



Allunga Exposure Laboratory

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Monthly Weather Data 2011

2011	Temperature (°C) Averages		Dew Point		Relative Humidity (%)		Rain	Evap	Wet Time	Sun Shine	Global Radiation (MJ/m ²)		
	Max	Min	9am	9pm	9am	9pm	mm	mm	Hours	Hours	Horiz	19°N	UV-R Horiz
January	31.8	25.2	20.9	22.7	73	79	218.0	259.2	332.5	269.7	756.5	702.7	38.49
February	30.8	24.4	22.2	23.4	74	78	505.5	176.8	266.0	226.1	639.5	596.0	32.15
March	31.6	22.8	23.3	23.5	68	74	462.5	243.0	247.0	234.3	569.3	581.5	30.52
April	29.9	21.4	18.9	19.8	65	77	33.0	232.0	246.0	243.0	576.5	609.7	31.14
May	27.0	18.1	15.0	16.7	67	77	3.0	223.2	194.5	239.1	526.2	575.8	28.61
June	26.4	15.6	13.9	15.5	63	76	7.5	163.4	228.1	251.3	476.1	555.9	25.21
July	26.1	16.4	16.4	16.9	74	79	16.4	148.8	285.0	227.5	465.6	533.4	25.13
August	26.2	15.0	13.8	15.4	61	73	9.1	193.6	289.0	282.7	610.4	671.7	32.12
September	27.8	20.0	17.5	17.8	68	76	41.7	228.5	188.7	261.5	604.2	630.9	32.91
October	29.0	21.1	18.4	19.0	63	77	27.5	251.0	226.2	289.8	695.1	697.3	34.26
November	30.3	23.6	19.8	20.6	64	75	94.6	267.2	171.5	310.2	707.3	682.2	35.99
December	31.1	24.1	20.6	21.6	65	75	135.0	280.4	205.2	307.9	717.2	681.6	37.52
Average	29.0	20.6	18.4	19.4	67	76		222.3	240.0	261.9	612.0	626.6	32.00
Total							1553.8	2667.1	2879.7	3143.1	7344.0	7518.7	384.05

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency



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January

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					Horiz	19°N	Horiz	
1	33	26	23	25	68	82	3.0	8.4	10.3	8.6	27.3	25.2	1.38	Fine, Lt Cloud
2	31	25	22	24	90	79	2.0	7.0	9.8	4.0	17.3	16.4	0.88	Fine, Cloud
3	34	25	21	23	90	84	39.0	6.4	10.7	4.7	17.1	16.1	0.85	Lt Cloud, Shower
4	32	27	22	23	68	80	10.0	8.0	9.1	9.6	29.5	27.0	1.52	Fine, Shower
5	32	25	20	23	66	78	0.0	10.4	8.9	11.5	34.1	32.0	1.75	Fine
6	33	26	19	21	65	70	0.0	9.6	6.3	11.2	29.2	27.1	1.51	Fine
7	33	25	22	24	81	87	3.0	9.4	10.3	10.4	27.8	26.7	1.45	Fine, O/N Shower
8	33	24	22	24	75	90	19.0	9.0	8.8	11.6	27.5	25.9	1.39	Shower, Fine
9	32	24	23	23	62	87	21.0	8.8	9.9	10.6	27.1	24.9	1.42	Shower, Fine
10	33	26	24	25	67	78	9.0	7.6	10.6	8.7	18.4	17.2	0.93	Fine, Cloud, Shower
11	33	27	23	23	70	71	8.0	9.6	7.2	11.8	26.9	24.6	1.29	Fine, O/N Shower
12	34	27	21	24	63	75	12.0	5.4	9.3	2.1	12.8	12.2	0.64	Fine, Cloud, Shower
13	34	27	19	22	61	75	12.0	11.2	10.4	12.1	29.1	26.7	1.44	Fine, O/N Shower
14	35	27	21	24	77	88	0.0	8.8	8.7	6.6	19.2	17.6	0.95	Fine, O/N Shower
15	32	26	22	23	65	77	8.0	9.4	3.6	10.1	28.3	26.2	1.47	Fine, Lt Cloud
16	33	25	21	20	86	73	0.0	11.4	14.5	11.3	30.5	28.1	1.56	Fine
17	32	26	20	23	69	72	3.0	9.2	12.2	7.6	18.7	17.3	0.93	Cloud, Fine
18	32	27	18	20	73	65	0.0	6.6	8.2	8.8	20.9	19.1	1.06	Cloud, fine
19	32	26	24	25	70	75	19.0	7.6	6.4	9.0	22.3	20.7	1.15	Cloud, Fine, Shower
20	32	27	21	24	71	72	12.0	8.2	0.0	8.5	22.0	20.3	1.12	Cloud, Fine, Shower
21	28	24	22	24	90	87	9.0	7.2	13.2	4.3	21.9	20.4	1.10	Lt Cloud, Shower
22	30	23	23	23	91	97	11.0	0.0	22.6	2.4	8.9	8.8	0.45	Cloud, Rian
23	27	23	22	23	94	77	0.0	8.8	21.2	9.7	29.0	26.9	1.43	Fine
24	33	24	21	20	66	80	0.0	10.0	21.6	10.1	28.6	26.5	1.48	Fine
25	33	25	18	23	56	87	0.0	11.0	10.9	11.7	29.6	27.4	1.51	Fine
26	31	25	20	22	69	68	0.0	9.8	11.9	9.9	28.9	26.6	1.44	Fine
27	31	24	17	20	62	69	0.0	7.6	5.3	8.6	23.8	22.1	1.22	Fine, Lt Cloud
28	32	23	17	19	59	80	0.0	11.4	0.0	12.0	32.7	30.9	1.73	Fine
29	29	23	20	23	76	88	5.0	10.2	10.5	10.7	29.8	27.0	1.51	Fine, O/N Shower
30	27	24	20	22	78	71	3.0	7.0	17.1	8.5	22.9	21.4	1.24	Fine, Cloud, Shower
31	29	24	21	22	76	84	10.0	4.2	23.0	3.0	14.4	13.4	0.69	Lt Cloud, Shower
														###
Average	31.8	25.2	20.9	22.7	72.7	78.9		8.4	10.7	8.7	24.4	22.7	1.24	###
Total							218.0	259.2	332.5	269.7	756.5	702.7	38.49	###

