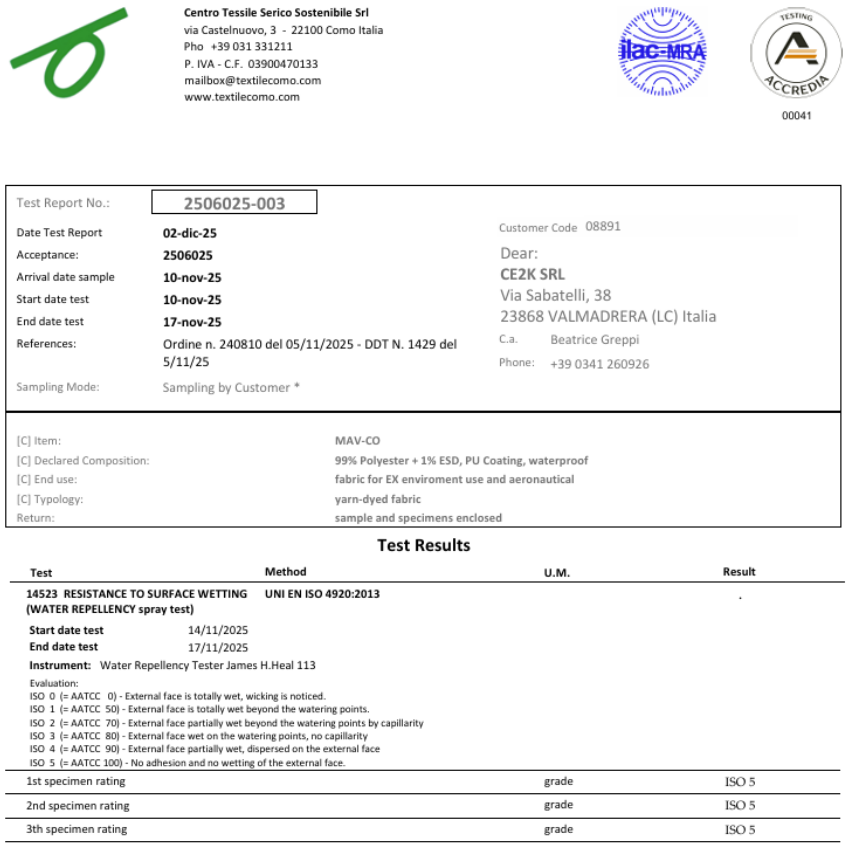
[C] Item: MAV-CO-02 (WHITE)
[C] Declared Composition: 99% Polyester + 1% ESD, PU Coating, waterproof
[C] End use: fabric for EX enviroment use and aeronautical
[C] Typology: yarn-dyed fabric
Return: sample and specimens enclosed

Test Results

Test	Method	U.M.	Result
20605 COLOUR FASTNESS TO ARTIFICIAL LIGHT (XENON ARC LAMP) **Start date test** 11/11/2025 **End date test** 18/11/2025 **Instrument:** Q-SUN XE-2-HS Exposure cycle: A1 Exposure conditions: Normal condition (temperate zone) Blue wool references: series from 1 to 8 Assessment cabinet: complying with ISO 105 A01, under D65 (Artificial Daylight) illumination Exposure method: 2	**UNI EN ISO 105-B02:2014**		-
Colour fastness to light		grade	3-4
* **20585 COLOUR FASTNESS TO ARTIFICIAL WEATHERING- Xenon arc fading lamp test** **Start date test** 11/11/2025 **End date test** 01/12/2025 **Instrument:** Q-SUN XE-2-HS Exposure method: 2 Exposure conditions: - Light: 29 minutes - Light + water: 1 minute - Chamber temperature: 38°C Blue wool standard: series from 1 to 8 Assessment cabinet: provide to ISO 105 A01, under D65 (Artificial Daylight) illumination	**UNI EN ISO 105-B04:2024**		-
Colour fastness to artificial weathering		grade	3-4

WATER REPELLENCY TEST

MAV sock fabric · UNI EN ISO 4920:2013



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00041

Test Report No.: **2506025-003**

Date Test Report	**02-dic-25**
Acceptance:	**2506025**
Arrival date sample	**10-nov-25**
Start date test	**10-nov-25**
End date test	**17-nov-25**
References:	Ordine n. 240810 del 05/11/2025 - DDT N. 1429 del 5/11/25
Sampling Mode:	Sampling by Customer *

Customer Code 08891

Dear:
CE2K SRL
Via Sabatelli, 38
23868 VALMADRERA (LC) Italia
C.a. Beatrice Greppi
Phone: +39 0341 260926

