



Allunga Exposure Laboratory

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2009 Summary

WEATHER SUMMARY - Monthly Data

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)		
	Max	Min	9am	9pm	9am	9pm					Horiz	19°N	Horiz
January	30.2	24.2	23.3	23.5	80.3	84.4	602.5	175.7	0.0	147.9	534.7	515.4	29.2
February	30.2	24.3	23.9	24.0	82.9	86.5	976.6	148.0	0.0	158.5	486.1	475.0	27.3
March	31.5	23.0	20.2	21.9	63.4	76.4	57.0	230.4	0.0	282.1	629.3	666.2	37.3
April	30.8	21.1	22.7	22.2	78.5	84.2	54.6	186.5	0.0	261.3	565.5	599.0	28.8
May	27.8	17.5	18.6	18.9	75.5	84.6	22.0	170.4	0.0	225.7	464.8	511.7	26.7
June	27.3	14.3	17.1	17.3	75.1	88.9	0.0	154.8	0.0	271.5	472.9	545.7	28.5
July	26.2	13.2	15.8	16.1	73.8	83.9	0.0	185.3	0.0	291.5	514.0	589.4	30.1
August	27.5	14.6	15.6	16.6	61.4	79.1	0.0	193.4	0.0	310.0	604.1	668.1	35.3
September	29.0	18.9	13.9	17.2	55.1	70.7	0.0	221.0	0.0	301.1	652.9	685.7	36.2
October	30.7	20.1	13.1	17.8	49.9	68.0	0.0	324.0	0.0	329.4	748.9	749.3	39.3
November	30.8	21.9	18.2	19.6	56.6	71.9	38.5	297.8	0.0	305.4	679.8	657.4	37.4
December	32.2	24.9	20.5	21.5	62.6	71.7	132.5	331.6	0.0	315.6	694.4	658.2	37.3
Average	29.5	19.8	18.6	19.7	68	79		218.2	0.0	266.7	587.3	610.1	32.77
Total							1883.7	2618.9	0.0	3200.0	7047.4	7321.1	393.29

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)

