



## 2010 Solar Radiation Summary

Latitude 25° 34' North, Longitude 80° 28' West, Elevation 2 (m)

Miami, Florida

Solar Radiation Summary												
Year	Total Solar Radiation (MJ/m <sup>2</sup> )						Ultraviolet Solar Radiation (MJ/m <sup>2</sup> )					
2010	Direct			Underglass			Direct			Underglass		
Month	5°	26°	45°	5°	26°	45°	5°	26°	45°	5°	26°	45°
January	392.6	492.5	519.7	340.2	415.8	440.1	20.34	22.63	21.89	14.00	14.67	14.73
February	429.4	498.9	504.0	364.2	423.9	426.4	22.75	24.63	22.93	15.89	16.04	16.09
March	569.3	600.0	576.9	482.8	514.3	481.7	30.55	31.53	28.52	20.77	20.83	19.75
April	600.5	574.8	520.5	512.8	497.4	429.8	34.13	32.75	29.09	22.66	22.41	19.49
May	626.0	551.8	476.6	532.3	480.7	388.7	37.01	34.08	29.20	23.63	23.07	19.28
June	619.1	532.5	447.4	533.2	469.2	364.2	37.50	33.58	28.36	22.63	22.80	18.55
July	577.4	510.2	436.7	495.7	442.6	356.4	35.96	32.50	27.63	20.87	21.76	18.04
August	543.7	510.9	454.2	468.2	440.6	375.6	29.04	31.57	27.83	19.37	21.32	18.27
September	479.2	493.1	460.4	410.8	417.6	383.5	25.94	28.91	26.42	17.39	19.47	17.30
October	493.8	569.7	564.9	422.3	475.8	475.8	26.46	29.69	28.83	17.44	20.07	18.71
November	417.3	529.8	550.8	353.2	438.8	467.7	22.09	25.14	25.82	13.55	17.54	17.03
December	449.3	620.9	669.9	370.3	504.0	577.6	21.74	25.78	27.37	13.42	17.53	17.40
Totals	6197.6	6485.1	6181.9	5285.9	5520.8	5167.4	343.51	352.79	323.89	221.62	237.51	214.64

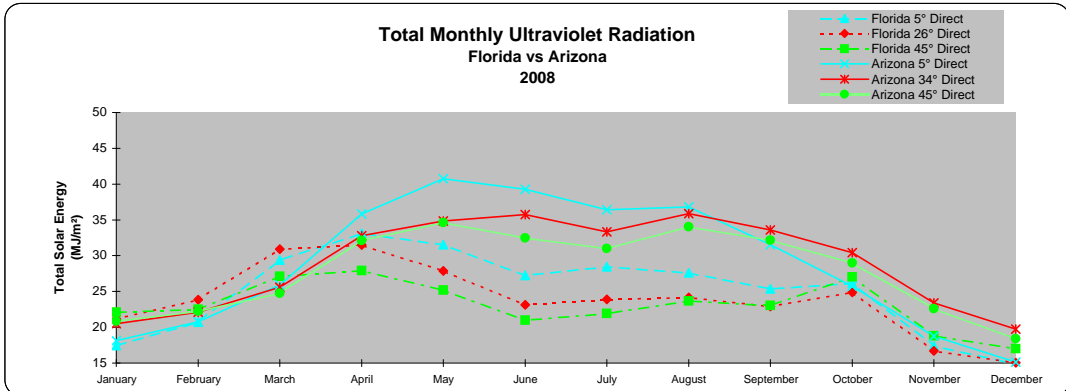
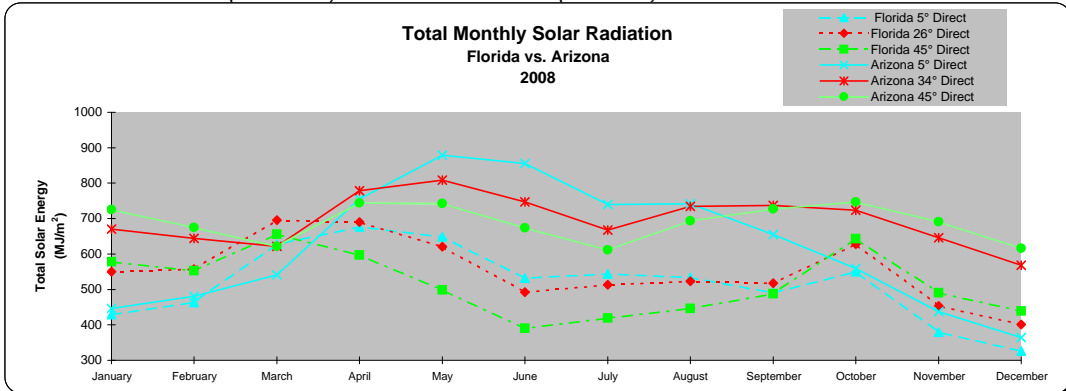
Note: Total Solar Radiation - (295-2500 nm) Ultraviolet Solar Radiation - (295-385 nm)

Latitude 33° 54' North, Longitude 112° 08' West, Elevation 610 (m)