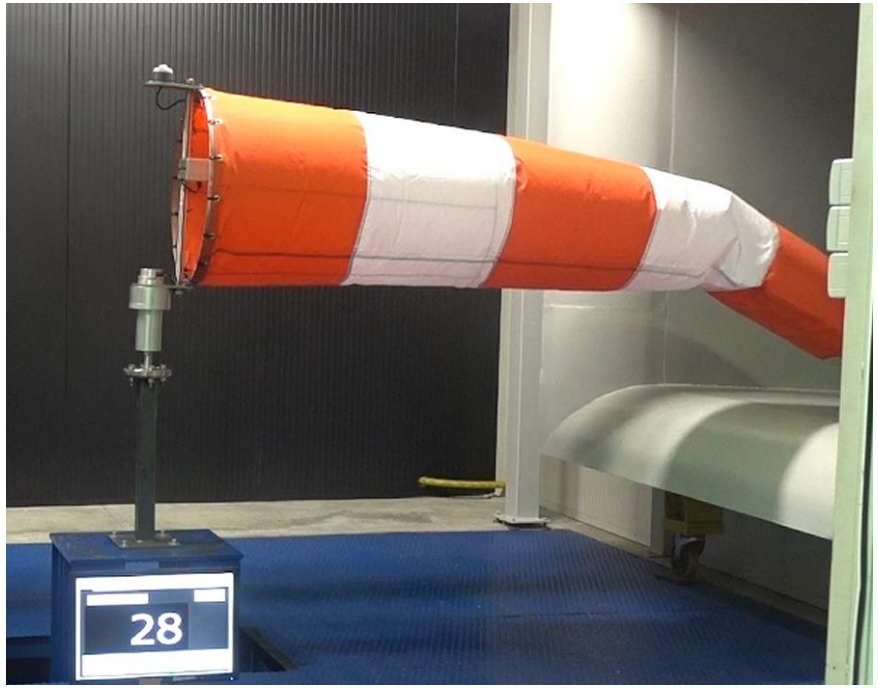
[C] Item:	**MAV-CO**
[C] Declared Composition:	**99% Polyester + 1% ESD, PU Coating, waterproof**
[C] End use:	**fabric for EX enviroment use and aeronautical**
[C] Typology:	**yarn-dyed fabric**
Return:	**sample and specimens enclosed**

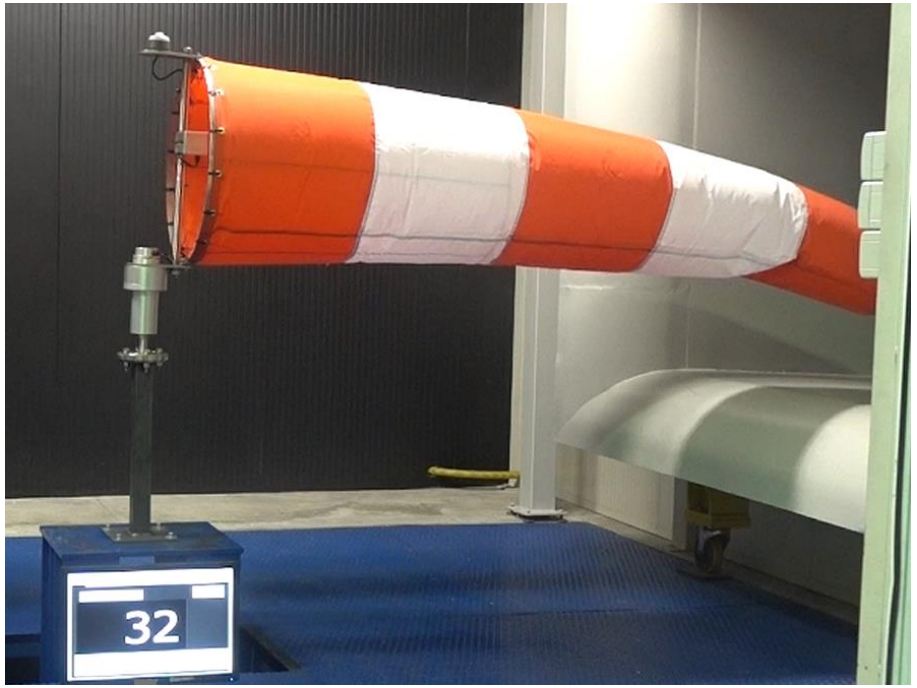
Test Results

Test	Method	U.M.	Result
14523 RESISTANCE TO SURFACE WETTING (WATER REPELLENCY spray test)	**UNI EN ISO 4920:2013**		
Start date test 14/11/2025 **End date test** 17/11/2025 **Instrument:** Water Repellency Tester James H.Heal 113 Evaluation: ISO 0 (= AATCC 0) - External face is totally wet, wicking is noticed. ISO 1 (= AATCC 50) - External face is totally wet beyond the watering points. ISO 2 (= AATCC 70) - External face partially wet beyond the watering points by capillarity ISO 3 (= AATCC 80) - External face wet on the watering points, no capillarity ISO 4 (= AATCC 90) - External face partially wet, dispersed on the external face ISO 5 (= AATCC 100) - No adhesion and no wetting of the external face.			
1st specimen rating		grade	ISO 5
2nd specimen rating		grade	ISO 5
3th specimen rating		grade	ISO 5

HURRICANE RESISTANCE TEST

LXS-MAV-6-T-3 windsock in the wind tunnel





15–17 KNOTS

Full extension between 15 and 17 knots (28–32 km/h).