168575 175121 **Total Langleys**
14048 14593 **Average Langleys per month**



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January

DAILY WEATHER RECORD

2009

	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		9am	9pm					Horiz	19°N	Horiz	
1	32	25	24	25	77	87	7.0	6.4	0.0	4.8	17.5	17.0	1.02	Lt Cloud, Shower
2	31	25	23	25	73	82	8.0	4.8	0.0	2.3	15.8	15.6	0.94	Lt Cloud, Shower
3	31	25	24	25	90	80	1.0	4.8	0.0	4.8	16.8	16.4	0.98	Lt Cloud, O/N Shower
4	32	24	23	23	72	75	20.0	7.0	0.0	5.8	21.5	20.9	1.13	Lt Cloud, Shower
5	31	25	22	24	66	80	47.0	6.2	0.0	11.5	25.7	23.6	1.32	Fine, O/N Rain
6	32	25	23	24	68	80	0.0	8.0	0.0	6.5	21.5	20.8	1.15	Cloudy Humid
7	32	25	22	24	68	76	0.0	7.2	0.0	7.5	22.7	21.8	1.18	Fine, Lt Cloud
8	32	26	23	25	80	90	0.0	6.4	0.0	4.0	19.6	19.2	1.07	Fine, Cloudy
9	32	26	24	22	83	68	3.0	6.2	0.0	1.2	16.0	15.9	0.95	Fine, Cloudy
10	31	23	22	20	66	64	2.0	7.2	0.0	6.1	22.3	21.6	1.14	Fine, Cloudy
11	31	24	22	21	75	65	0.0	9.4	0.0	4.1	20.8	19.4	1.07	Fine, Cloudy
12	25	24	23	22	91	96	3.0	8.8	0.0	5.7	17.5	16.4	0.92	Thunderstorm, Fine
13	27	20	22	23	95	91	119.0	0.0	0.0	1.3	10.8	10.8	0.65	Rian, Lt Cloud
14	28	23	25	24	89	94	45.0	0.0	0.0	0.8	13.9	13.5	0.71	Cloudy Showers
15	30	24	24	24	96	87	52.0	0.0	0.0	7.0	16.9	16.4	0.92	Lt Cloud, O/N Rain
16	30	25	24	25	78	93	2.0	3.6	0.0	5.5	17.5	17.0	1.04	Lt Cloud, Shower
17	31	25	25	25	84	94	2.5	4.0	0.0	4.8	19.5	18.6	1.07	Shower, Lt Cloud
18	31	24	24	21	74	70	7.0	3.6	0.0	7.8	10.6	10.3	0.62	Fine, Lt Cloud, Shower
19	31	24	23	23	80	77	30.0	6.2	0.0	10.0	26.1	24.2	1.37	Fine, Showers
20	31	24	21	22	66	78	0.0	8.4	0.0	9.7	25.9	24.5	1.34	Cloudy Shower
21	31	24	22	24	70	79	0.0	8.4	0.0	11.6	26.4	25.1	1.35	Fine
22	31	26	25	25	81	85	6.0	7.4	0.0	7.9	22.3	21.4	1.15	Fine, Lt Cloud
23	29	24	25	25	90	91	43.0	8.6	0.0	1.0	7.2	7.2	0.43	Cloudy Rain
24	32	24	24	24	89	93	25.0	6.0	0.0	2.1	15.1	15.0	0.90	Cloudy Rain
25	31	24	24	27	84	94	8.0	4.8	0.0	7.6	22.0	21.4	1.18	Fine, Lt Cloud, O/N Rain
26	30	23	24	24	93	89	10.0	6.4	0.0	0.3	12.9	12.7	0.76	Cloudy Shower
27	30	24	24	23	83	92	35.0	5.4	0.0	1.2	12.4	12.3	0.77	Cloudy Shower
28	28	24	22	23	76	95	2.0	1.8	0.0	2.6	13.3	12.7	0.69	Cloudy and Rain
29	26	23	23	23	85	93	33.0	3.0	0.0	0.0	7.3	7.3	0.44	Cloudy Rain
30	28	23	23	23	85	91	52.0	9.3	0.0	0.0	5.2	5.2	0.25	Rain
31	30	24	24	22	83	87	40.0	6.4	0.0	2.4	11.7	11.2	0.66	O/N Rain, Cloud
Average	30	24	23	24	80	84		5.7	0.0	4.8	17.2	16.6	0.9	
Total							602.5	175.7	0.0	147.9	534.7	515.4	29.2	