Phoenix, Arizona

Solar Radiation Summary														
Year	Total Solar Radiation (MJ/m <sup>2</sup> )						Ultraviolet Solar Radiation (MJ/m <sup>2</sup> )						EMMAQUA™ (MJ/m <sup>2</sup> )	
2008	Direct			Underglass			Direct			Underglass			Total	UV
Month	5°	34°	45°	5°	34°	45°	5°	34°	45°	5°	34°	45°		
January	368.3	555.5	585.1	289.1	470.0	522.0	15.89	19.57	19.42	11.05	13.18	12.85	1898	41.70
February	411.9	539.8	548.6	337.1	458.0	487.5	18.82	21.80	21.25	13.17	14.47	13.77	2195	55.19
March	643.2	753.8	740.2	542.0	643.0	655.0	30.34	32.85	31.51	20.57	21.58	20.14	3905	109.32
April	765.6	785.5	737.2	654.4	669.2	644.6	36.83	37.25	34.40	24.72	23.92	21.89	4397	131.66
May	907.4	826.2	739.8	782.4	702.5	639.9	44.59	42.00	37.25	29.30	26.45	23.50	5515	168.36
June	879.6	752.7	666.6	755.8	646.1	567.3	43.87	39.99	35.05	28.01	24.84	21.04	5172	152.51
July	766.5	678.4	612.6	656.8	585.8	525.0	40.19	36.94	32.45	25.22	23.01	18.27	2685	77.11
August	739.8	715.1	669.8	627.2	618.6	577.8	38.79	38.07	33.75	24.42	23.94	19.78	3988	111.87
September	692.4	767.3	756.4	575.2	662.4	653.5	34.37	36.79	33.23	21.49	23.40	19.65	4820	123.48
October	527.9	670.5	686.9	427.8	573.1	599.6	26.36	29.56	27.13	16.62	19.23	17.31	3457	80.38
November	438.7	649.6	691.5	340.0	550.9	601.5	20.01	24.05	22.73	12.81	15.94	14.81	3278	68.92
December	311.3	462.0	498.5	240.1	393.5	434.8	14.66	17.28	16.28	9.46	11.57	10.82	1283	25.96
Totals	7452.5	8156.3	7933.4	6227.9	6973.1	6908.5	364.72	376.15	344.45	236.84	241.53	213.83	42594	1146.5

Note: Total Solar Radiation - (295-2500 nm) Ultraviolet Solar Radiation - (295-385 nm)





# 2010 Weather Summary

## Miami, Florida

Latitude 25° 34' North, Longitude 80° 28' West, Elevation 2 (m)

AWSG		Temperature Summary										Climate Summary								
Year	Ambient Temperature			Black Metal Panel Temperature (ASTM G179) (° C)									Relative Humidity			Wind Speed		Wind Direction	Rainfall	
2010	(° C)			5 °			26 °			45 °			%			(Km / hr)		360°/0°=N	(mm)	
Month	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Avg.	Avg.		
January	22	10	16	41	8	18	45	8	19	45	9	19	92	50	73	28	8.1	218°	29	
February	23	10	17	44	8	19	47	7	20	46	8	19	96	47	75	29	8.3	196°	126	
March	24	12	18	47	9	21	49	8	21	47	9	21	97	46	74	30	9.3	201°	60	
April	28	18	23	51	15	26	51	14	26	48	15	26	90	50	73	30	9.4	120°	117	
May	32	22	27	58	20	30	57	19	30	53	19	29	90	52	75	28	8.3	127°	68	
June	35	24	29	60	22	33	59	21	32	57	21	32	94	51	77	29	7.5	123°	146	
July	34	24	28	60	22	32	59	21	32	55	22	31	96	53	79	29	7.6	113°	115	
August	34	24	28	61	21	31	61	21	31	58	21	30	99	56	84	28	5.8	126°	323	
September	32	24	27	56	21	30	57	21	31	54	20	30	98	59	83	28	7.2	88°	291	
October	31	21	25	54	19	28	58	18	29	56	18	29	96	52	78	25	6.9	71°	31	
November	28	16	21	48	13	24	53	13	25	52	12	25	98	51	78	25	6.5	124°	71	
December	22	8	15	41	6	18	47	6	19	46	6	19	91	46	70	27	7.8	198°	26	
<b>Average</b>	<b>29</b>	<b>18</b>	<b>23</b>	<b>52</b>	<b>15</b>	<b>26</b>	<b>54</b>	<b>15</b>	<b>26</b>	<b>51</b>	<b>15</b>	<b>26</b>	<b>95</b>	<b>51</b>	<b>77</b>	<b>28</b>	<b>8</b>	<b>142°</b>		
<b>Total</b>																				<b>1403</b>