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

18096
584

16809 **Total Langleys**
542 **Average Langleys**



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February

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					UV-R			
											Horiz	19°N	Horiz	
1	33	25	23	22	75	65	0.0	4.8	5.7	7.7	23.5	21.9	1.20	Fine, Cloud
2	32	27	21	24	59	78	18.5	0.0	8.7	5.2	13.1	12.4	0.71	Cyclone Yasi
3	29	23	23	23	88	89	192.0	0.0	16.5	2.2	13.5	13.1	0.56	Cyclone Yasi
4	30	23	23	24	81	79	24.5	6.2	12.6	6.5	20.4	18.4	0.94	Fine, Cloud, Rain
5	30	24	22	21	87	75	26.0	5.4	11.1	10.8	25.1	22.6	1.25	Fine, O/N Rain
6	30	26	23	24	79	74	21.0	4.6	9.4	8.2	19.3	16.9	0.88	Fine, Cloud, Rain
7	32	25	20	24	75	73	2.5	6.8	8.0	8.5	23.0	21.3	1.18	Fine, Cloud
8	31	25	21	23	69	72	4.5	8.4	6.5	11.0	28.9	27.0	1.62	Fine, O/N Rain
9	31	24	21	24	76	80	0.0	9.4	4.8	12.3	30.9	28.5	1.57	Fine
10	31	23	22	23	80	75	23.0	8.0	7.3	7.9	23.7	22.1	1.16	Fine, Cloud, Rain
11	30	23	23	23	75	77	37.0	7.8	10.0	11.6	27.3	25.1	1.38	Fine, O/N Rain
12	30	23	21	24	63	83	6.0	9.0	10.9	10.9	33.2	31.7	1.73	Fine
13	30	25	20	23	73	81	2.0	6.4	6.0	9.3	27.5	25.8	1.40	Fine
14	31	24	22	23	69	81	7.0	6.2	9.7	11.2	26.4	24.3	1.33	Fine
15	32	23	19	22	66	72	3.5	4.6	6.8	5.4	17.6	16.7	0.85	Fine, Cloud
16	30	23	24	24	82	77	32.0	5.8	11.2	9.4	23.0	21.7	1.14	Fine, Cloud, Rain
17	31	24	23	23	69	71	49.5	7.0	12.5	10.4	26.3	24.8	1.35	Fine, Cloud, Rain
18	31	25	22	24	64	78	0.0	9.6	10.7	11.5	31.2	29.0	1.62	Fine
19	31	26	24	25	66	78	0.0	8.0	6.9	8.2	25.8	24.3	1.36	Fine, O/N Rain
20	32	25	23	22	73	74	15.5	7.4	12.8	10.4	25.9	23.8	1.30	Fine, Lt Cloud
21	32	26	24	23	75	76	0.0	7.8	9.0	8.3	20.7	19.2	1.01	Fine, Cloud
22	32	27	24	25	67	73	0.0	5.6	8.8	6.3	20.4	19.1	0.97	Fine, Cloud, O/N Rain
23	31	24	23	23	75	85	14.0	6.2	10.4	5.4	19.5	18.3	0.94	Fine, Cloud, Rain
24	31	24	22	23	61	70	16.0	5.8	12.5	5.6	18.0	17.1	0.89	Fine, Cloud, Rain
25	29	24	24	25	87	93	2.0	6.0	7.6	3.2	17.7	16.2	0.83	Cloud, Shower
26	31	24	22	24	81	77	9.0	7.2	10.2	5.9	17.6	16.4	0.85	Cloud, Shower
27	31	25	19	22	71	69	0.0	8.8	10.1	9.1	25.5	24.3	1.41	Fine
28	28	24	23	24	96	98	0.0	4.0	9.3	3.7	14.6	14.0	0.72	Cloud, Shower
Average	30.8	24.4	22.2	23.4	74.4	77.6		6.3	9.5	8.1	22.8	21.3	1.1	
Total							505.5	176.8	266.0	226.1	639.5	596.0	32.15	

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

15298

14256 **Total Langleys**

546

509 **Average Langleys**



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March

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks		
	Max	Min	9am	9pm	9am	9pm					UV-R		Horiz		19°N	Horiz
											Horiz	19°N				
1	32	23	23	23	71	80	34.0	6.2	11.6	5.7	14.1	14.1	0.74	Fine, Cloud, Rain		
2	32	23	23	24	62	75	4.5	6.0	7.5	6.6	17.0	17.1	0.88	Fine, Cloud		
3	32	22	25	24	64	72	0.0	10.4	6.4	10.9	25.2	25.3	1.33	Fine, Lt Cloud		
4	31	23	25	25	72	84	0.0	9.2	7.0	10.5	25.4	25.4	1.35	Fine, Lt Cloud		
5	31	24	25		67	78	0.0	8.8	6.6	8.8	22.6	22.8	1.16	Fine, Lt Cloud		
6	33	23	24	24	66	76	0.0	7.6	9.8	7.4	18.9	19.0	0.99	Fine, Cloud, O/N Rain		
7	32	22	24	23	90	83	105.0	3.4	13.0	2.4	7.6	7.7	0.40	Cloud, Rain		
8	32	22	20	21	62	70	32.5	8.6	9.5	8.1	21.9	22.2	1.14	Rian, Fine		
9	31	23	22	23	70	77	0.0	10.6	7.3	11.2	25.6	25.9	1.39	Fine, Lt Cloud		
10	32	24	23	24	70	80	8.0	9.2	10.3	9.7	20.3	20.6	1.06	Fine, Cloud, O/N Rain		
11	32	25	22	22	67	72	10.5	5.6	8.0	3.1	6.9	7.0	0.37	Cloud, Showers		
12	31	24	23	23	75	82	41.5	4.8	12.3	4.3	11.0	11.2	0.60	Cloud, Rain		
13	31	24	21	23	68	69	9.0	6.0	8.3	5.0	11.1	11.3	0.61	Cloud, Showers		
14	32	23	22	24	62	78	4.0	4.6	6.7	3.3	5.9	6.1	0.31	Cloud, Showers		
15	32	22	23	25	66	75	57.5	3.8	12.2	4.6	5.2	5.4	0.25	Fine, Cloud, Rain		
16	32	21	24	24	77	72	63.0	11.6	13.8	9.6	22.8	23.4	1.27	Fine, Lt Cloud, O/N Rain		
17	32	22	25	24	57	69	3.5	11.8	4.0	8.9	24.2	24.6	1.31	Fine, Lt Cloud		
18	31	22	24	24	87	72	0.0	10.6	7.8	10.0	23.7	24.0	1.25	Fine, Lt Cloud		
19	30	22	25	25	60	77	6.0	9.2	7.0	10.8	25.9	26.7	1.41	Fine, O/N Shower		
20	31	22	24	23	60	71	10.0	10.8	9.1	9.5	25.5	26.1	1.40	Fine, Shower		
21	32	23	24	23	76	74	1.0	11.0	8.0	11.2	26.4	27.0	1.43	Fine		
22	32	21	24	25	59	65	0.0	9.4	5.4	9.7	23.2	24.0	1.26	Fine		
23	32	21	26	24	64	70	7.5	8.8	6.2	10.1	25.1	25.9	1.33	Fine, O/N Shower		
24	32	22	25	25	66	62	0.0	8.6	0.0	8.0	21.1	22.0	1.18	Fine, Lt Cloud		
25	31	24	23	25	77	81	25.0	7.2	10.7	6.8	17.7	18.3	0.95	Fine, Cloud, Rain		
26	32	23	22	22	56	72	0.0	6.0	3.7	4.9	16.7	16.8	0.88	Cloud		
27	31	24	19	21	55	66	0.0	5.2	0.0	6.4	16.6	17.0	0.86	Fine, Cloud		
28	32	25	22	23	63	74	2.5	5.0	7.9	3.4	9.5	10.0	0.52	Cloud, Showers		
29	31	21	23	23	74	74	13.0	4.2	9.3	3.7	8.4	8.8	0.42	Cloud, Showers		
30	31	24	23	24	64	71	11.5	8.4	8.2	8.8	19.5	20.3	1.10	Fine, Lt Cloud, Shower		
31	31	22	23	23	75	73	13.0	10.4	9.4	10.9	24.3	25.5	1.37	Fine, Shower		
Average	31.6	22.8	23.3	23.5	68	74		7.8	8.0	7.6	18.4	18.8	0.98			
Total							462.5	243.0	247.0	234.3	569.3	581.5	30.52			