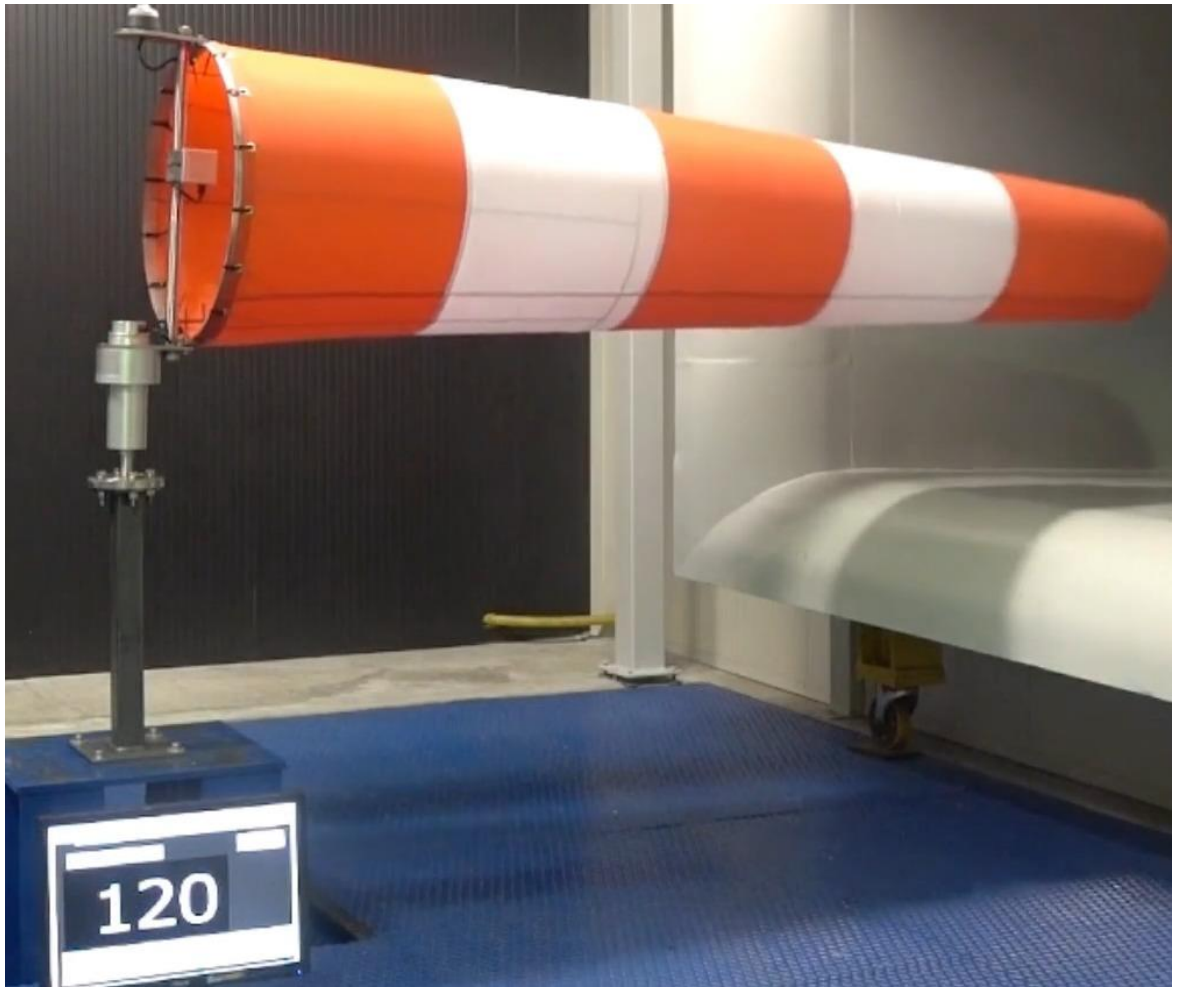
LIGHTWEIGHT FABRIC + CET®

Full extension thanks to the lightweight fabric and the patented CET® internal light source.

RESISTANCE TEST · CATEGORY 1 HURRICANE

LXS-MAV-6-T-3 windsock in the wind tunnel at 120 km/h.

120 KM/H	**64.3** KNOTS
33.3 M/S	**75** MPH



RESISTANCE TEST · CATEGORY 2 HURRICANE

LXS-MAV-6-T-3 windsock in the wind tunnel at 160 km/h.

