# EDUCE- flagging report for spectral data from Funchal, Portugal

Authors/evaluators: JE Williams, PN den Outer and H Slaper (RIVM) <u>FP25 : Flagging results for Funchal, Portugal:</u>

## Measurements details :

Location: Funchal, Portugal Elevation (m): 58 Instrument name: Brewer#048 Instrument type: Brewer MK II Wavelength range (nm): 290-325 Lat, Long: 32.644, 16.887 Date on which data was extracted: (1993, 1994, 1995, 1996), 18.01.02 (1997, 1998, 1999, 2000) Date on which slit function was extracted/received: 10.12.02 Years of submitted data: 9 complete No spectra (per year): 4328 (1993), 4573 (1994), 4395 (1995), 4435 (1996), 4587 (1997), 4684 (1998), 5110 (1999), 5083 (2000), 4676 (2001) No spectra (total submitted): 41871 Slit width (FWHM) (nm): 0.682 SHIC version for analysis: 3.093

**Special comments:** Full annual coverage of high quality data for 8 complete years. Non-critical flags are detected for the start irradience flag for approximately 30% of all spectra.

Responsible operator/PI: Diamantino.Henriques: Diamantino.henriques@meteo.pl

**Operator Comments:** No comments received from the operator.

## <u> 1993:</u>



	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%							
Shift1_flagging	99.2	0	0	0	0.8	0	3595	0	0	0	30	0	3625
start_irradiance_flag	72.4	25	2.5	0.1	0	0	2626	906	90	2	1	0	3625
Spike+local_shape	97	1.8	0.6	0.2	0	0.4	3530	64	23	7	1	13	3638

## **Comments :**

Full annual coverage (approximately 99%): excellent potential for use in climatological studies.

Overall data quality impression : a high fraction of potential high quality spectra.

A few black flags exist in some of the chosen flagging categories (with red flags < 2.5%). Approximately 25% of the irradience spectra have a yellow flag associated with the start irradience flag. The percentage grey flags less than 1% for the Shift1 flag.

The shift1 flag indicates that the instrument is well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

13 (0.4%) spectra with spikes are reported.

The distribution of errors is fairly non uniform throughout the dataset, with most red and black flags occurring before Julain Day 120.





	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%					-		
Shift1_flagging	99	0	0	0	1	0	3813	0	0	0	38	0	3851
start_irradiance_flag	81.4	18.1	0.5	0.1	0	0	3134	697	18	2	0	0	3851
Spike+local_shape	96.7	2.8	0.3	0	0	0.2	3730	108	12	1	0	6	3857

Full annual coverage (approximately 99%): excellent potential for use in climatological studies.

Overall data quality impression : a very high fraction of potential high quality spectra.

A few black flags exist in the start irradience flagging categories (with red flags < 0.5%). Approximately 20% of the irradience spectra have a yellow flag for the start irradience flag. The percentage grey flags is 1% for the Shift1 flag. The performance is slighly worse than the previous year.

The shift1 flag indicates that the instrument is well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

6 (0.2%) spectra with spikes are reported.

The distribution of errors is fairly uniform throughout the dataset, although there is a higher incidence of red and black flags during the summer period.



	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%					_		
Shift1_flagging	99.5	0	0	0	0.5	0	3661	0	0	0	19	0	3680
start_irradiance_flag	86.9	12.7	0.2	0.2	0	0	3198	466	8	8	0	0	3680
Spike+local_shape	97.8	1.6	0.2	0.1	0	0.3	3611	60	6	3	0	12	3692

Full annual coverage (approximately 100%): excellent potential for use in climatological studies.

Overall data quality impression : a very high fraction of potential high quality spectra.

A few black flags exist in some of the chosen flagging categories (with red flags < 0.5%). Approximately 10% of the irradience spectra have a yellow flag for the start irradience flag. The percentage grey flags is 0.5% for the Shift1 flag. The instrument performance is slighly better than the previous year.

The shift1 flag indicates that the instrument is well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

12 (0.3%) spectra with spikes are reported.

The distribution of errors is fairly uniform throughout the dataset, with very few red and black flags occurring throughout the entire dataset.





	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%					_		
Shift1_flagging	99.4	0	0	0	0.5	0	3685	0	0	1	20	0	3706
start_irradiance_flag	81.4	18.2	0.4	0.1	0	0	3016	674	14	2	0	0	3706
Spike+local_shape	98.2	1.5	0.2	0	0	0	3641	55	9	1	0	1	3707

Full annual coverage (approximately 97%): excellent potential for use in climatological studies.

Overall data quality impression : a high fraction of potential high quality spectra.

A few black flags exist in the start irradience flagging categories (with red flags < 2.5%). Approximately 20% of the irradience spectra have a yellow flag for the start irradience flag. The percentage grey flags is 3% for the Shift1 flag.