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

13618

13909 **Total Langleys**

439

449 **Average Langleys**



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April

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					UV-R			
											Horiz	19°N	Horiz	
1	32	20	21	22	68	85	10.0	5.2	9.8	3.5	9.6	10.0	0.52	Cloud, Rain
2	31	22	22	21	63	70	1.5	4.4	8.4	4.1	8.5	8.6	0.44	Cloud, Shower
3	31	22	20	21	63	71	3.0	4.8	10.3	2.8	8.5	8.6	0.42	Cloud, Shower
4	30	22	20	19	64	72	11.0	5.6	11.4	6.0	12.8	13.1	0.70	Fine, Cloud, Rain
5	29	25	18	17	64	87	0.0	5.0	4.8	5.3	13.4	14.1	0.75	Fine, Cloud
6	30	23	18	18	68	70	0.0	8.8	8.9	8.6	23.0	24.3	1.26	Fine
7	31	20	18	17	61	75	0.0	9.0	8.4	8.8	22.0	23.6	1.25	Fine
8	32	22	18	18	58	72	3.0	6.2	8.2	6.1	15.5	16.6	0.84	Fine, Cloud, shower
9	31	21	18	20	54	73	4.5	8.2	9.9	10.4	24.4	25.7	1.34	Fine, O/N Shower
10	31	21	19	20	61	74	0.0	8.8	5.4	10.3	24.1	25.7	1.32	Fine
11	30	21	19	20	59	77	0.0	5.4	8.5	7.0	14.7	15.5	0.79	Fine, Cloud
12	28	22	21	21	74	73	0.0	10.2	8.6	11.5	26.0	27.3	1.42	Fine
13	30	22	21	21	57	67	0.0	9.0	9.1	9.6	23.1	24.1	1.26	Fine
14	25	23	20	21	66	92	0.0	8.0	7.0	8.3	19.1	19.9	1.00	Fine, Lt Cloud
15	31	20	20	20	66	68	0.0	10.4	5.0	10.1	25.5	27.5	1.43	Fine
16	30	21	19	19	61	82	0.0	8.6	8.3	8.9	21.9	23.2	1.16	Fine, Lt Cloud
17	30	21	19	21	62	79	0.0	8.8	7.5	9.0	21.9	23.2	1.24	Fine, Lt Cloud
18	31	21	20	21	64	66	0.0	6.6	8.2	7.0	17.9	19.0	0.99	Fine, Cloud
19	30	19	17	22	64	79	0.0	5.8	9.9	8.5	19.6	21.1	1.10	Fine, Lt Cloud
20	31	20	20	22	64	68	0.0	8.4	8.1	10.4	23.5	25.0	1.26	Fine
21	30	18	21	21	68	76	0.0	7.8	4.9	6.8	14.3	15.5	0.78	Fine, Cloud
22	30	19	21	21	69	82	0.0	10.8	10.4	10.2	24.8	26.9	1.34	Fine
23	31	18	21	21	61	80	0.0	10.4	9.0	10.9	23.9	25.7	1.35	Fine
24	30	19	20	20	62	86	0.0	9.8	9.8	10.7	22.3	23.8	1.14	Fine
25	31	20	16	19	69	79	0.0	8.2	7.7	9.0	21.7	22.9	1.09	Fine, Lt Cloud
26	28	25	17	20	74	79	0.0	5.8	11.2	5.4	13.8	14.3	0.67	Fine, Cloud
27	28	25	17	18	55	79	0.0	3.6	3.8	4.6	12.0	12.4	0.61	Cloud
28	28	22	17	18	75	75	0.0	9.2	9.6	9.7	22.5	23.8	1.16	Fine
29	30	23	14	17	73	82	0.0	10.2	6.5	10.2	23.8	25.2	1.38	Fine
30	27	24	14	17	77	86	0.0	9.0	7.4	9.3	22.4	23.5	1.13	Fine
Average	29.9	21.4	18.9	19.8	65	77		7.7	8.2	8.1	19.2	20.3	1.04	
Total							33.0	232.0	246.0	243.0	576.5	609.7	31.14	

For Langleys divide MJ/m² by 0.0418 UV-R = UV-A + UV-B (290-385 nm)
Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