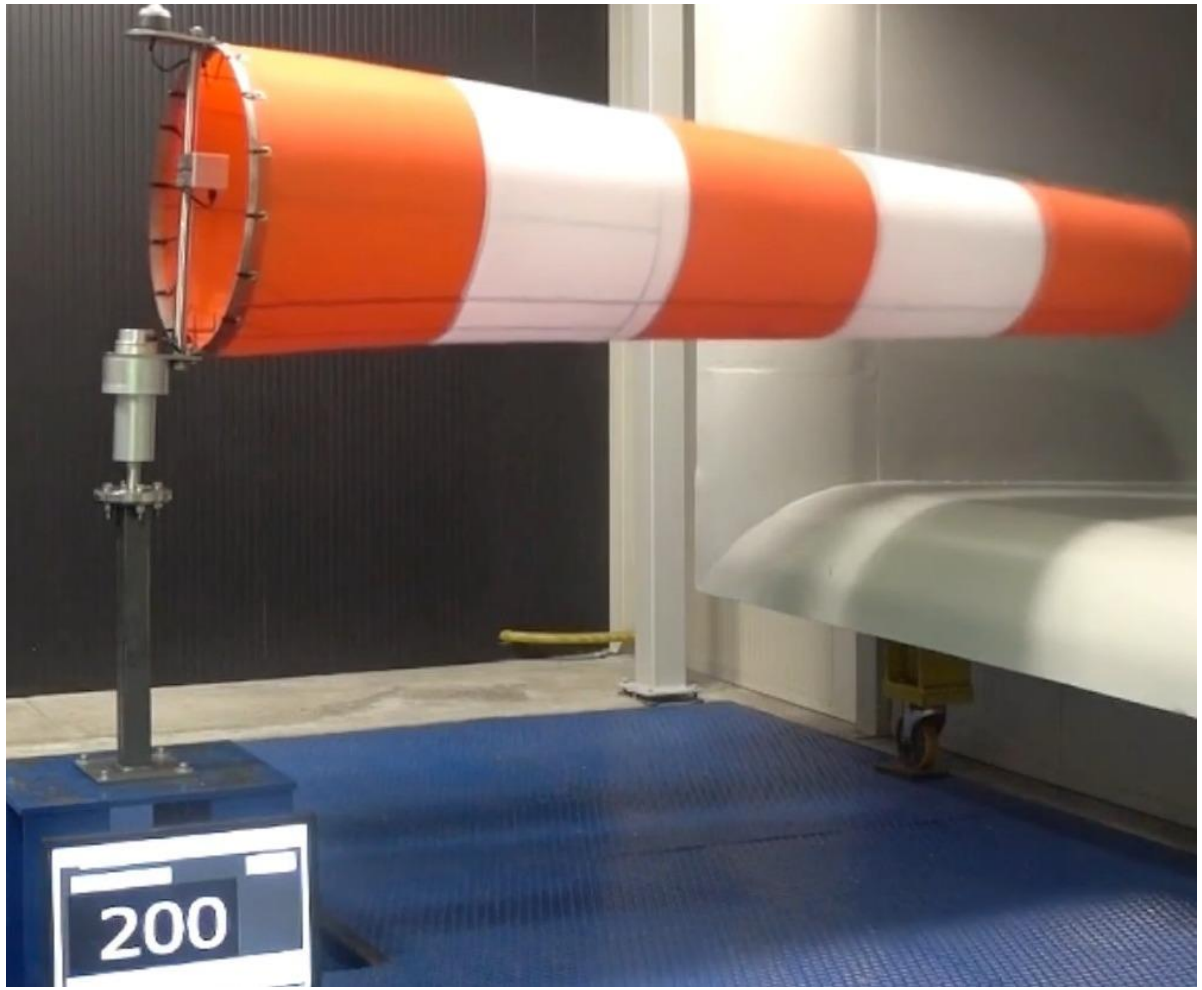
160 KM/H	**85.7** KNOTS
44.4 M/S	**100** MPH



RESISTANCE TEST · CATEGORY 3 HURRICANE

LXS-MAV-6-T-3 windsock in the wind tunnel at 200 km/h.

200 KM/H	**107** KNOTS
55.5 M/S	**125** MPH

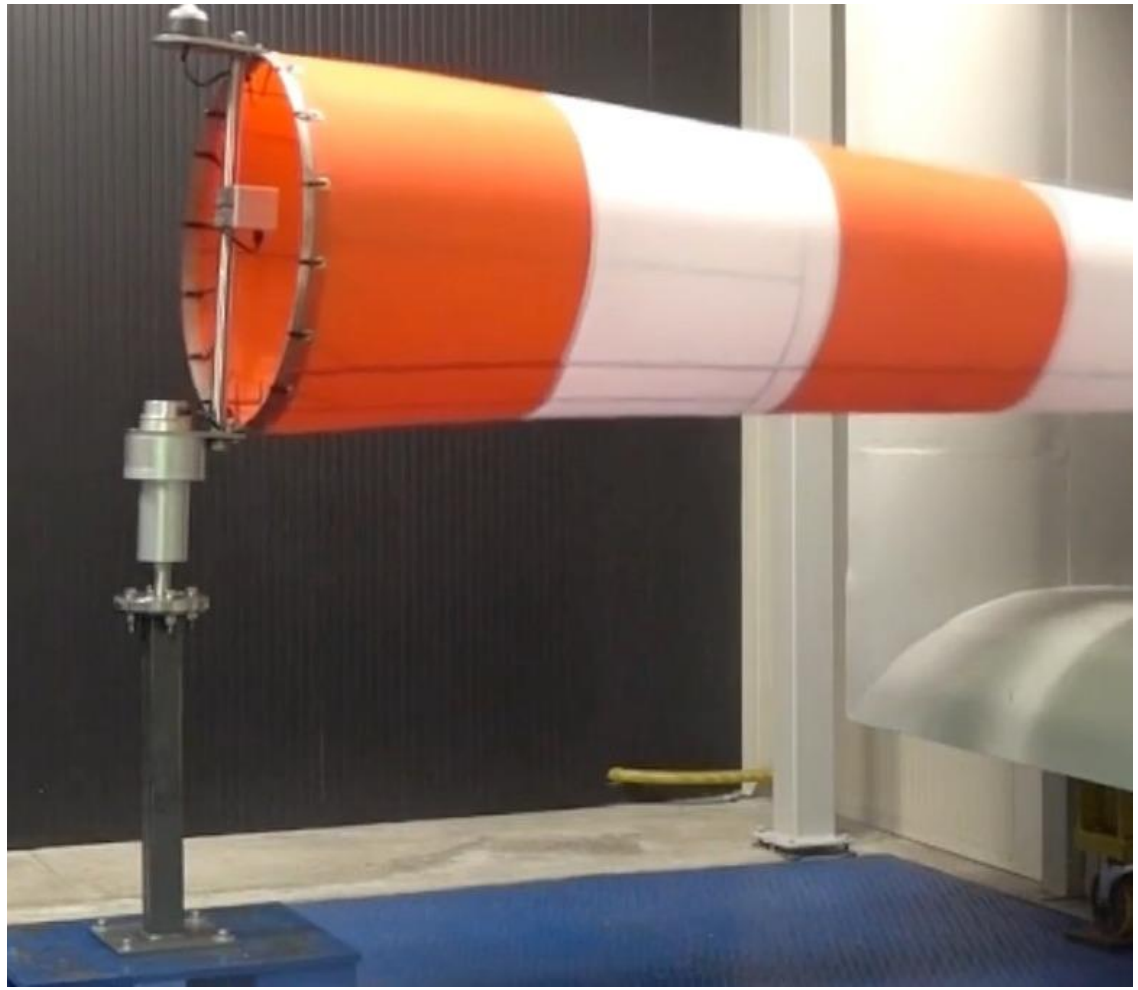


RESISTANCE TEST · CATEGORY 4 HURRICANE

LXS-MAV-6-T-3 windsock in the wind tunnel at 240 km/h.