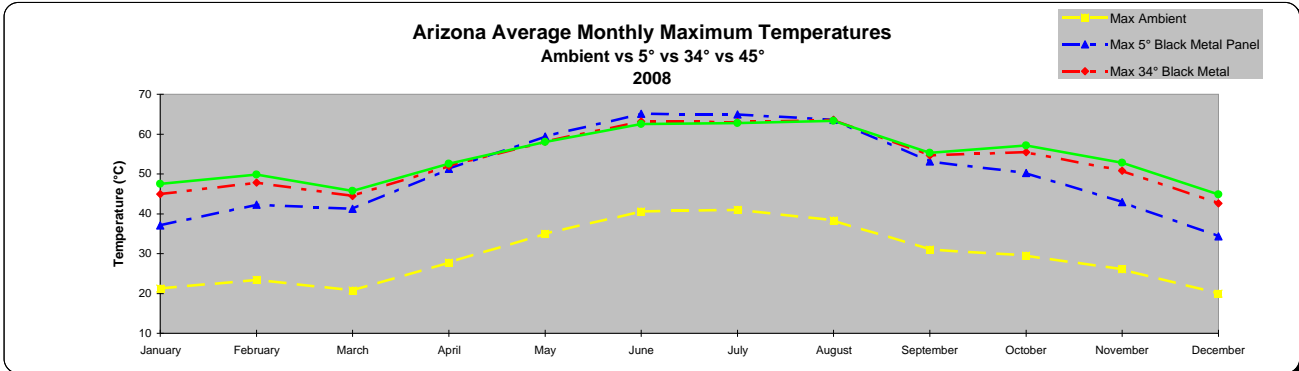
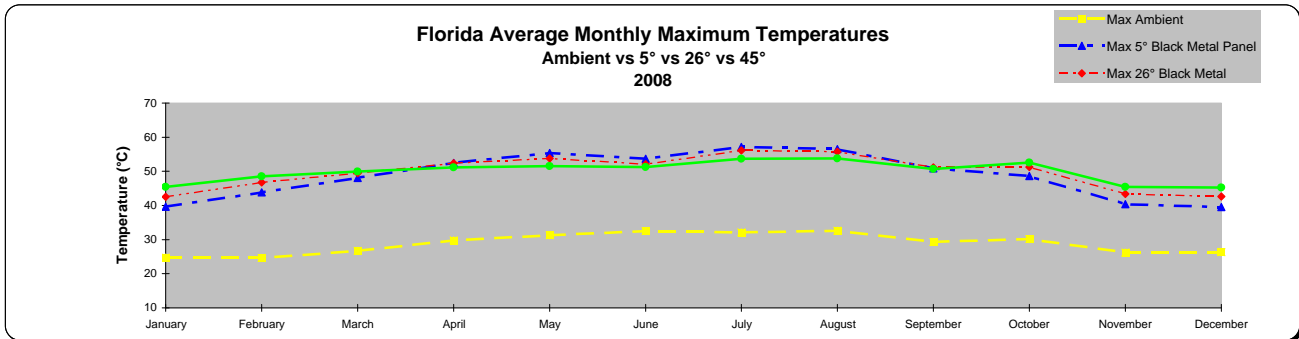
NOTE: All values are expressed as an average over each month period.

## Phoenix, Arizona

Latitude 33° 54' North, Longitude 112° 08' West, Elevation 610 (m)

AWSG		Temperature Summary										Climate Summary								
Year	Ambient Temperature			Black Metal Panel Temperature (ASTM G179) (° C)									Relative Humidity			Wind Speed		Wind Direction	Rainfall	
2008	(° C)			5 °			34 °			45 °			%			(Km / hr)		360°/0°=N	(mm)	
Month	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Min	Avg.	Max	Avg.	Avg.		
January	19	8	13	35	7	14	43	7	16	44	7	17	57	27	44	33	12.0	57°	152	
February	19	8	13	39	6	15	46	7	16	47	7	17	74	33	54	29	10.1	68°	49	
March	21	8	14	44	6	18	48	7	19	49	7	20	67	27	46	31	10.3	90°	36	
April	26	11	19	51	9	23	52	9	24	52	9	24	44	15	27	34	10.7	126°	0	
May	31	16	23	55	13	29	54	13	28	54	13	28	59	10	18	36	10.6	135°	0	
June	38	22	30	64	19	36	62	20	35	61	20	35	63	9	17	32	9.1	149°	0	
July	40	26	33	65	24	38	63	25	38	63	25	38	70	22	31	35	9.8	151°	31	
August	38	25	32	62	23	36	63	24	37	62	24	37	59	23	38	32	9.8	170°	28	
September	39	24	31	62	21	35	65	22	36	65	22	36	33	14	23	29	9.9	80°	0	
October	30	18	23	50	16	26	55	16	27	56	16	28	56	25	40	30	10.3	94°	28	
November	23	10	16	40	7	17	47	8	19	49	8	20	42	18	29	33	11.6	64°	4	
December	21	9	14	35	7	15	43	8	17	45	8	17	58	27	44	29	9.8	72°	74	
<b>Average</b>	<b>29</b>	<b>15</b>	<b>22</b>	<b>50</b>	<b>13</b>	<b>25</b>	<b>53</b>	<b>14</b>	<b>26</b>	<b>54</b>	<b>14</b>	<b>26</b>	<b>57</b>	<b>21</b>	<b>34</b>	<b>32</b>	<b>10</b>	<b>105°</b>		
<b>Total</b>																				<b>402</b>

NOTE: All values are expressed as an average over each month period.