13789 14584 **Total Langleys**
460 486 **Average Langleys**



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May

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					Horiz	19°N	Horiz	
1	28	23	17	19	66	75	0.0	7.8	7.4	9.5	23.2	23.4	1.18	Fine, Lt Cloud
2	27	22	20	20	89	82	0.0	10.2	9.1	10.3	23.6	23.6	1.15	Fine
3	30	23	19	20	73	77	0.0	4.6	5.0	7.2	16.5	16.8	0.88	Fine, Cloud
4	28	23	21	18	75	82	0.0	5.4	6.6	6.9	19.3	19.5	1.02	Fine, Lt Cloud
5	27	20	18	16	79	78	0.0	6.4	5.6	5.2	17.7	19.4	0.99	Fine, Cloud
6	27	20	17	17	69	84	0.0	7.6	7.1	8.5	19.3	21.8	1.10	Fine, Lt Cloud
7	27	20	18	20	72	83	0.0	5.8	8.3	4.8	12.4	14.0	0.66	Cloud, Fine
8	28	21	20	20	76	89	0.0	2.4	6.8	2.3	7.9	8.3	0.39	Fog, Cloud
9	28	19	19	16	75	85	0.0	4.8	5.9	8.9	17.7	20.1	0.98	Fine, Lt Cloud
10	26	18	11	16	76	87	0.0	8.0	5.5	10.4	21.5	23.0	1.14	Fine
11	27	17	15	18	81	85	0.0	9.8	10.2	11.0	21.7	23.3	1.19	Fine
12	25	14	15	16	75	81	0.0	9.4	9.9	10.0	19.9	22.7	1.14	Fine
13	27	16	5	11	34	63	0.0	10.6	0.0	10.5	19.6	22.4	1.10	Fine
14	27	17	9	12	43	70	0.0	10.0	0.0	9.9	18.7	21.3	1.04	Fine
15	27	17	8	12	45	68	0.0	9.2	0.0	10.6	18.8	21.6	1.10	Fine, Lt Cloud
16	28	18	14	17	77	76	0.0	3.0	6.4	3.8	8.7	9.2	0.41	Fine, Cloud
17	29	18	15	16	72	82	0.0	4.8	16.5	10.8	18.3	20.6	1.05	Fine, Lt Cloud
18	28	19	14	15	76	87	0.0	7.8	3.4	9.9	18.1	20.6	1.01	Fine, Lt Cloud
19	29	20	15	17	89	84	0.0	5.6	4.2	5.1	10.7	11.6	0.55	Cloud, Fine
20	28	19	16	17	66	80	0.0	6.0	5.7	3.7	9.3	10.8	0.51	Fine, Cloud
21	27	19	18	17	71	77	0.0	7.6	7.2	5.0	12.5	13.7	0.66	Fine, Cloud
22	26	20	18	20	67	75	0.0	5.8	7.4	2.2	7.4	8.5	0.41	Cloud, ON Shower
23	27	19	20	21	67	78	3.0	6.6	6.4	4.6	11.3	13.0	0.62	Cloud, Fine
24	26	19	17	19	59	72	0.0	4.0	5.3	6.0	16.9	18.3	0.89	Fine, Cloud
25	24	13	14	16	73	70	0.0	7.2	8.7	8.9	19.0	21.9	1.08	Fine, Lt Cloud
26	25	13	7	15	43	71	0.0	9.4	3.9	10.3	20.4	22.5	1.15	Fine
27	27	14	13	16	55	70	0.0	10.0	5.4	9.9	21.9	22.3	1.13	Fine
28	26	15	8	14	52	68	0.0	10.2	3.6	9.6	20.4	22.0	1.10	Fine, Lt Cloud
29	26	16	14	16	74	76	0.0	7.0	8.0	6.9	14.7	16.9	0.79	Fine, Cloud
30	25	15	16	15	60	74	0.0	8.4	7.7	8.4	19.3	21.1	1.09	Fine, Lt Cloud
31	26	14	14	16	53	65	0.0	7.8	7.3	8.0	19.4	21.4	1.10	Fine, Lt Cloud
Average	27.0	18.1	15.0	16.7	67	77		7.2	6.3	7.7	17.0	18.6	0.92	
Total							3.0	223.2	194.5	239.1	526.2	575.8	28.61	

For Langleys divide MJ/m² by 0.0418
 Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

UV-R = UV-A + UV-B (290-385 nm)

12588 13772 **Total Langleys**
 406 444 **Average Langleys**



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June

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					UV-R			
											Horiz	19°N	Horiz	
1	28	19	20	20	86	87	4.0	4.6	8.8	7.6	15.0	16.8	0.75	Fine, Shower
2	27	19	21	18	87	91	0.5	4.6	10.3	7.4	12.2	13.8	0.67	Fine, Mist
3	28	18	21	20	94	90	0.0	3.6	8.2	8.5	17.8	20.5	0.98	Fine, Mist
4	27	17	19	20	76	85	0.0	4.0	10.9	9.2	11.8	13.8	0.69	Fine
5	27	21	20	20	88	87	2.5	5.4	12.5	4.0	10.4	11.3	0.51	Clous, Shower
6	26	20	13	15	47	71	0.5	3.2	9.2	10.3	18.4	21.9	0.94	Fine
7	27	12	8	9	45	58	0.0	6.0	4.2	10.3	19.3	23.0	1.04	Fine
8	26	11	2	7	29	50	0.0	7.0	0.0	10.7	19.5	23.4	1.10	Fine
9	26	10	7	14	43	73	0.0	6.6	0.0	10.6	19.1	22.9	1.03	Fine
10	27	14	14	17	65	84	0.0	5.4	12.2	10.3	15.6	18.6	0.84	Fine
11	26	15	17	17	76	89	0.0	4.0	13.0	10.0	17.3	20.5	0.88	Fine
12	28	14	18	18	84	87	0.0	4.0	13.8	9.0	17.2	20.2	0.91	Fine, Lt Cloud
13	27	15	5	14	30	67	0.0	5.4	13.9	10.9	18.5	22.4	1.03	Fine
14	24	12	4	11	34	62	0.0	6.6	10.6	10.4	18.9	22.6	1.05	Fine
15	26	11	11	12	55	67	0.0	6.0	10.3	7.2	13.5	15.4	0.75	Fine, Cloud
16	27	19	16	14	52	61	0.0	8.0	9.9	4.0	9.7	10.5	0.45	Cloud
17	27	18	15	15	63	74	0.0	6.8	9.3	6.1	12.5	14.0	0.60	Cloud, Fine
18	27	17	17	17	64	80	0.0	5.6	8.6	10.3	15.1	18.1	0.84	Fine, Lt Cloud
19	26	17	16	16	77	84	0.0	4.8	4.6	10.5	17.7	21.2	0.91	Fine
20	28	12	16	16	78	75	0.0	4.8	11.3	10.5	18.1	21.8	0.98	Fine, Lt Cloud
21	26	13	16	16	76	79	0.0	5.0	11.3	10.3	18.1	21.7	0.94	Fine, Lt Cloud
22	25	12	15	14	75	77	0.0	4.6	13.2	10.4	19.0	22.7	1.03	Fine, Lt Cloud
23	26	11	12	17	54	81	0.0	6.2	6.7	10.4	18.9	22.7	1.05	Fine
24	26	18	15	14	65	61	0.0	3.4	0.0	1.3	9.8	10.2	0.47	Overcast
25	25	20	12	16	50	77	0.0	6.2	0.0	9.2	18.2	21.4	0.98	Fine, Lt Cloud
26	26	14	13	17	66	76	0.0	7.8	6.1	3.2	12.6	12.9	0.53	Cloud, Fine
27	26	17	13	15	57	72	0.0	4.4	3.2	9.7	17.7	21.0	0.94	Fine, Lt Cloud
28	26	18	13	14	59	68	0.0	6.8	0.0	9.5	18.2	21.5	0.98	Fine, Lt Cloud
29	25	17	12	15	56	72	0.0	7.2	0.0	0.9	9.0	9.3	0.42	Overcast
30	26	18	16	17	73	85	0.0	5.4	6.0	8.6	17.0	19.8	0.92	Cloud, Fine