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

12790

12328 **Total Langleys**

413

398 **Average Langleys**



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February

DAILY WEATHER RECORD

2009

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain	Evap	Wet Time	Sun Shine	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm	mm	mm	Hours	Hours	Horiz	19°N	Horiz	
1	29	23	24	24	91	86	34.0	5.2	0.0	2.6	14.8	14.4	0.79	Lt Cloud, Rain
2	30	24	24	26	92	94	75.0	4.8	0.0	1.6	9.6	9.5	0.57	Rain
3	25	23	24	24	98	98	127.0	0.0	0.0	0.0	4.1	4.1	0.25	Rain
4	30	23	23	24	88	95	105.0	0.0	0.0	0.4	12.2	12.1	0.73	Rain
5	30	24	23	24	78	90	3.6	4.2	0.0	1.2	13.5	13.4	0.88	Rain, Cloud
6	28	24	24	24	96	94	6.0	4.6	0.0	3.5	12.8	12.6	0.71	Showers, Cloud
7	27	24	24	25	95	98	84.0	11.4	0.0	0.0	6.6	6.6	0.40	Rain
8	28	24	25	24	94	95	92.0	3.8	0.0	0.0	5.5	5.5	0.33	Rain
9	30	25	25	25	87	89	35.0	3.2	0.0	5.5	16.4	16.2	0.97	Rain, Cloud, Fine
10	31	26	25	25	81	86	0.0	2.8	0.0	7.3	17.5	17.2	0.93	Fine, Cloud
11	32	26	25	24	76	94	0.0	5.2	0.0	9.4	25.2	24.5	1.39	Fine, Lt Cloud
12	31	24	26	26	87	90	41.0	9.0	0.0	9.9	24.6	23.9	1.28	Fine, Lt Cloud, O/N Rain
13	30	24	24	25	83	90	55.0	11.6	0.0	3.7	18.6	18.5	1.02	Cloud, Fine
14	30	23	24	25	85	85	12.0	4.8	0.0	2.5	16.0	15.9	0.85	Cloud, Fine
15	32	26	25	26	80	85	1.0	4.0	0.0	10.0	26.5	25.4	1.39	Fine, Lt Cloud
16	32	26	25	23	79	94	121.0	5.4	0.0	7.4	12.1	12.0	0.72	Fine, Cloud, Rain
17	31	24	26	24	80	77	0.0	7.2	0.0	9.5	22.6	22.1	1.31	Fine, Lt Cloud
18	32	24	23	25	69	82	0.0	6.0	0.0	12.0	25.7	24.8	1.54	Fine
19	32	25	24	23	70	73	0.0	6.2	0.0	11.9	26.6	25.7	1.54	Fine
20	32	26	24	24	70	78	0.0	7.6	0.0	11.0	27.3	26.5	1.62	Fine
21	33	26	22	23	63	70	0.0	7.0	0.0	11.2	25.7	24.1	1.43	Fine, Lt Cloud
22	29	24	24	24	99	94	53.0	9.8	0.0	3.4	7.3	7.2	0.40	Rain, Lt Cloud
23	28	23	24	23	94	86	78.0	0.0	0.0	0.5	14.1	14.4	0.79	Cloud O/N Rain
24	31	23	24	25	87	84	2.0	1.8	0.0	4.9	15.4	15.4	0.85	Cloud Rain
25	30	24	23	24	93	93	0.0	6.0	0.0	2.5	14.6	14.6	0.88	Cloudy Showers
26	30	24	23	23	82	83	46.0	0.0	0.0	3.1	18.5	17.8	0.99	Cloud, Fine
27	31	24	20	20	59	65	2.0	7.8	0.0	11.8	26.2	25.4	1.38	Fine
28	31	23	21	21	65	74	4.0	8.6	0.0	11.7	26.1	25.2	1.41	Fine
Average	30	24	24	24	83	87		5.3	0.0	5.7	17.4	17.0	1.0	
Total							976.6	148.0	0.0	158.5	486.1	475.0	27.34	