The shift1 flag indicates that the instrument is relatively well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

3(0.1%) spectra with spikes are reported.

The distribution of errors is fairly uniform throughout the dataset, although there is a higher incidence of red and black flags during the summer period.





	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%							
Shift1_flagging	97	0	0	0	3	0	3719	0	0	0	116	0	3835
start_irradiance_flag	76.7	21.8	1.3	0.2	0	0	2941	837	50	7	0	0	3835
Spike+local_shape	92.8	4.8	2.4	0	0	0.1	3560	183	92	0	0	3	3838

Full annual coverage (approximately 97%): excellent potential for use in climatological studies.

Overall data quality impression : a high fraction of potential high quality spectra.

A few black flags exist in the start irradience flagging categories (with red flags < 2.5%). Approximately 20% of the irradience spectra have a yellow flag for the start irradience flag. The percentage grey flags is 3% for the Shift1 flag.

The shift1 flag indicates that the instrument is relatively well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

3(0.1%) spectra with spikes are reported.

The distribution of errors is fairly uniform throughout the dataset, although there is a higher incidence of red and black flags during the summer period.





	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%					-		
Shift1_flagging	99.4	0	0	0	0.6	0	3922	0	0	0	22	0	3944
start_irradiance_flag	71.4	28	0.6	0	0	0	2817	1104	22	1	0	0	3944
Spike+local_shape	98.4	1.2	0.4	0	0	0	3879	49	16	0	0	0	3944

High annual coverage (approximately 90%): high potential for use in climatological studies.

Overall data quality impression : a very high fraction of potential high quality spectra.

One black flag occurs in the start irradience flagging category (with red flags < 0.6%). The percentage grey flags is less than 1% for the Shift1 flag. Approximately 30% of the irradience spectra have a yellow flag for the start irradience flag. The performance is better than the previous year.

The shift1 flag indicates that the instrument is well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

No spectra with spikes are reported.

The distribution of errors is fairly uniform throughout the dataset, with only a few grey, red and black flags occurring in the whole dataset.





	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%							
Shift1_flagging	99.5	0	0	0	0.5	0	4277	0	1	0	21	0	4299
start_irradiance_flag	69.7	29.5	0.8	0.1	0	0	2995	1267	33	4	0	0	4299
Spike+local_shape	97.1	2.6	0.2	0	0	0	4176	112	10	1	0	1	4300

Full annual coverage (approximately 99%): excellent potential for use in climatological studies.

Overall data quality impression: a very high fraction of potential high quality spectra.

A few black flags exist in some of the chosen flagging categories (with red flags < 1%). The percentage grey flags is equal 0.5% for the Shift1 flag. Approximately 30% of the irradience spectra have a yellow flag for the start irradience flag. No real change in the performance compared to the previous year.

The shift1 flag indicates that the instrument is well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

One (< 0.1%) spectrum with a spike is reported.

The distribution of errors is fairly uniform throughout the dataset, although most red and grey flags occur during the spring.





	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%					-		
Shift1_flagging	99.7	0	0	0	0.3	0	4302	0	0	0	15	0	4317
start_irradiance_flag	65.6	33.5	0.8	0	0	0	2834	1447	35	1	0	0	4317
Spike+local_shape	97.5	2.4	0.1	0	0	0	4208	104	5	0	0	0	4317

Extensive annual coverage (approximately 99%): excellent potential for use in climatological studies.

Overall data quality impression: a very high fraction of potential high quality spectra.

One black flag occurs for the start irradience flagging category (with red flags < 1.0%). Approximately 35% of the irradience spectra have a yellow flag for the start irradience flag. No real change in the performance compared to the previous year.

The shift1 flag indicates that the instrument is well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

No spectra with spikes are reported.

The distribution of errors is fairly uniform throughout the dataset, although most red flags occur in the first half of the dataset.





	Green	Yellow	Red	Black	Grey	Cor.	Green	Yellow	Red	Black	Grey	Cor.	Num
flag	%	%	%	%	%	%					-		
Shift1_flagging	99.6	0	0	0	0.4	0	3993	0	0	0	16	0	4009
start_irradiance_flag	60.6	37.8	1.5	0.1	0	0	2430	1517	59	3	0	0	4009
Spike+local_shape	97	2.9	0.1	0	0	0	3888	115	6	0	0	0	4009

High annual coverage (approximately 95%): high potential for use in climatological studies.

Overall data quality impression: a high fraction of potential high quality spectra.

A few black flags occur for the start irradience flagging category (with red flags < 1.5%). Approximately 35% of the irradience spectra have a yellow flag for the start irradience flag. No real change in the performance compared to the previous year.

The shift1 flag indicates that the instrument is well calibrated in the UVB region of the spectrum compared to an extra-terrestial solar spectrum.

No spectra with spikes are reported.

The distribution of errors is fairly uniform throughout the dataset, with a realtively high incidence of yellow flags.