Average	26.4	15.6	13.9	15.5	63	76		5.4	7.6	8.4		15.9	18.5	0.84	
Total							7.5	163.4	228.1	251.3		476.1	555.9	25.21	

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

11388	13297	Total Langleys
380	443	Average Langleys



Allunga Exposure Laboratory

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July

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					UV-R			
											Horiz	19°N	Horiz	
1	26	18	16	17	71	66	5.0	7.2	12.0	7.1	11.4	12.9	0.53	Cloud, Fine, O/N Shwr
2	26	14	14	16	66	78	0.0	5.6	5.6	10.5	18.6	22.3	0.92	Fine
3	26	15	14	17	66	83	0.0	4.8	10.6	10.6	15.8	19.0	0.81	Fine
4	25	14	17	17	73	76	0.0	5.4	12.4	10.4	16.7	20.0	0.88	Fine
5	26	16	16	15	70	66	0.0	4.8	0.0	5.5	12.4	13.7	0.64	Fine
6	27	15	15	18	72	85	0.0	7.4	10.1	10.1	16.9	20.1	0.97	Fine
7	27	19	18	18	81	77	0.3	4.4	6.8	2.6	12.6	13.4	0.57	Cloud, Fine, O/N Shwr
8	26	19	18	18	72	77	0.0	4.4	9.9	0.7	6.0	6.1	0.34	Cloud
9	24	18	18	18	78	88	0.3	4.4	8.8	0.0	3.9	4.0	0.21	Cloud, Shower
10	26	19	18	19	77	90	1.1	0.4	13.2	1.2	8.9	9.3	0.40	Cloud, Shower
11	28	20	16	18	75	91	4.1	2.8	16.7	8.8	17.0	19.8	0.83	Fine, Lt Cloud
12	25	17	13	16	65	86	0.0	5.2	12.2	10.9	19.3	23.1	1.12	Fine
13	25	12	14	15	73	80	0.0	4.8	13.1	10.0	19.0	22.4	1.08	Fine
14	25	14	15	15	75	83	0.0	4.2	12.8	10.8	18.4	22.0	1.16	Fine
15	25	13	16	16	75	83	0.0	4.6	12.1	10.6	18.9	22.5	1.13	Fine
16	26	12	18	18	83	87	0.0	4.8	11.7	10.4	18.3	21.6	1.06	Fine
17	27	12	18	19	83	82	0.0	3.2	12.2	10.0	17.8	21.0	1.01	Fine
18	26	18	15	18	66	79	0.0	7.0	4.7	7.7	18.2	20.7	1.02	Fine, Lt Cloud
19	26	18	13	15	61	66	0.0	5.6	0.0	2.3	10.3	10.8	0.63	Cloud
20	28	20	17	18	71	78	0.0	6.6	4.6	4.8	12.1	13.2	0.50	Broken Cloud Cover
21	25	20	16	15	72	71	0.0	5.6	0.0	3.2	9.5	9.6	0.43	Broken Cloud Cover
22	22	18	17	14	89	72	1.5	4.6	9.8	1.5	6.5	6.5	0.37	Overcast, Shower
23	27	17	18	17	80	80	3.5	0.4	12.7	5.8	12.2	13.4	0.72	O/N Shower, Fine
24	26	19	17	17	68	81	0.6	6.0	4.8	6.9	17.2	19.2	0.81	Fine
25	27	19	16	20	70	87	0.0	5.8	0.5	10.8	15.7	18.5	0.86	Fine
26	27	17	19	20	84	90	0.0	5.6	10.2	7.5	16.0	18.0	0.77	Fine
27	27	18	19	18	80	85	0.0	2.8	12.7	8.9	19.5	22.3	1.09	Fine
28	28	18	19	19	82	87	0.0	4.4	8.8	8.8	16.3	18.6	0.83	Fine
29	30	15	18	18	89	86	0.0	4.2	13.8	10.1	20.2	23.4	1.15	Fine
30	26	13	17	15	65	68	0.0	6.8	10.7	8.6	19.2	21.8	1.07	Fine
31	25	12	13	11	51	53	0.0	5.0	11.5	10.4	20.8	24.2	1.22	Fine
Average	26.1	16.4	16.4	16.9	74	79		4.8	9.2	7.3	15.0	17.2	0.81	
Total							16.4	148.8	285.0	227.5	465.6	533.4	25.13	