**ATLAS**  
WEATHERING SERVICES GROUP

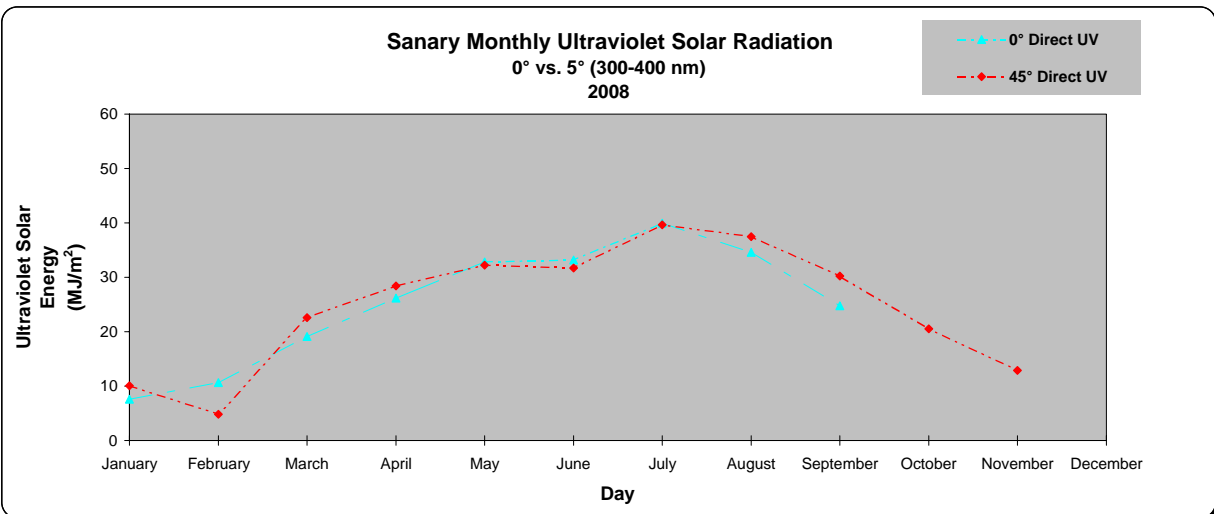
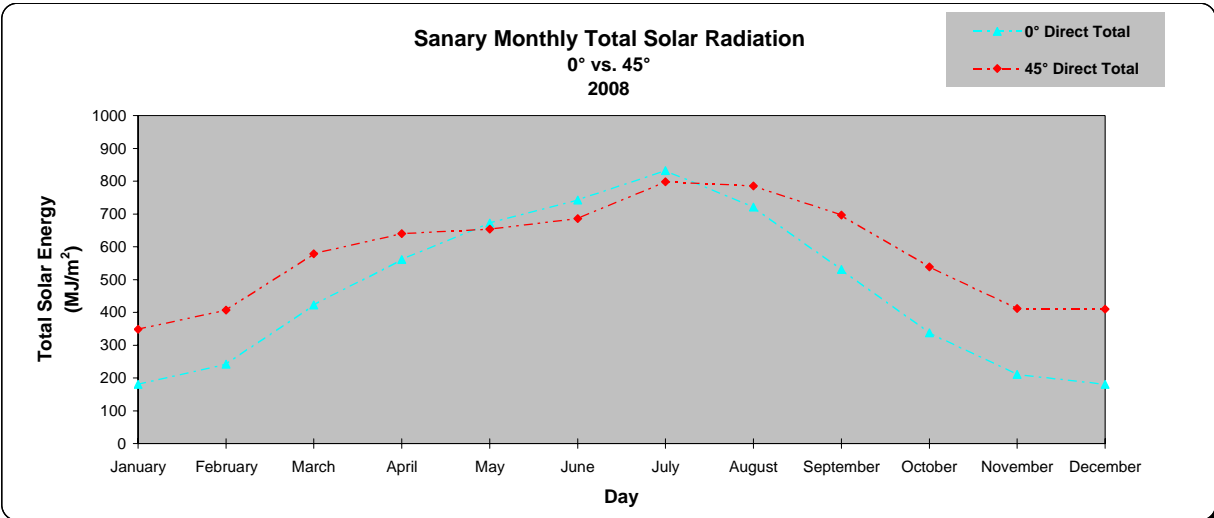
**2010 Solar Radiation Summary**  
**Sanary sur Mer, France**

Latitude 43° 08' North, Longitude 05° 49' East, Elevation 110 (m)

Solar Radiation Summary						
Year	Total Solar Radiation (MJ/m <sup>2</sup> )		Ultraviolet Solar Radiation (MJ/m <sup>2</sup> )			
2010	Direct		295-385 nm		300-400 nm	
Month	0°	45°	0°	45°	0°	45°
January	180.1	348.1	6.0	8.42	7.62	10.07
February	242.4	407.1	8.3	4.06	10.64	4.85
March	422.0	578.2	15.0	18.92	19.11	22.62
April	561.1	640.3	20.5	23.77	26.18	28.41
May	671.7	653.9	25.7	26.99	32.82	32.26
June	742.3	685.7	26.0	26.55	33.19	31.74
July	832.3	797.7	31.3	33.17	39.91	39.65
August	721.2	785.2	27.1	31.33	34.59	37.45
September	531.1	697.1	16.0	20.65	24.79	30.22
October	337.3	538.8	12.1	17.15	15.43	20.51
November	210.4	411.9	7.3	10.71	9.27	12.91
December	180.4	410.0	6.4	9.03	8.03	11.29
<b>Totals</b>	<b>5632.3</b>	<b>6954.0</b>	<b>201.85</b>	<b>230.73</b>	<b>261.58</b>	<b>281.96</b>

Note: Total Solar Radiation - (295-3000 nm) Ultraviolet Solar Radiation - (295-385 nm) or (300-400 nm).

\*Note: Data Based On 5 year averages.





