

# Lattice Wind Mast

## 84 m and 105 m

### Delivery, installation and maintenance

These lattice constructions are capable of withstanding extreme weather conditions and loads and are suitable for wind resource monitoring in a variety of climate conditions. The mast is assembled on the ground and no equipment or training for work at heights is required. All sensors and related equipment is tested on the ground before beginning of the lift. Booms and sensor installation complies with International Standard IEC 61400-12-1 as well as any other component of the mast structure. The stability of the structure allows maintenance in upright position using standard work at heights equipment. The rectangular booms provide for easy replacement of sensors.



delivery



installation



maintenance

### TECHNICAL SPECIFICATIONS

WIND IMPACT AND ICING		
	Wind speed limit at 10 m – 178 km/h (49.4 m/s)	
	Wind speed limit at 84 m - 242 km/h (67.2 m/s)	
	Wind speed limit at 105 m - 253 km/h (70.3 m/s)	
	Icing 14 mm at max. wind speed	
ASSEMBLY		
	84 m	105 m
Guy-wires	4 levels of 3 guy-wires and 4 levels of 6 guy-wires	6 levels of 3 guy-wires and 5 levels of 6 guy-wires
Material	S235JR steel according to EN 10025	S235JR steel according to EN 10025
Number of sections	27	34
Overall mast weight	2,474 kg	3,284 kg
LOADS OF THE SUPPORTING ANCHORS		
Mast base	19,000 kg	26,700 kg
Anchors at 25 m radius	4,000 kg	-
Anchors at 30 m radius	5,300 kg	-
Anchors at 35 m radius	-	3,900 kg
Anchors at 40 m radius	6,800 kg	9,300 kg
Anchors at 50 m radius	-	11,000 kg

EUROPEAN STANDARDS	
COATING	EN 1461:1999 (Hot-dip Galvanising)
PAINTING	optional daylight marking according to specification of the client
SECTIONS DIMENSIONS 84 M	
LENGTH	3,000 mm
WIDTH	625 mm
WEIGHT	75 kg
DIAMETERS	vertical bars 42 mm; diagonal bars 27 mm
SECTION DIMENSIONS 105 M	
LENGTH	3,000 mm
WIDTH	750 mm
WEIGHT	77 kg & 84 kg
DIAMETERS	vertical bars 50 mm & 42 mm; diagonal bars 27 mm





SME Wind is a group of several companies specialized in manufacturing, installation and maintenance of wind measuring masts and provision of wind resource assessment services in the field of investment process of wind farms development. The company has been operational since its creation in 2006 and since then has specialized in the field of wind resource assessment. The company supplies and installs all range of wind measuring equipment for wind resource assessment and other environmental parameters. The company has installed over 500 wind masts with height from 30 m to 105 m. The lattice design employed in the JR 84 and JR 105 models was commercially released in July 2008 and since then (as of April 2011) we at SME have manufactured and installed 106 masts of this type in the European Union.

When designing our booms we take great care to meet and exceed the standard requirement. In order to achieve the standard centerline wind speed deficit of 0.5% for a  $C_T$  value of 0.31 (for our JR 84 model) and 0.268 (for our JR 105 model) a length of 4 times L, or  $4 \times 0.625 \text{ m} = 2.50 \text{ m}$  (for our JR 84 model) and approx. 3.5 times L, or  $3.5 \times 0.750 \text{ m} = 2.65 \text{ m}$  (for our JR 105 model) is necessary.

For the current model of the 84 m mast, we offer as standard 3.50 m booms thus further reducing the uncertainty of the measurement way below the threshold defined by the IEC 61400-12-1. For a  $C_T$  value of 0.31 and boom length of 3.50 m the centerline wind speed deficit is calculated to be 0.285%.

For the current model of the 105 m mast, we offer as standard 3.75 m booms. For a  $C_T$  value of 0.268 and boom length of 3.75 m the centerline wind speed deficit is calculated to be 0.296%.