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

11137

12759 **Total Langleys**

359

412 **Average Langleys**



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August

DAILY WEATHER RECORD

2011

	Temperature (°C)				Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	Dew Point		9am	9pm					UV-R			
			9am	9pm							Horiz	19°N	Horiz	
1	26	9	13	13	62	74	0.0	7.2	9.9	10.8	21.2	24.3	1.25	Fine
2	26	11	16	16	73	78	0.0	3.6	8.8	10.4	20.1	22.8	1.11	Fine
3	27	14	9	16	46	74	0.0	5.0	11.6	9.5	20.5	23.0	1.19	Fine
4	27	18	5	16	36	78	7.8	5.2	10.6	6.4	14.3	15.4	0.75	O/N Rain, Fine
5	24	12	6	9	41	61	0.0	6.6	8.2	11.1	21.7	24.8	1.26	Fine
6	24	8	8	8	48	62	0.0	5.2	4.6	11.1	22.0	25.0	1.32	Fine
7	23	8	8	12	45	66	0.0	7.8	3.7	11.1	21.8	24.8	1.19	Fine
8	25	12	12	15	64	79	0.0	4.2	12.0	11.1	20.8	23.6	1.06	Fine
9	26	11	16	17	71	85	0.0	4.8	12.7	10.6	19.8	22.3	0.98	Fine
10	26	12	18	15	82	73	0.0	4.4	15.0	9.9	21.5	24.0	1.08	Fine
11	26	13	16	17	70	77	0.0	6.2	13.4	10.5	20.6	23.0	1.17	Fine
12	26	19	16	14	71	67	0.0	4.0	14.0	10.8	19.7	22.1	1.09	Fine
13	26	13	12	15	56	67	0.0	8.4	13.7	10.6	21.0	23.5	1.12	Fine
14	27	12	6	15	35	69	0.0	7.2	12.4	11.0	19.8	22.2	1.06	Fine
15	26	14	13	18	56	76	0.0	5.8	9.2	3.5	18.1	18.8	0.84	Scattered Cloud, Fine
16	26	15	17	16	73	75	0.0	6.6	9.8	10.7	22.0	24.5	1.06	Fine
17	27	13	17	15	76	67	0.0	4.8	11.1	10.8	21.2	23.5	0.99	Fine
18	26	17	14	14	58	68	0.0	7.4	6.7	11.0	22.2	24.7	1.03	Fine
19	27	13	11	13	51	59	0.0	8.0	0.0	9.5	19.4	21.2	0.94	Fine
20	28	20	12	15	50	60	0.0	9.4	0.0	7.9	20.9	22.5	1.01	Fine
21	27	17	15	13	61	61	0.0	7.8	0.0	8.5	20.3	22.0	0.95	Fine
22	26	16	13	16	58	76	0.0	9.6	2.7	10.8	23.0	25.4	1.12	Fine
23	27	19	13	16	57	74	0.0	6.8	10.0	8.9	15.6	16.9	0.83	Lt Cloud, Fine
24	26	19	16	16	67	78	0.0	7.8	10.9	4.7	15.7	16.3	0.84	Scattered Cloud, Fine
25	27	19	16	17	63	77	0.0	6.8	0.5	6.6	14.4	15.2	0.82	Scattered Cloud, Fine
26	26	16	16	16	67	74	0.0	5.4	12.2	9.2	22.5	24.3	1.22	Fine
27	27	18	15	17	62	78	0.0	5.4	8.7	9.9	22.2	24.0	1.19	Fine
28	26	16	18	18	67	88	0.1	6.8	11.4	7.0	14.9	15.8	0.77	Scattered Cloud, Fine
29	27	20	20	19	87	85	0.8	4.6	17.0	7.1	16.7	17.7	0.91	Scattered Cloud, Fine
30	26	21	20	20	79	86	0.0	5.6	15.0	5.3	15.9	16.5	0.88	Scattered Cloud, Fine
31	27	21	20	19	72	79	0.4	5.2	13.2	6.4	20.6	21.6	1.09	O/N Shower, Fine
Average	26.2	15.0	13.8	15.4	61	73		6.2	9.3	9.1	19.7	21.7	1.04	
Total							9.1	193.6	289.0	282.7	610.4	671.7	32.12	

For Langleys divide MJ/m² by 0.0418 UV-R = UV-A + UV-B (290-385 nm)
Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

14601 16067 **Total Langleys**
471 518 **Average Langleys**



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September

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					UV-R			
											Horiz	19°N	Horiz	
1	27	22	20	20	81	79	0.0	4.8	6.8	3.0	13.8	14.1	0.74	INTERMIT CLOUD
2	29	22	20	20	76	86	10.5	5.0	9.5	9.8	17.0	18.3	1.01	O/N RAIN FINE
3	28	20	19	19	77	82	0.2	7.2	14.5	6.1	15.6	16.2	0.85	MIST FINE
4	26	19	14	18	57	77	0.0	6.2	6.9	7.3	21.0	22.1	1.12	FINE
5	27	20	16	18	63	77	0.0	10.2	0.2	8.9	21.7	23.0	1.22	FINE
6	27	20	17	17	67	73	0.0	7.0	8.6	10.5	20.9	22.4	1.16	FINE
7	26	21	18	19	72	80	0.0	7.8	8.3	1.6	18.1	18.3	0.97	LT CLOUD
8	27	21	17	16	69	71	0.0	6.2	2.0	7.9	14.8	15.6	0.83	FINE
9	26	18	16	16	64	71	0.0	7.6	9.0	10.6	20.1	21.4	1.08	FINE
10	27	16	16	17	58	75	0.0	6.2	9.4	10.3	21.9	23.2	1.21	FINE
11	27	21	16	18	61	76	0.0	8.0	0.2	10.2	21.5	22.8	1.14	FINE
12	27	21	18	15	77	64	1.5	9.8	5.8	9.5	21.2	22.3	1.16	FINE
13	27	20	17	17	73	72	0.0	8.0	0.0	10.7	17.3	18.3	0.98	FINE
14	28	20	19	17	85	93	0.7	6.2	9.7	4.7	17.9	18.3	0.95	INT CLOUD RAIN
15	27	16	18	18	80	85	26.5	6.8	13.5	11.0	24.7	26.1	1.30	FINE
16	28	21	20	19	69	80	0.0	6.0	4.6	10.6	24.6	25.9	1.33	FINE
17	28	22	19	20	69	83	0.0	7.6	10.0	10.8	23.7	24.9	1.32	FINE
18	30	21	21	20	72	88	0.0	6.6	4.5	9.2	22.7	23.7	1.21	FINE
19	31	20	21	20	73	88	0.0	5.0	5.7	11.1	26.0	27.3	1.42	FINE
20	29	20	18	19	64	80	0.0	8.0	10.9	11.7	23.9	25.1	1.30	FINE
21	28	20	18	18	63	80	0.0	5.6	12.5	10.2	24.6	25.7	1.33	FINE
22	28	17	19	18	69	70	0.0	6.2	13.0	9.7	20.3	21.1	1.13	FINE
23	28	22	19	20	68	79	0.0	8.6	7.5	9.7	20.2	20.9	1.02	FINE
24	27	21	16	17	70	69	0.5	9.2	4.5	0.1	9.2	9.2	0.52	CLOUD
25	28	22	14	16	50	65	0.0	6.8	0.0	8.5	17.6	18.1	0.98	FINE
26	28	18	15	12	53	53	0.0	10.2	0.0	9.9	21.2	21.8	1.15	FINE
27	28	18	15	16	62	65	0.0	10.4	0.0	10.0	16.6	17.1	0.92	FINE
28	28	21	14	17	52	63	0.0	10.6	0.0	9.3	21.0	21.5	1.18	FINE INT DRIZ
29	28	19	16	18	70	67	1.7	10.8	10.4	8.8	19.8	20.3	1.07	FINE
30	30	20	18	20	64	87	0.1	9.9	0.7	9.8	25.3	25.9	1.31	FINE
Average	27.8	20.0	17.5	17.8	68	76		7.6	6.3	8.7	20.1	21.0	1.10	
Total							41.7	228.5	188.7	261.5	604.2	630.9	32.91	