## 2010 Solar Radiation Summary

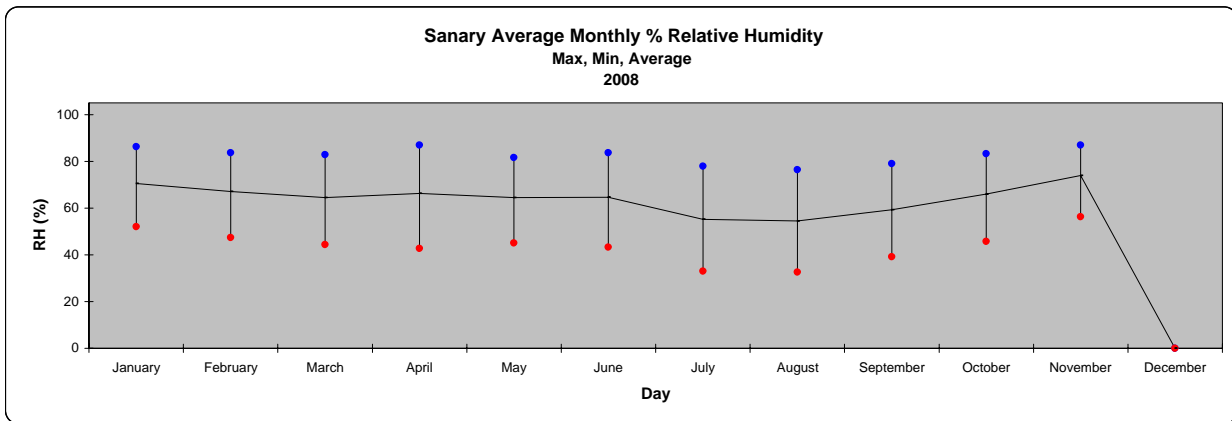
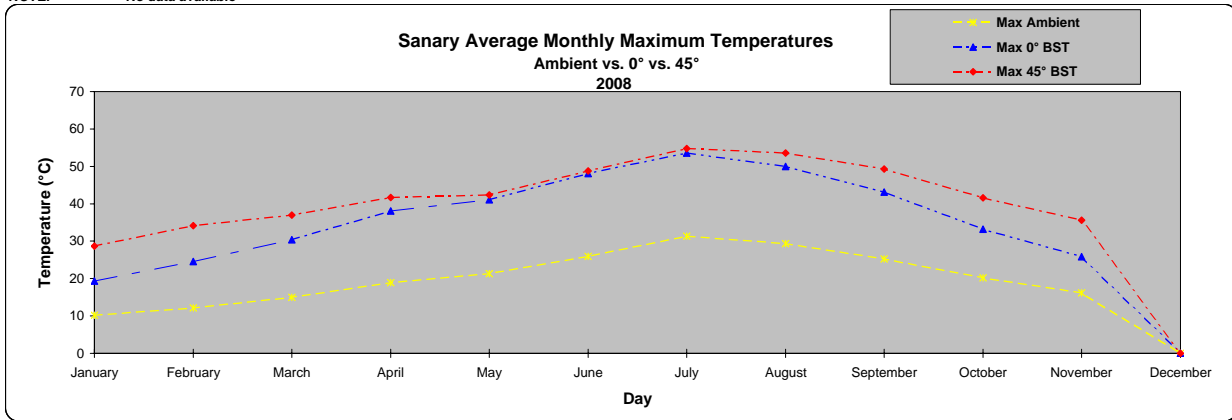
Latitude 43° 08' North, Longitude 05° 49' East, Elevation 110 (m)

## Sanary sur Mer, France

Year	Temperature Summary																		Climate Summary										
	Ambient Temperature			Black Standard Temperature (°C) BST						Black Panel Temperature (°C) BPT						Black Metal Panel Temperature (ASTM G179) (°C)			Relative Humidity			Wind Speed		Wind Direction	Rainfall				
	Max	Min	Avg.	0°		45°		0°		45°		0°		45°		Max	Min	Avg.	Max	Avg.	Avg.	Max	Avg.	Avg.	360°/0°=N	(mm)			
2010																													
January	10	3	6	19	0	7	29	0	8	18	0	6	26	0	8	20	0	6	29	0	8	86	52	71	25	4.6	138	164.3	
February	12	4	8	25	2	9	34	2	10	22	2	9	31	2	10	25	2	9	35	2	10	84	47	67	28	5.6	171	63.8	
March	15	6	10	30	4	13	37	4	14	28	4	12	33	3	13	31	3	12	38	4	14	83	44	64	26	5.7	204	31.8	
April	19	9	14	38	7	18	42	7	18	34	7	17	37	7	17	39	7	17	42	7	18	87	43	66	20	3.6	208	9.7	
May	21	12	16	41	9	21	42	9	21	38	9	20	38	9	19	42	9	20	43	9	21	82	45	64	23	4.5	205	20.3	
June	26	16	21	48	14	26	49	14	26	44	14	25	44	12	25	49	14	26	49	14	26	84	43	65	22	4.3	219	4.8	
July	31	20	25	54	18	31	55	17	31	50	17	30	50	18	30	54	17	31	55	18	31	78	33	55	20	3.7	221	0.0	
August	29	18	24	50	16	29	54	16	29	46	16	27	50	16	29	51	16	28	54	16	29	76	33	55	22	4.0	243	7.1	
September	25	15	20	43	13	23	49	12	25	40	12	22	46	8	24	44	12	23	50	13	25	79	39	59	20	3.7	240	41.9	
October	20	12	16	33	10	17	42	9	19	31	9	17	39	9	18	34	9	17	42	10	19	83	46	66	26	5.7	152	123.7	
November	16	9	12	26	7	13	36	7	15	24	7	13	35	2	15	27	6	13	37	7	15	87	56	74	20	3.7	175	106.9	
December	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.0
Average	21	11	16	37	9	19	42	9	20	34	9	18	39	8	19	38	9	18	43	9	20	83	44	64	23	4	198		
Total																								574.3					

NOTE: All values are expressed as an average over each month period.