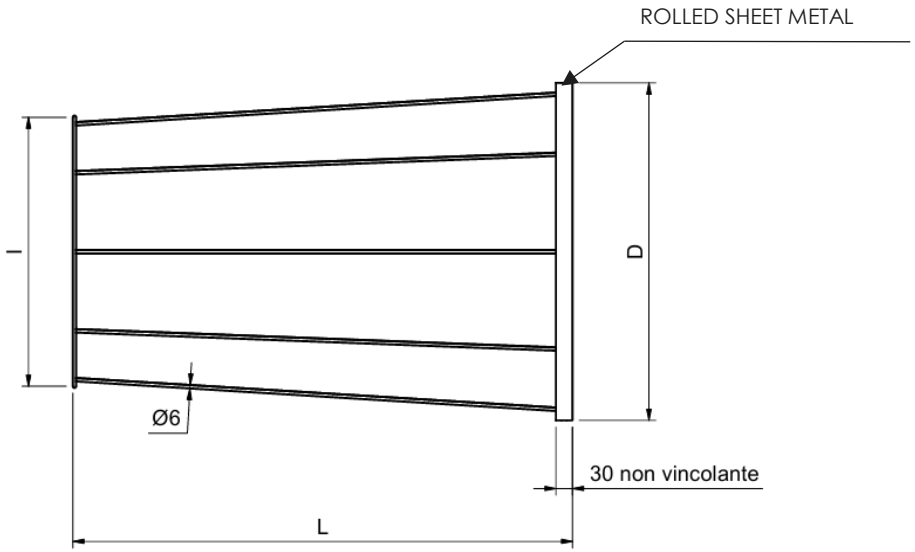
240
KM/H

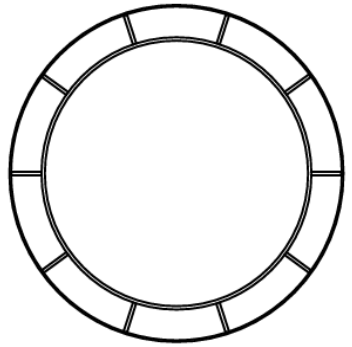
130
KNOTS



THE BASKET

The frame on which the sock is mounted





ELENCO DIMENSIONI			
VERSIONE	D ø	L	I ø
300	300	450	244
450	450	940	366
600	600	900	488
250 (opzionale)	250	356	203
900 (opzionale)	900	1410	731

MATERIAL: 304 STAINLESS STEEL
The basket must hold the sock rigid for 3/8 of its length.
LXS-MAV-60-240: L= (240x3)/8 = 900 mm
LXS-MAV-30-120: L= (120x3)/8 = 450 mm

EXTERNAL LIGHTING

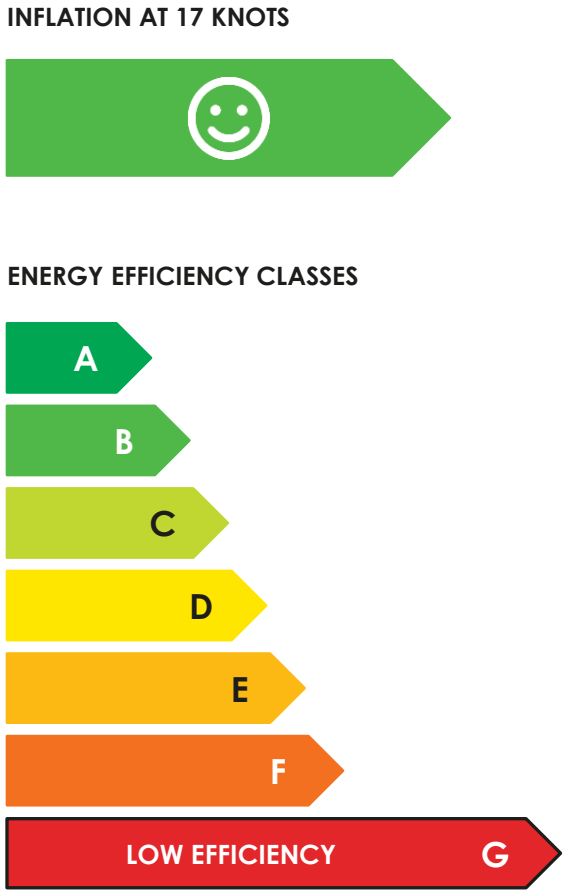
Windsock lighting types

This solution, common when incandescent lamps were still in use, has 4 floodlights placed on the four sides (N, S, E, W), so that the windsock is always lit from above, wherever the wind pushes it.

Energy consumption is very high.

The overall height is a drawback when the structure has to be frangible.





INTERNAL LIGHTING WITH REFLECTOR

Windsock lighting types

This solution uses a light source, which may be LED, fixed to the support pole and not rotating: a reflector attached to the rotating basket directs the light into the windsock.