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

14452 15091 **Total Langleys**
482 503 **Average Langleys**



Allunga Exposure Laboratory

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October

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					UV-R			
											Horiz	19°N	Horiz	
1	28	19	17	17	64	69	0.0	10.0	7.4	11.2	23.8	24.4	1.20	Fine
2	28	21	17	16	67	69	0.0	8.6	6.3	9.1	22.4	22.9	1.04	Fine
3	26	20	19	17	71	77	0.5	8.8	7.4	3.6	12.5	13.7	0.93	Cloud, Shower
4	29	19	16	17	56	73	1.0	7.0	9.0	8.2	22.4	22.7	0.98	O/N Shower, Fine
5	32	21	8	15	33	72	1.0	7.8	6.1	11.0	27.4	27.9	1.34	Fine
6	29	16	15	16	56	68	0.0	10.4	9.3	11.1	22.8	23.2	1.25	Fine
7	28	20	15	16	54	70	0.0	8.4	3.3	11.1	27.0	27.4	1.30	Fine
8	28	18	15	15	54	63	0.0	9.6	5.9	10.9	26.4	26.8	1.30	Fine
9	27	18	15	16	53	75	0.0	9.2	4.0	11.0	26.9	27.2	1.30	Fine
10	29	17	18	19	63	84	0.0	6.2	10.1	11.1	26.8	27.1	1.31	Fine
11	30	19	20	21	68	86	0.0	8.0	12.3	11.0	26.3	26.5	1.26	Fine
12	28	21	19	19	63	74	0.0	7.4	12.4	11.0	23.0	23.1	1.19	Fine
13	29	22	18	19	60	75	0.0	10.0	0.0	10.7	22.8	22.9	1.16	Fine
14	28	24	20	21	68	97	0.0	8.0	9.3	5.4	13.9	14.0	0.66	Scattered Cloud
15	28	21	20	19	75	76	0.0	8.2	13.7	5.7	17.1	17.1	0.65	Scattered Cloud
16	29	22	18	20	61	76	2.0	7.0	1.0	10.6	24.7	24.8	1.11	O/N Shower, Fine
17	29	19	19	20	64	78	0.0	8.0	6.8	10.4	25.2	25.2	1.26	Fine
18	31	21	19	21	64	84	0.0	7.4	6.2	11.0	26.3	26.3	1.32	Fine
19	30	21	19	21	61	80	0.0	6.2	12.6	9.8	24.3	24.2	1.21	Fine
20	30	23	20	20	63	76	0.0	7.6	11.9	10.3	23.9	23.8	1.19	Fine
21	27	21	21	21	78	90	5.5	9.6	2.2	4.2	13.3	13.3	0.70	Cloud, Shower, Fine
22	27	23	21	20	80	78	1.0	4.6	7.6	2.5	9.4	9.3	0.35	Overcast, Drizzle
23	29	22	19	18	65	68	10.5	5.8	11.3	11.4	26.0	25.8	1.29	Fine
24	28	22	19	19	65	71	0.0	9.0	8.6	11.7	26.3	26.0	1.31	Fine
25	29	22	18	19	54	74	0.0	8.4	8.1	11.5	26.4	26.0	1.31	Fine
26	31	19	20	21	72	78	0.0	7.2	8.8	8.6	23.4	23.1	1.16	Fine
27	30	23	21	20	71	72	5.5	8.0	13.2	7.6	19.4	19.2	0.96	O/N Shower, Fine
28	30	24	20	21	64	73	0.5	7.6	7.1	9.7	21.6	21.2	1.07	Fine
29	30	25	21	22	68	80	0.0	9.2	0.0	10.7	18.5	18.1	0.96	Fine, Smoke Haze
30	30	25	22	22	70	85	0.0	8.2	4.3	8.2	18.9	18.6	0.98	Fine, Smoke Haze
31	31	25	20	22	58	81	0.0	9.6	0.0	9.5	26.0	25.5	1.21	Fine
Average	29.0	21.1	18.4	19.0	63	77		8.1	7.3	9.3	22.4	22.5	1.11	
Total							27.5	251.0	226.2	289.8	695.1	697.3	34.26	