NOTE: \*No data available





# ATLAS

## WEATHERING SERVICES GROUP

North Sea Corrosion Test Centre

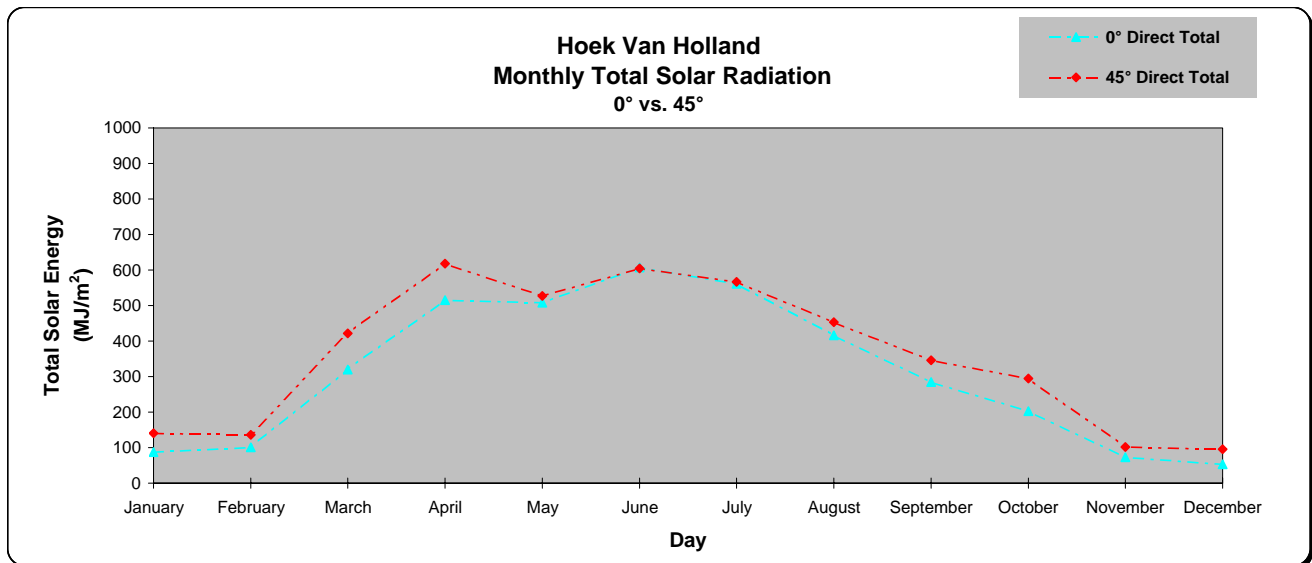
### 2010 Solar Radiation Summary

#### Hoek van Holland, The Netherlands

Latitude 51° 57' North, Longitude 04° 10' East Elevation 6 (m)

AWSG		Solar Radiation Summary	
Year	Total Solar Radiation (MJ/m2)		
2010	Direct		
Month	0°	45°	
January	87.0	141.0	
February	101.2	136.5	
March	320.3	421.5	
April	515.0	618.4	
May	508.5	526.6	
June	606.8	604.6	
July	561.3	567.1	
August	416.2	452.7	
September	284.9	345.9	
October	202.8	294.5	
November	73.1	101.9	
December	53.1	95.6	
Totals	3730.2	4306.3	