The reflector significantly reduces the airflow entering the cone and prevents the windsock from extending properly between 15 and 17 knots, as required by the standards.

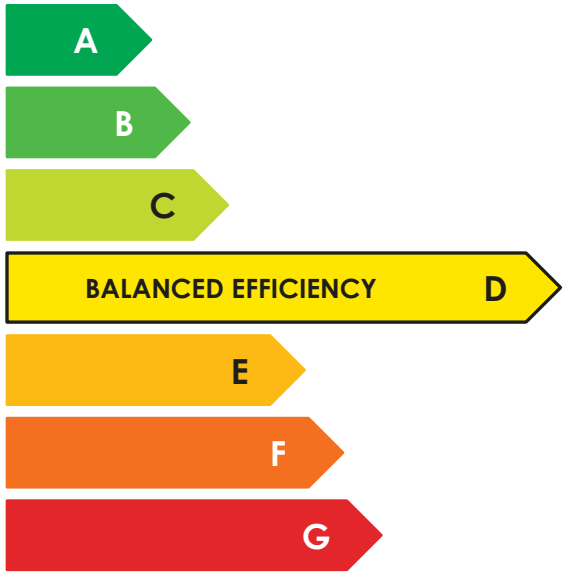
Energy consumption is significant and depends on how clean the reflector is.



INFLATION AT 17 KNOTS



ENERGY EFFICIENCY CLASSES



INTERNAL LIGHTING WITH CET

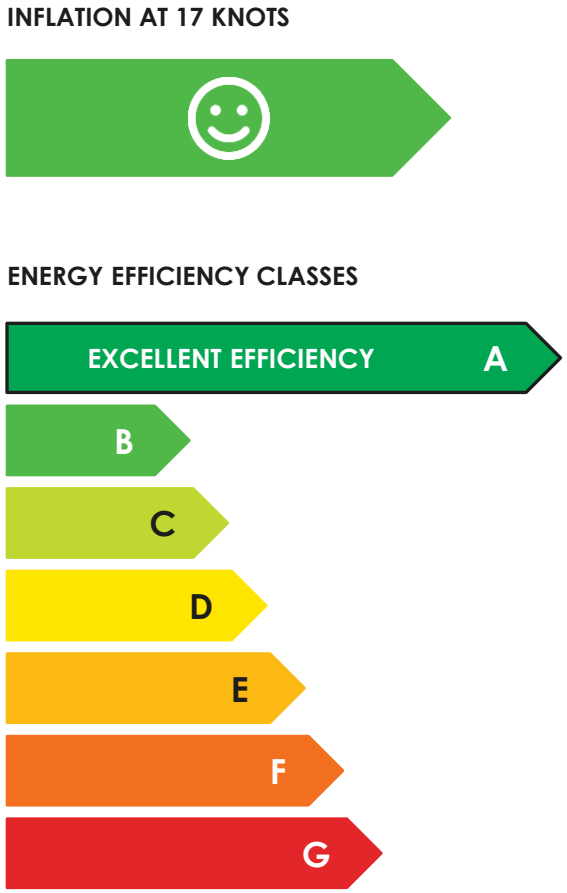
Windsock lighting types

This solution lights the windsock from the inside with minimal energy.

The required power is transferred from the fixed pole to the moving part (basket and windsock) through a system patented by LUXSOLAR:

CET® – Contactless Energy Transmission





CET · CONTACTLESS ENERGY TRANSMISSION

LUXSOLAR's patented power supply system for night-time windsock lighting

01

A windsock consists of a part fixed to the ground (the pole) and a part that rotates freely with the wind direction.

02

Internal lighting requires the light to rotate together with the basket that holds the sock.

03

Powering both the internal light and the top obstruction light would require a cable running up the pole to the rotating part without twisting.

