

Summary of Cup Anemometer Classification According to IEC 61400-121 CDV requirements

Make and Type: RISØ P2546

Description:

Rotor diameter: 188mm
 Cup diameter: 70mm
 Height: 285mm
 Signal reading: Permanent magnet with switch, two pulses per revolution

Reference report: RISØ-R-1364(ed. 2) (EN), Mar 2004
 IEC 88/185/CDV

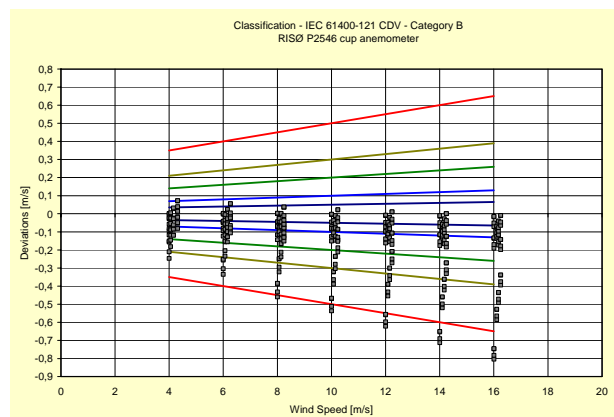
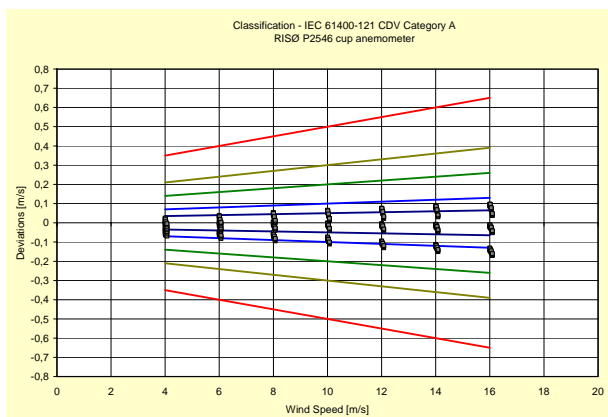


Classification Results:

Method: IEC 61400-121 CDV (IEC 88/185/CDV)
 Classification is made according to a horizontal wind speed definition
 Category A and B ranges of influential parameters shown in tables below
 (longitudinal length scale 350m)

	Class A	
	Min	Max
Wind speed range [m/s]	4	16
Turbulence intensity	0,03	0,12+0,48 /V
Turbulence structure $\sigma_u/\sigma_v/\sigma_w$	1/0,8/0,5 (non-isotropic)	
Air temp. [°C]	0	40
Air density [kg/m ³]	0,9	1,35
Average flow inclination [°]	-3	3

	Class B	
	Min	Max
Wind speed range [m/s]	4	16
Turbulence intensity	0,03	0,12+0,96 /V
Turbulence structure $\sigma_u/\sigma_v/\sigma_w$	1/1/1 (isotropic)	
Air temp. [°C]	-10	40
Air density [kg/m ³]	0,9	1,35
Average flow inclination [°]	-15	15



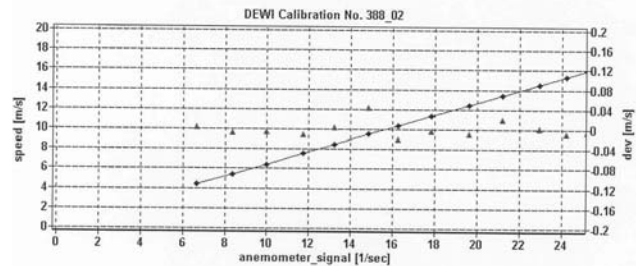
Results:

Category A: Class 1,31
 Category B: Class 6,18

Basic measurements of characteristics

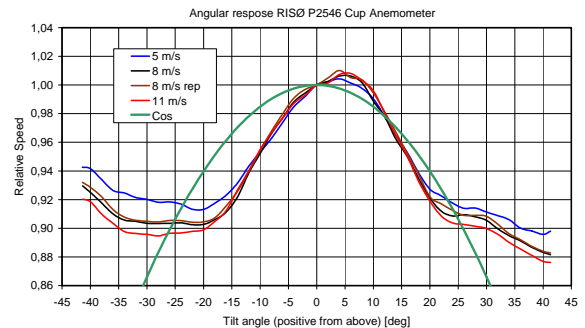
Calibration

Calibration certificate: DEWI 22/4-2002
 Slope: 0.62251 m
 Offset: 0.241 m/s
 Correlation r^2 : 0.999991
 Uncertainty: 0.08-0.14m/s



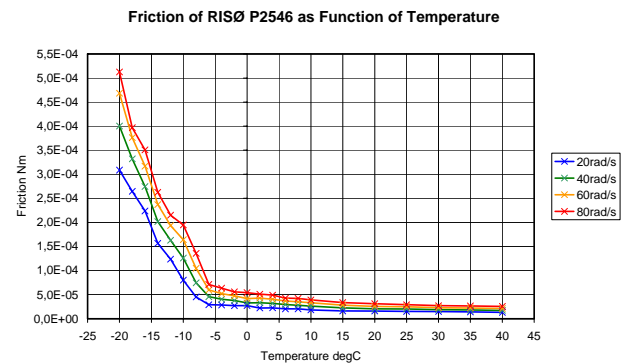
Angular Characteristics

Wind tunnel: FOI-LT5
 Wind speeds: 5, 8, 11m/s



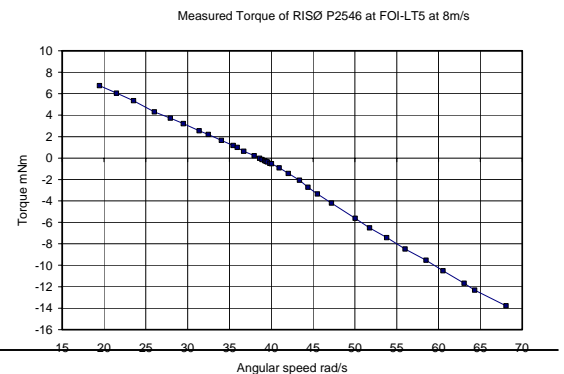
Friction Characteristics

Method: Flywheel testing in climate chamber
 Temperature range: -15°C to 40°C



Torque Characteristics

Wind tunnel: FOI-LT5
 Wind speed: 8m/s
 From this torque measurement the generalized torque coefficient versus speed ratio was derived



Rotor Inertia

Method: Oscillation test
 Inertia: 0,000101 kgm²