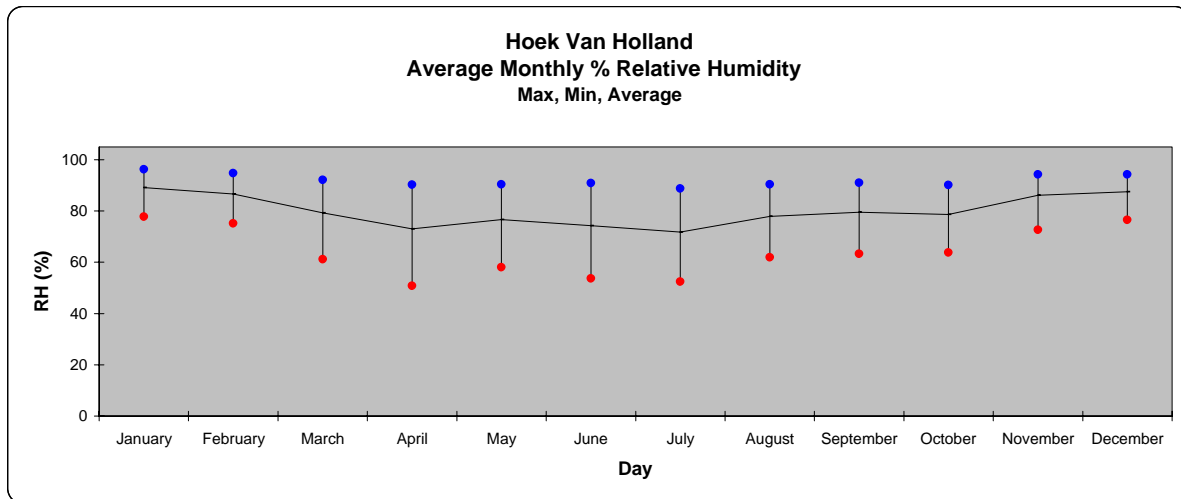
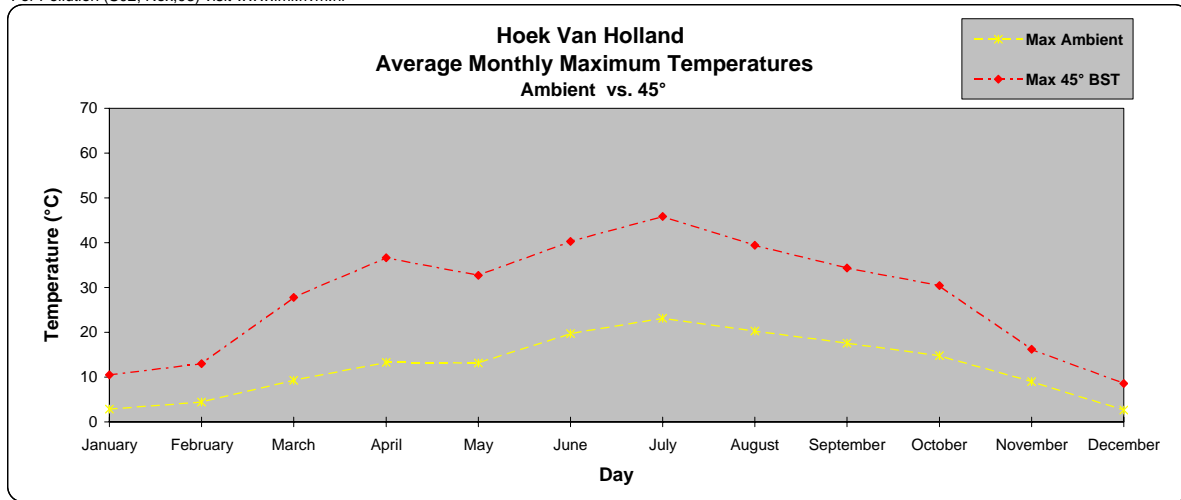
Note: Total Solar Radiation - (295-3000 nm)



AWSG	Temperature Summary						Climate Summary						
	Ambient Temperature			Black Standard Temperature BST (°C)			Relative Humidity			Wind Speed		Wind Direction	Rainfall
	2010			45 °			%			M/s		360°/0°=N	(mm)
	Month	Max	Min	Avg.	Max	Min	AVG	Max	Min	Avg.	Max	Avg.	Avg
January	3	-2	1	10	-5	0	96	78	89	8	2.9	130	18.0
February	4	0	2	13	-3	2	95	75	87	10	3.5	126	60.0
March	9	4	6	28	0	8	92	61	79	11	3.9	172	7.8
April	13	6	9	37	2	13	90	51	73	9	3.4	181	21.4
May	13	7	10	33	3	13	90	58	77	9	3.4	150	28.4
June	20	12	16	40	8	20	91	54	74	9	3.1	192	25.6
July	23	16	19	46	13	23	89	52	72	9	3.0	248	68.0
August	20	15	18	39	13	20	90	62	78	11	4.2	233	138.6
September	18	12	15	34	9	16	91	63	80	10	3.5	167	70.6
October	15	9	12	30	6	13	90	64	79	10	3.9	160	78.6
November	9	5	7	16	1	6	94	73	86	11	3.8	165	94.6
December	3	-2	0	9	-5	-1	94	76	88	9	3.3	155	40.4
<b>Average</b>	<b>13</b>	<b>7</b>	<b>10</b>	<b>28</b>	<b>4</b>	<b>11</b>	<b>92</b>	<b>64</b>	<b>80</b>	<b>10</b>	<b>3.5</b>	<b>184</b>	
<b>Total</b>													<b>652.0</b>

NOTE: All values are expressed as an average over each month period.

For Pollution (SO2, Nox,03) visit [www.lml.rivm.nl](http://www.lml.rivm.nl)