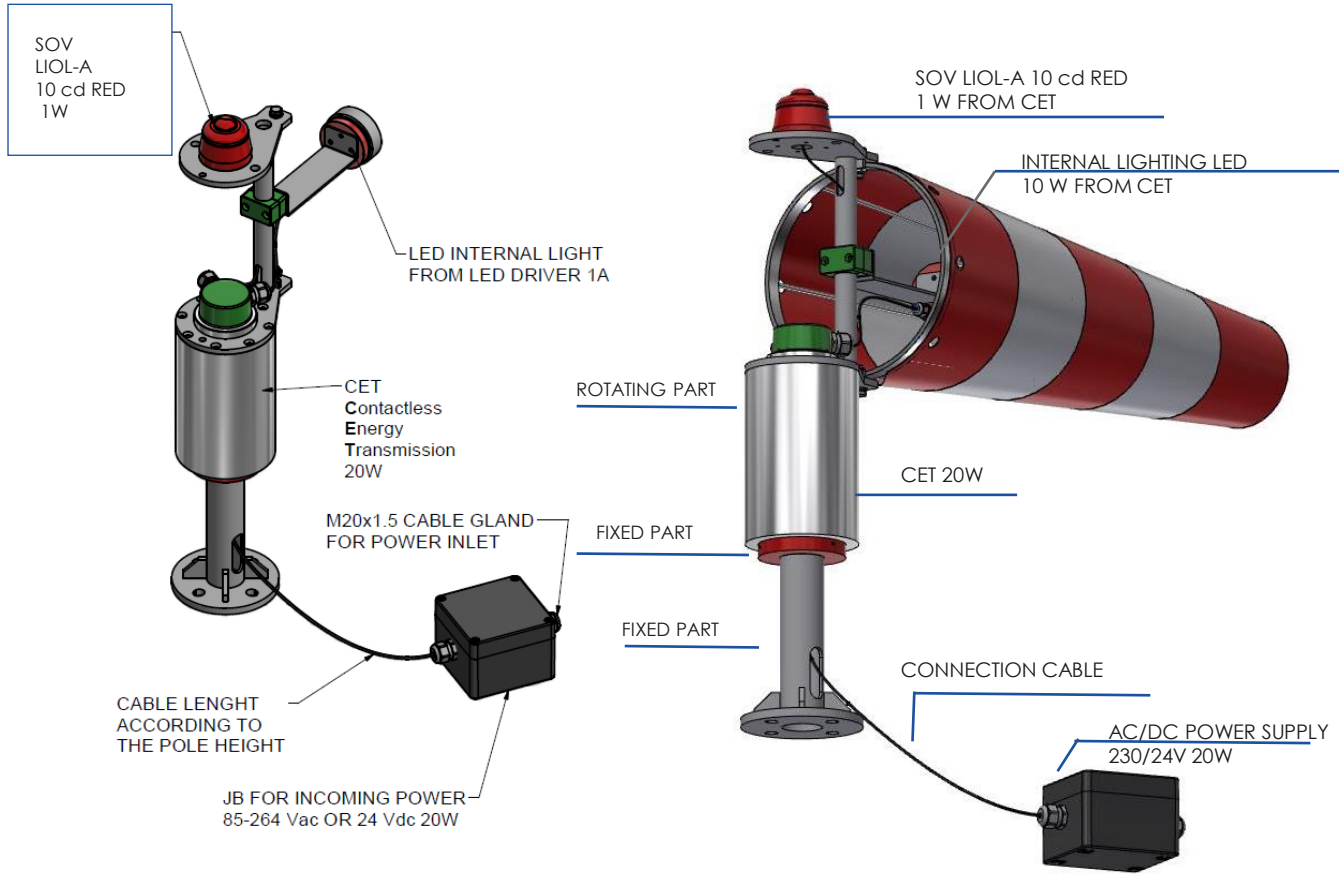
04

LUXSOLAR has patented a system that transfers energy to the moving part through an induction device: the CET (Contactless Energy Transmission).



CET SYSTEM LAYOUT

Contactless Energy Transmission: components and power ratings



LXS-ONE · SOV LIOL-A

Low-intensity aircraft obstruction light, 10 cd



Designed to ICAO Low Intensity Type A/B and FAA L-810 standards, ENAC certified.

With a lightweight base designed for heat dissipation, this LED device is the ideal solution for an efficient, light and compact obstruction light, with a product life of over 10 years and low current consumption.

The LIOL-A / LIOL-B has a steady red light with an omnidirectional horizontal beam, based on a patented optical reflector: the beam has a vertical spread of more than 10°, in line with ICAO requirements and ENAC certification.

APPLICATIONS



FEATURES

- LED technology
- Product life > 10 years
- Consumption: 1 W
- Stabilised light beam
- Protection rating: IP66
- Operating temperature: -20 to +50 °C
- Weight: 0.5 kg

ORDER CODE

	1	2	3	4	5	6
L810-LXS-ONE-		S	7	R	0	S

- 1: ≥10 cd = A; ≥32 cd = B
- 2: Side = S
- 3: 12/24/48 VDC = 7
- 4: R = Red
- 5: 0 = Without twilight sensor and without alarm
- 6: S = Single light

LXS-ONE-A TECHNICAL FEATURES

Aircraft obstruction light

ELECTRICAL

- Designed and built entirely with LED technology
- Power supply 9–60 VDC
- Power draw: 0.8 W at 12–24 V
- Constant-current LED
- MTBF life 100,000 h

OPTICAL

- Steady red light
- LXS-ONE-A: > 10 cd
- Max emission +6° and +10°
- Horizontal beam spread: 360°
- Vertical beam spread: > 10°
- Light-diffusing optical cover

MECHANICAL

- Aluminium body
- UV-resistant PMMA optical dome
- Cable exit via cable gland, 1 m long
- Silicone gasket
- Protection rating: IP66
- Operating temperature: -20 to +50 °C
- Storage temperature: -20 to +50 °C
- Lamp weight: 0.3 kg

OPTIONS

- Lamp mounting bracket
- Infrared version available

APPLICATIONS

- Airports, stacks, tall buildings, chimneys, cranes
- Pipelines, bridges, radio and TV antennas
- Transmission lines, wind turbines
- Wind meters, radar antennas

CERTIFICATIONS

- ICAO Aerodromes Annex 14 Vol. I, Chapter 6: Low Intensity, Type A, steady burning obstacle lights
- FAA AC 150/5345-43; E.B. #67 Lamp type L-810
- CE marking

LXS-MAV-IL

Internal LED illuminator · code LXS-MAV-IL-A-W-4



With a lightweight base designed for heat dissipation, this LED device is the ideal solution for lighting the windsock from the inside, with a product life of over 10 years and low current consumption.

The LXS-MAV-IL has a steady white light with a horizontal beam.

Two light units can be fitted inside the windsock for back-up.