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

16627

16679 **Total Langleys**

536

538 **Average Langleys**



Allunga Exposure Laboratory

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November

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					UV-R			
											Horiz	19°N	Horiz	
1	29	24	23	19	88	70	0.0	7.6	9.3	8.5	23.6	23.2	1.19	Fine
2	29	22	17	19	56	70	0.0	12.0	6.9	11.6	19.9	19.4	1.02	Fine
3	30	23	19	20	61	77	0.0	9.4	0.0	10.9	25.2	24.6	1.24	Fine
4	30	23	17	19	53	74	0.0	9.4	0.0	11.9	26.6	25.9	1.30	Fine
5	30	22	19	21	56	78	0.0	8.6	9.9	11.3	25.2	24.5	1.22	Fine
6	30	23	20	21	65	76	0.0	7.6	6.8	12.0	25.5	24.7	1.27	Fine
7	30	25	19	20	58	75	0.0	9.4	8.8	11.9	27.2	26.3	1.38	Fine
8	30	24	21	21	63	74	0.0	11.0	0.0	9.8	25.7	25.1	1.33	Fine
9	32	25	21	21	63	76	0.0	9.4	0.0	10.4	20.9	20.2	1.05	Fine, Smoke Haze
10	32	24	21	21	66	76	0.0	7.8	2.7	11.5	25.4	24.5	1.31	Fine, Smoke Haze
11	30	25	20	20	60	69	0.0	8.0	0.0	9.4	24.3	23.6	1.25	Fine
12	31	24	19	21	57	72	0.0	10.6	2.0	9.5	21.6	20.9	1.07	Fine, Smoke Haze
13	29	22	22	21	95	77	27.3	8.6	8.2	5.0	14.3	14.1	0.78	Fine, Cloud, Rain
14	29	22	21	21	77	80	14.7	7.4	11.0	9.7	24.5	23.7	1.40	Fine, Lt Cloud, O/N Rain
15	30	23	21	22	64	82	0.0	7.2	5.4	11.1	25.1	24.2	1.25	Fine
16	30	24	19	19	59	69	0.0	8.0	6.2	11.3	23.1	22.2	1.24	Fine
17	30	24	21	21	67	72	1.5	9.2	8.6	8.1	22.0	21.3	1.15	Fine, Smoke Haze
18	30	25	22	22	68	79	2.0	7.8	10.6	11.4	23.0	22.1	1.12	Fine
19	31	25	23	22	68	80	0.2	10.6	10.4	10.8	24.7	23.7	1.20	Fine
20	32	25	22	23	65	82	0.0	7.2	4.0	12.3	26.9	25.7	1.37	Fine
21	32	25	23	24	64	85	0.0	9.4	4.5	10.8	26.5	25.4	1.32	Fine
22	32	25	22	22	64	76	0.0	8.8	6.4	10.3	25.8	24.8	1.29	Fine
23	33	26	23	23	64	78	0.0	7.6	7.2	10.0	23.6	22.7	1.17	Fine
24	28	23	23	23	87	95	40.5	10.0	11.1	2.5	10.7	10.7	0.63	Cloud, O/N Rain
25	29	23	20	23	69	94	8.2	3.6	11.1	7.9	15.8	15.3	0.85	Rain, Fine
26	30	23	10	19	56	64	0.2	6.8	4.4	12.3	25.8	24.5	1.37	Fine
27	30	22	15	17	49	60	0.0	11.6	0.0	11.5	25.2	24.0	1.33	Fine
28	30	21	17	18	57	65	0.0	10.6	5.7	12.2	26.7	25.3	1.35	Fine
29	30	22	16	17	51	58	0.0	10.8	6.9	12.1	25.0	23.7	1.22	Fine
30	31	23	17	19	53	66	0.0	11.2	3.4	12.2	27.5	25.9	1.32	Fine
Average	30.3	23.6	19.8	20.6	64	75		8.9	5.7	10.3	23.6	22.7	1.20	
Total							94.6	267.2	171.5	310.2	707.3	682.2	35.99	

For Langleys divide MJ/m² by 0.0418

UV-R = UV-A + UV-B (290-385 nm)

Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

16919 **Total Langleys**

564 **Average Langleys**



Allunga Exposure Laboratory

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December

DAILY WEATHER RECORD

2011

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm					UV-R			
											Horiz	19°N	Horiz	
1	30	23	15	18	47	61	0.0	11.2	0.0	12.1	27.4	26.0	1.38	Fine
2	30	22	17	20	52	69	0.0	12.6	0.0	11.9	27.3	25.9	1.40	Fine
3	29	23	18	18	58	65	0.0	10.0	7.8	12.3	25.3	23.9	1.31	Fine
4	30	23	20	20	65	73	0.0	10.6	5.0	12.1	25.2	23.8	1.26	Fine
5	30	24	22	23	73	81	0.0	7.8	11.8	12.4	25.8	24.3	1.36	Fine
6	31	25	23	23	73	81	9.5	9.0	11.0	10.7	24.7	23.5	1.27	O/N Shower, Fine
7	30	25	21	20	67	70	0.0	9.0	3.4	11.9	24.9	23.5	1.23	Fine
8	30	24	21	21	65	72	0.0	10.2	6.5	11.2	21.2	20.1	1.11	Fine
9	30	26	22	22	66	81	6.0	9.0	1.7	8.7	22.4	21.4	1.15	Fine, Shower
10	31	25	21	22	79	75	2.5	11.0	4.7	10.2	26.0	25.4	1.39	Fine, Shower
11	29	25	23	20	94	73	12.0	9.8	14.8	5.2	17.3	17.0	0.93	Cloud, Showers
12	30	23	19	20	64	67	21.0	6.4	12.9	8.9	21.4	20.4	1.15	Fine, O/N Rain
13	30	22	19	20	59	71	19.5	8.8	0.6	11.3	25.6	24.4	1.30	Fine, O/N Rain
14	29	22	22	19	86	71	8.5	9.8	9.3	5.8	20.7	19.6	1.08	Fine, Lt Cloud
15	29	21	19	18	61	66	0.0	5.8	13.8	11.0	24.0	22.5	1.24	Fine
16	31	22	18	20	55	69	0.0	8.0	4.8	12.2	26.5	24.9	1.39	Fine
17	30	21	19	20	61	67	0.0	9.2	4.5	9.1	21.1	20.1	1.13	Fine
18	30	25	21	21	66	74	0.0	9.4	7.9	4.7	14.4	14.1	0.67	Cloud, Fine
19	30	23	19	16	60	55	5.0	8.0	6.0	12.0	23.9	22.5	1.26	Fine
20	30	21	19	22	58	84	0.0	11.2	5.7	11.2	18.0	17.0	1.10	Fine
21	30	23	22	23	81	79	6.0	8.2	11.9	10.9	26.4	24.9	1.33	Fine
22	31	25	23	23	68	80	0.0	8.0	0.0	12.2	26.5	24.0	1.38	Fine
23	33	26	23	25	68	94	3.0	10.2	4.1	9.9	22.1	21.0	1.15	Fine, O/N Rain
24	34	25	25	25	75	85	10.5	8.2	12.6	12.0	25.8	24.3	1.35	Fine
25	34	25	26	26	73	87	0.0	7.2	10.6	12.7	27.3	25.6	1.40	Fine
26	34	27	25	26	72	84	0.0	9.6	4.1	11.8	24.6	23.2	1.30	Fine
27	36	25	24	26	62	85	0.0	7.4	9.7	6.5	23.1	22.4	1.25	Fine, Cloud
28	36	26	14	22	35	67	10.5	10.2	5.6	4.2	16.5	16.2	0.93	O/N Shower, Cloud
29	32	27	13	24	34	81	0.0	10.6	0.0	5.3	19.0	18.4	1.03	Cloud, Fine
30	32	25	24	24	78	77	15.5	4.4	11.1	8.0	19.4	18.6	1.04	O/N Rain, Fine
31	33	27	22	23	64	75	5.5	9.6	3.3	9.5	23.4	22.7	1.25	Fine, Lt Cloud
Average	31.1	24.1	20.6	21.6	65.1	74.8		9.0	6.6	9.9	23.1	22.0	1.21	
Total							135.0	280.4	205.2	307.9	717.2	681.6	37.52	

For Langleys divide MJ/m² by 0.0418
 Townsville UV data recorded by Australian Radiation Protection and Nuclear Safety Agency

UV-R = UV-A + UV-B (290-385 nm)

17155 16304 **Total Langleys**
 553 526 **Average Langleys**