



**General operational limits for rotor blade type:
OLW 750Basic & OLW 750Tip-Brake**

Rotor configuration:

Number of blades in rotor	:	2 or 3
Placement of rotor	:	upwind or downwind
Power regulation	:	stall or pitch
Yaw system	:	forced or free
Hub design	:	rigid or teeter

Operational limits: (max. values)

Rotor diameter	D	:	15,96 m	
Tip speed (operation)	Vtip	:	50,19 m/s	
Generator power	Pel	:	50-75 kW	1)
Yaw error (operation)	sw	:	20°	2)
Cut out wind	Vo	:	25 m/s	1)
Survival wind	Ve	:	70 m/s	3)
Tip speed for release of tip spoiler	ne	:	1.1Vtip	
Brake torque (nominal on rotor shaft)	Mbr	:	x Nm	
Brake torque (emergency)	Mbr,e	:	x Nm	
Time for activation of tipspoiler	t	:	1<t sec	4)



Operation temperature : Min -20°C – max 55°C
OAT : (Outside Ambient Temperature)
: Otherwise ask Olsen Wings

Operation under icing conditions: Under extreme climatic conditions where icing has added an unbalance, the operation must stop until a deicing has taken place.

All wind speeds stated are measured in hub height.

1) 10 min. mean values

2) At a max. Yaw error of 20° is understood.

The angle between the wind direction and the axis of the turbine systematically has a mean values greater than 20°

3) 2 sec. mean values.

4)

The tip brake release system must be dampened in order to prevent damage on the tip mechanism from inertia forces on the tip spoiler.

5) Blades balanced set wise to 10 grams at tip and 50 grams at root.

6) Aero dynamic tip-brake

Tip-brakes are **emergency** brakes, and can not be used as speed control.



Dimensions:

Blade length	1	:	7515 mm ± 5 mm
Max. root chord	Croot	:	752 mm ± 5 mm
Tip chord	Ctip	:	176 mm ± 2 mm
Blade area	A	:	3,848 m ²
Twist		:	11.8° ± 0,5°
Airfoil section		:	xxxx
Natural frequency flapwise		:	Hz
Natural frequency edgewise		:	Hz
Blade weight OLW 750Basic	m	:	125 kg ± 3 kg
Blade weight OLW 750Tip-brake	m	:	134 kg ± 3 kg
C of G distance from root base OLW750Basic	C.o.G.	:	2358mm± 10mm
C of G distance from root base OLW750Tip	C.o.G.	:	2770 mm± 10mm
Direction of rotation		:	Clockwise
Selfstarting		:	Yes

Installation dimensions:

Root flange outside diameter	Du	:	420 mm
Bolt Circle diameter	BCD	:	360 mm ± 1 mm
Number of bolts	n	:	30
Bolt size	M	:	12 mm (8.8 grade)
Torque tightening		:	8.8 steel requirement
Tip to tower distance (min.)		:	1500 mm

GRP/steel connection:

Embedded high strength steel bolts, with internal threads.



Aerodynamic brake: : 6)

Type	: Tip spoiler
Length	: 915 mm \pm 5 mm
Movement approx.	: 90°
Activation	: Hydraulic and mechanical. (<i>Not included from factory</i>)
Deploy length	: 110 mm.
Tip shaft threads	: Internal M16
Weight	: 12,3 kg \pm 0.2 kg
Center of Gravity for tip weight	: 6560 mm \pm 5 mm measured from root base

Materials used:

Shell, spar and root	: Fiber glass/polyester
Embedded nuts for mounting	: Steel 8.8
Spoiler mechanism	: Stainless steel

The Olsen Wings reserves the right to amend specifications without prior notice.