APPLICATIONS



FEATURES

- LED technology
- Product life > 10 years
- Consumption: 10 W
- Stabilised light beam
- Protection rating: IP66
- Operating temperature: -20 to +50 °C
- Weight: 0.5 kg
- Body: aluminium

INSTALLATION



LXS-MAV-IL-A-W-4 TECHNICAL FEATURES

Internal sock illuminator

ELECTRICAL

- Designed and built entirely with LED technology
- Power supply 12 VDC from CET
- Power draw: 10 W
- Constant-current LEDs
- MTBF life 100,000 h

OPTICAL

- Steady white light
- No. of LEDs: 4, with PMMA lenses for light diffusion
- Horizontal emission in line with the windsock
- Beam cone: 20°

MECHANICAL

- Aluminium body with built-in heat sink
- Clear front glass
- Cable exit via cable gland, 1 m long
- Silicone gaskets
- Protection rating: IP66
- Operating temperature: -20 to +50 °C
- Storage temperature: -20 to +50 °C
- Lamp weight: 0.3 kg

OPTIONS

- Lamp mounting bracket
- Infrared version available

CERTIFICATIONS

- ICAO Aerodromes Annex 14 Vol. I, Chapter 6: Low Intensity, Type A, steady burning obstacle lights
- FAA AC 150/5345-43; E.B. #67 Lamp type L-810
- CE marking

FAQ · FREQUENTLY ASKED QUESTIONS

What are the parts of an unlit windsock?	Support pole, windsock basket, fabric sock.
What maximum wind speed must the windsock withstand?	Between 65 and 75 knots (120–138 km/h).
How many dark-coloured bands does the sock have?	Three.
What are the parts of a windsock lit for night use?	Support pole, windsock basket, fabric sock, induction transformer, internal light, red top obstruction light.
How many white bands does the sock have?	Two.
Which colour comes first on the sock, next to the pole?	The dark one.
What materials can the pole be made of?	Lightweight GRP structure, aluminium, stainless steel.
At what wind speed must the windsock be fully extended?	Between 15 and 17 knots (28–32 km/h).
How many windsocks must be installed on a helipad?	At least one main windsock, 152 m from the TLOF.

FAQ · FREQUENTLY ASKED QUESTIONS

Must the windsock pole be frangible?	Yes, if it is an auxiliary windsock on a lightweight GRP structure, just outside the safety area.
Why must a circle be marked around the base of the windsock?	To mark the area the aircraft may approach.
How far from the TLOF must the main windsock be installed?	152.4 m, with a tolerance of 15.2 m.
At what height must the pole tilt to replace the main windsock's sock?	1.8 m.
How far from the safety area must the supplementary windsock be installed?	Just outside it.
How can the obstruction light power cable be kept from twisting around the pole?	The LUXSOLAR CET induction transformer is an excellent choice.
When must the sock be lit?	When the helipad is used at night.
What is the best way to light the sock?	With internal LED lights.
How is a windsock anchored to the ground?	With a buried concrete footing.

FAQ · FREQUENTLY ASKED QUESTIONS

Which obstruction light must be installed on top of the windsock?	A low-intensity (10 candela) steady red obstruction light.
At what height must the main windsock be on a lightweight GRP pole?	3.5 m.
Must the windsock pole be tiltable?	Yes, if taller than 1.8 m, for maintenance.
At what height must the main windsock be on a rigid steel pole?	5.5 m.
What are the mandatory features of a windsock?	Length; inlet and outlet cone diameter; basket length; windsock weight and no obstructions at the inlet, so that it inflates at 15 knots.
How long must the basket holding the sock be?	3/8 of the total sock length.
What size is the main sock?	Large diameter 600 mm, length 2400 mm.
What size is the auxiliary sock, if any?	Large diameter 400 mm, length 1200 mm.

FAQ · FREQUENTLY ASKED QUESTIONS

Does a windsock always need a basket?	Without the basket the windsock may not rotate, so the wind direction may not be shown.
How many knots does each windsock band correspond to?	The first two bands are held open by the basket; the others stand for 3 knots each: 9 knots the third (red), 12 knots the fourth (white), over 15 knots the fifth (red).
If aircraft can approach from two opposite sides, how many main windsocks must be installed?	Two: 152 m in each direction.
What could prevent the windsock from rotating?	If the basket does not turn (for example because the bearings have seized), the windsock does not inflate and may get caught backwards.
Why install windsocks?	Indicating wind direction and speed reduces risks at airports, heliports, bridges and viaducts, and for people living or working near plants that may release hazardous fumes or gases, subject to the Seveso III Directive.
Where should windsocks be installed?	In a clearly visible position for the intended purpose, away from anything that could create turbulence or prevent correct indication of wind direction and speed.

FAQ · FREQUENTLY ASKED QUESTIONS

How is wind speed read?	The windsock has 5 coloured bands: the first two are mounted on the basket and show the wind direction. The others stand for 3 knots each: 9 knots the third, 12 knots the fourth, over 15 knots the fifth.
Is a windsock mandatory?	Yes, where required by: ICAO Annex 14 Vol. II ch. 5; EASA 139/2014; ENAC Spaceport Construction and Operation Regulation 2023; Seveso III Directive (Italian Legislative Decree 105/2015); OSHA 29 CFR 1910.119 Appendix C, 13.
What can prevent the pilot from seeing the windsock properly from the air?	The lack of the guide basket required by the standards: the basket keeps the first part of the windsock visible even with no wind, when the sock hangs vertically.
What can prevent the windsock from inflating properly?	Apart from the rotation tube, any additional metal support structure at the windsock inlet can restrict the incoming wind.
What should the windsock be mounted on?	On a basket, which is fixed to a metal tube with bearings.
Why use a banded windsock rather than a single-colour one?	Coloured bands are more visible against a varied background.

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