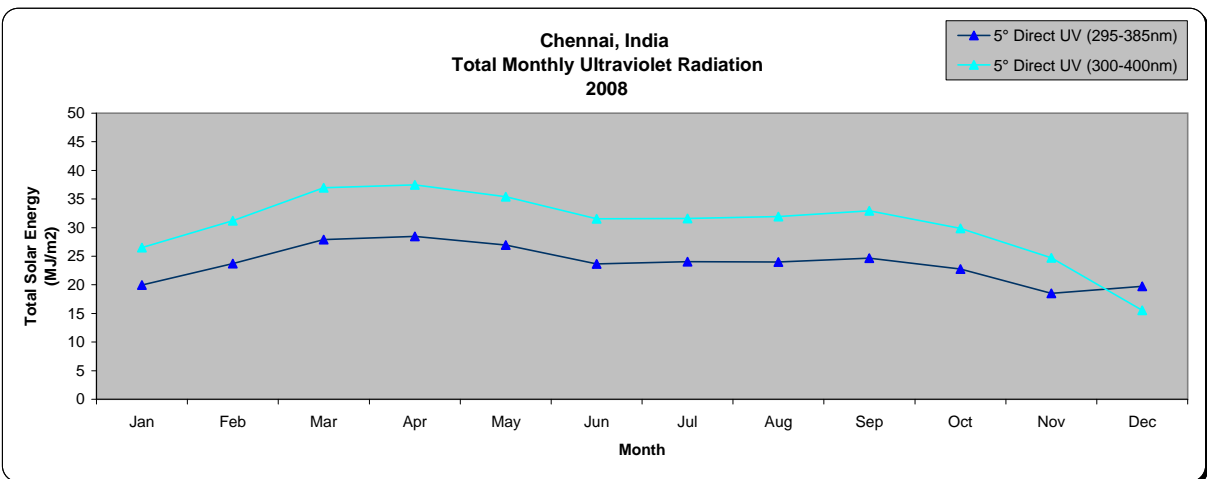
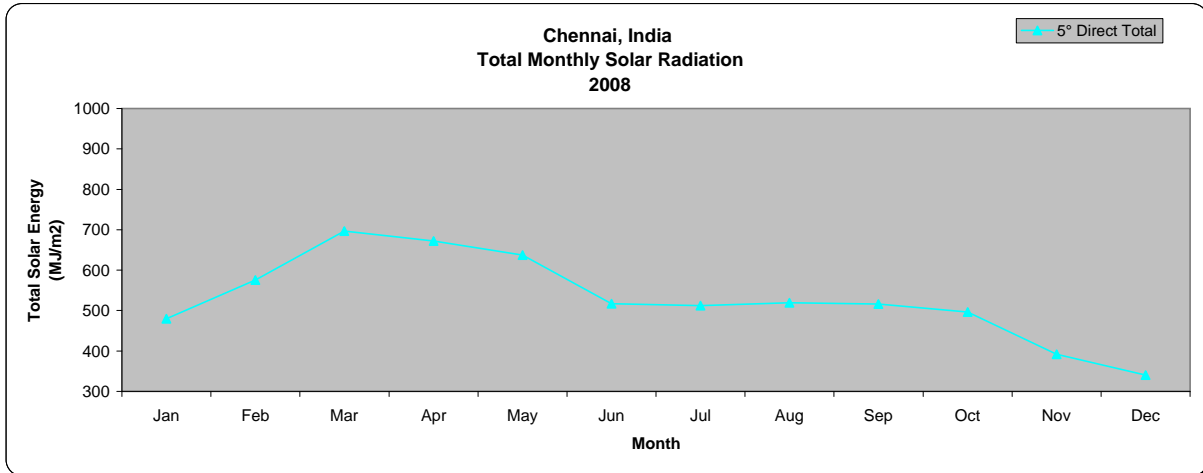


## 2010 Solar Radiation Summary Chennai, India

Latitude 12° 35' North, Longitude 79° 48' East Elevation 45 (m)

Solar Radiation Summary				
Year	Total Solar Radiation (MJ/m <sup>2</sup> )	Ultraviolet Solar Radiation (MJ/m <sup>2</sup> )		
2010		Direct		
		295-3000 nm	295-385 nm	300-400 nm
		5°		
Month		5°		
Jan	479.4	19.99	26.49	
Feb	575.4	23.69	31.19	
Mar	696.5	27.91	36.97	
Apr	671.9	28.45	37.46	
May	637.3	26.93	35.43	
Jun	517.2	23.67	31.52	
Jul	512.2	24.03	31.60	
Aug	519.3	23.98	31.93	
Sep	516.1	24.65	32.93	
Oct	496.7	22.78	29.87	
Nov	391.6	18.50	24.71	
Dec	340.6	19.74	15.54	
YTD	6354.3	284.3	365.6	

Note: Total Solar Radiation - (295-3000 nm) Ultraviolet Solar Radiation - (295-385 nm) or (300-400 nm).





# 2010 Weather Summary

Latitude 12° 35' North, Longitude 79° 48' East Elevation 45 (m)

## Chennai, India

AWSG		Temperature Summary						Climate Summary					
Year	Ambient Temperature			Black Metal Panel Temperature (ASTM G179) (°C)			Relative Humidity			Wind Speed		Wind Direction	Rainfall
2010	° C			5 °			%			M/s		360°/0°=N	(mm)
Month	Max	Min	Avg.	Max	Min	Avg	Max	Min	Avg.	Max	Avg.	Avg	
Jan	30	20	24	53	19	27	96	49	79	5	0.9	100	19.3
Feb	32	20	25	58	18	30	96	41	77	5	0.8	103	0.3
Mar	35	22	28	62	20	33	96	35	74	6	0.9	125	0.0
Apr	38	26	31	65	25	36	93	36	69	6	1.1	150	0.0
May	38	27	32	61	25	36	90	36	67	9	1.3	178	82.8
Jun	36	26	30	56	24	34	90	43	69	7	1.2	210	153.9
Jul	34	25	29	55	23	32	90	45	68	8	1.2	221	71.1
Aug	34	25	29	56	24	32	92	48	74	7	1.1	244	296.9
Sep	33	25	28	58	23	32	95	51	78	6	0.9	199	235.2
Oct	33	24	28	57	23	32	97	54	81	5	0.9	236	322.3
Nov	30	24	26	54	22	29	98	62	87	5	0.9	211	191.0
Dec	28	22	25	48	20	26	97	62	84	6	1.1	286	292.9
YTD	34	24	28	58	22	32	91	44	72	6	1.0	185	
Total													1665.7

NOTE: All values are expressed as an average over each month period.

