

Site forecast for power pilots

Explanations - page 1



Frequently used abbreviations

- UTC Universal Time Coordinated
- MSL Height above sea level *[Mean Sea Level]*
- GND Height above ground *[Ground]*
- FL Flight level - height above a pressure level of 1013,25 hPa in standard atmosphere *[Flight Level]*
Example: FL100 corresponds to 10.000 ft above the pressure level of 1013,25 hPa
- VFR Visual Flight Rules
- m Meter *[100 m correspond to 328 ft]*
- ft Feet *[100 ft correspond to 30,48 m]*

Title

- ▶ Location of forecast
- ▶ Starting day of forecast
- ▶ Reference height
- ▶ Sunrise and sunset in UTC

Los Castillejos — Th, 09.12.10 — 0 - 500 m, reference 0 m — 07:20 ☀ 17:07									
UTC	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
Solar radiation [W/m ²]	210	370	470	510	500	420	290	90	

Insolation

- ▶ Solar radiation in Watt per m²
- ▶ On a typical middle European summer day midday values are around 1000 W/m²
- ▶ A grey November day shows values around 100 W/m²

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Clouds

- ▶ Information about the optical thickness (vertical extend) of layer clouds
- ▶ High clouds
 - Ice clouds (normally above 7000 m MSL)
 - Cirrus
- ▶ Midlevel clouds
 - e.g. Altocumulus

Solar radiation [W/m ²]									
	270	10							
High clouds									
Midlevel clouds									
Rel. humidity [3.000m]	75%	100%	100%	100%	95%	95%	95%	95%	95%

- ▶ Vertical extend in four categories:
 - ☐ Non-existing or very weak
 - ☐ Weak
 - ☐ Medium
 - ☐ Strong

Relative humidity in FL100

- ▶ Relative humidity is a benchmark for midlevel clouds around FL100

Midlevel clouds									
Rel. humidity [FL100]	70%	75%	75%	75%	75%	85%	85%	85%	85%
Pot. VFR-flight hours	0%	100%	100%	100%	100%	100%	100%	100%	100%

- ... 70% Probably no midlevel clouds
Cruise in FL 100 possible
- 70% ... 90% Midlevel clouds likely
- 90% ... 100% Midlevel clouds present

Flight possibility under VFR

- ▶ Hourly sum of all weather conditions as a **single value**
- ▶ VFR limitations can be seen at one glance
- ▶ The sum of the depicted hourly percentage values can then be seen in the chart *Potential daily VFR hours*




Rel. humidity [FL100]	30%	30%	25%	25%	30%	50%	70%	70%	55%	35%
Pot. VFR-flight hours	0%	0%	0%	100%	100%	100%	100%	100%	100%	30%
Spread tendency										

- 100% No limitations for VFR flight
- 50% Some limitations for VFR flight (e.g. showers)
- 0% No flights possible under VFR

Spread and Cumulus cover

- ▶ Tendency of the Cumulus to spread in the upper level due to an inversion
- ▶ Cumulus cover in octas

Pot. VFR-flight hours	0%	0%	0%	100%	100%	100%	100%	100%	100%	30%
Spread tendency										
Octas of Cumulus				3/8	4/8	5/8	5/8	5/8		
Cumulus top [ft MSL]										

-  Weak spread
-  Medium spread
-  Strong spread

Cumulus tops and Cumulus base

- ▶ Upper extend of Cumulus in feet above MSL
- ▶ Base of Cumulus in feet above MSL

Octas of Cumulus											
Cumulus top [ft MSL]	2.500	5.000	5.000	5.500	6.000	5.000	3.000	3.000			
Cumulus base [ft MSL]			2.000	3.000	3.000	3.000	2.000				
Crit. ceiling [ft]											

Critical ceiling

- ▶ Lower base of layer clouds in feet above ground

Cumulus base [ft MSL]										
Crit. ceiling [ft]	<2000	<500	<500	<500	<500	<500	<1000	<1000	<500	
Crit. visibility	BR	HZ	FG	FG	HZ	HZ	BR	HZ	FG	

- <2000 Complete cover of layer clouds below 2000 ft
- <1000 .. below 1000 ft
- <500 .. below 500 ft

Critical visibility

- ▶ Critical visibility at ground level
- ▶ The ICAO shortcuts are both in English [FG, HZ] and French [BR]

Crit. ceiling [ft]	<2000	<500	<500	<500	<500	<500	<1000	<1000	<500	
Crit. visibility	BR	HZ	FG	FG	HZ	HZ	BR	HZ	FG	
Weather conditions										

- BR [BRUME] Visibility under 5000 m, haze possible
- HZ [HAZE] Visibility under 2000 m, haze possible
- FG [FOG] Visibility under 1000 m, fog possible

Site forecast for power pilots

Explanations - page 3



Weather conditions and precipitation

- ▶ Significant weather conditions displayed by standard symbols
- ▶ A Cumulus symbol on days without frontal activity indicates thermal activity with Cumulus clouds
- ▶ Precipitation in mm per hour

Crit. visibility	BR	HZ	FG	FG	HZ	HZ	BR	HZ	FG
Weather conditions	''	''	☁	☁	⬇	⬇	⬇	⬇	☁
Total precipitation [mm/h]					0,3	2,6	0,4	4,1	
Wind FL85 [kt]	305°/21	305°/24	300°/25	315°/24	325°/24	330°/24	330°/24	335°/25	335°/25

- ⬇ Light showers
- ⬇ Moderate showers
- ⬇ Heavy showers
- ⬇ Showers of rain and snow
- ⬇ Heavy sh. of rain and snow
- ⬇ Snow shower
- ⬇ Heavy snow showers
- '' Drizzle
- Light rain
- Moderate rain
- Heavy rain
- Sleet
- Heavy sleet
- ❄ Light snowfall
- ❄ Moderate snowfall
- ❄ Heavy snowfall
- 🌧 Freezing rain
- 🌧 Heavy freezing rain
- ☁ Cumulus humilis
- ☁ Cumulus congestus
- ☁ Cumulonimbus calvus
- ☁ Cumulonimbus
- ⚡ Light thunderstorms
- ⚡ Moderate thunderstorms
- ⚡ Heavy thunderstorms

Wind

- ▶ Reference height is either
 - MSL
 - GND
- ▶ In mountain regions no values are displayed if the forecast height is less than the reference height

Wind FL85 [kt]	295°/21	295°/21	295°/21	305°/22	325°/22	335°/23	340°/24	340°/24	340°/24	3
Wind 5.000ft MSL [kt]	285°/22	290°/22	295°/20	305°/22	320°/22	340°/22	345°/23	350°/24	345°/23	3
Wind 3.500ft GND [kt]	270°/22	285°/22	295°/21	300°/23	315°/23	340°/23	350°/22	350°/22	345°/21	3
Wind 1.500ft GND [kt]	245°/24	260°/25	285°/26	290°/25	310°/20	345°/21	0°/23	355°/19	345°/16	3

Base of data

- ▶ Regional numerical weather simulation model, processed at our weather computing centre
- ▶ Hourly forecasts
- ▶ High update frequency - four model runs per day