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

11628

388

11362 **Total Langleys**

379 **Average Langleys**



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**March
2009**

DAILY WEATHER RECORD

	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	31	22	21	19	67	65	0.0	9.4	0.0	11.6	29.6	29.7	1.66	Fine
2	30	22	20	22	62	73	0.0	9.3	0.0	11.6	24.1	24.3	1.55	Fine
3	31	23	20	23	61	83	0.0	7.4	0.0	11.4	22.9	23.2	1.28	Fine, Lt Cloud
4	32	24	22	24	68	80	0.0	4.2	0.0	9.9	18.5	18.6	1.03	Fine, Cloud
5	32	25	24	23	74	77	0.0	6.0	0.0	9.5	21.7	22.0	1.22	Fine, Lt Cloud
6	31	25	22	21	67	77	0.0	8.6	0.0	4.0	17.2	17.3	1.17	Fine, Rain
7	26	24	21	23	69	77	18.0	6.8	0.0	12.0	9.1	9.1	0.68	Fine, Lt Cloud
8	32	25	22	25	69	84	2.0	3.8	0.0	5.3	22.1	22.3	1.24	Fine, Cloud
9	32	24	23	24	70	85	0.0	5.9	0.0	9.0	19.9	20.2	1.11	Fine, Lt Cloud
10	32	26	25	24	83	79	0.0	6.0	0.0	7.2	18.7	19.0	1.02	Fine, Cloudy
11	31	25	24	24	84	83	0.0	6.6	0.0	5.5	12.8	13.0	0.72	Cloud, Fine
12	32	24	24	24	76	83	35.0	6.8	0.0	5.5	23.3	23.6	1.29	Fine, Cloud, O/N Rain
13	32	24	22	24	68	81	0.0	5.8	0.0	11.0	19.3	19.8	1.08	Fine, Lt Cloud
14	32	25	22	24	66	81	0.0	6.0	0.0	9.8	18.0	18.5	1.05	FinFine, Lt Cloud
15	33	23	21	23	65	77	0.0	7.0	0.0	11.2	29.9	30.8	1.84	Fine
16	32	25	20	23	59	77	0.0	8.0	0.0	11.4	19.9	20.5	1.15	Fine
17	32	25	22	23	67	77	0.0	8.4	0.0	9.4	2.2	22.7	1.25	Fine, Lt Cloud
18	30	25	24	20	74	73	0.0	7.6	0.0	2.4	12.8	12.9	0.72	Fine, Cloud
19	32	25	19	20	62	64	0.0	5.4	0.0	4.9	16.8	17.0	0.94	Lt Cloud, Mist
20	33	23	19	21	55	67	0.0	5.6	0.0	9.9	23.0	23.8	1.31	Fine, Lt Cloud
21	32	21	18	22	53	75	0.0	7.4	0.0	11.3	23.7	24.7	1.35	Fine, Lt Cloud
22	32	22	19	21	58	74	0.0	8.4	0.0	10.6	25.7	26.7	1.44	Fine
23	32	22	18	21	60	74	0.0	9.4	0.0	9.4	17.9	18.6	1.08	Fine
24	32	21	18	21	54	74	0.0	8.6	0.0	11.3	20.2	21.2	1.13	Fine
25	31	20	17	19	54	66	0.0	9.6	0.0	10.2	23.8	24.8	1.33	Fine
26	32	21	12	17	39	75	0.0	10.2	0.0	11.0	22.1	23.2	1.24	Fine
27	31	20	15	22	48	79	0.0	10.0	0.0	6.2	20.7	21.3	1.16	Fine
28	32	21	17	21	55	78	0.0	8.4	0.0	7.1	20.6	21.3	1.15	Fine
29	31	21	17	20	56	74	0.0	8.4	0.0	10.7	22.3	23.0	1.27	Fine
30	31	19	18	20	56	80	2.0	8.4	0.0	10.8	24.7	25.8	1.36	Fine
31	31	20	20	21	67	75	0.0	7.0	0.0	11.0	25.8	27.3	1.44	Fine
Average	31.5	23.0	20.2	21.9	63	76		7.4	0.0	9.1	20.3	21.5	1.20	
Total							57.0	230.4	0.0	282.1	629.3	666.2	37.27	

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

15053

486

15936 **Total Langleys**

514 **Average Langleys**



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April

2009

DAILY WEATHER RECORD

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain	Evap	Wet Time	Sun Shine	Global Radiation (MJ/m ²)			Remarks
	Max	Min	9am	9pm	9am	9pm	mm	mm	Hours	Hours	Horiz	19°N	Horiz	
1	33	20	23	23	78	86	0.0	6.0	0.0	10.9	24.5	25.6	1.30	Fine
2	32	22	24	22	78	84	0.0	7.0	0.0	10.8	24.2	25.1	1.28	Fine
3	33	20	24	22	78	86	0.0	7.2	0.0	11.6	24.1	25.3	1.27	Fine
4	32	21	24	23	76	86	6.5	6.2	0.0	10.7	17.5	18.1	0.92	Fine, Lt Cloud
5	32	22	25	24	78	84	0.0	7.4	0.0	10.1	20.5	21.5	1.10	Fine, Lt Cloud
6	32	23	24	24	78	84	0.0	8.0	0.0	8.9	17.0	17.6	0.90	Fine, Cloud
7	32	23	23	24	74	86	0.0	7.4	0.0	10.5	19.9	20.7	1.05	Fine, Lt Cloud
8	33	24	23	23	73	83	0.0	8.6	0.0	9.2	19.6	20.8	1.06	Fine
9	32	24	23	23	72	86	6.0	9.2	0.0	7.1	17.5	18.2	0.95	Fine, Lt Cloud
10	32	23	23	23	82	92	1.5	8.4	0.0	1.4	9.6	9.7	0.52	Cloud, Shower
11	29	23	24	24	88	95	7.0	4.4	0.0	4.1	11.4	11.8	0.62	Cloud, Rain
12	31	21	23	23	72	84	0.0	4.2	0.0	3.8	15.5	15.9	0.84	Light Cloud
13	31	24	23	24	96	22	2.1	5.6	0.0	4.6	17.9	18.5	0.97	Cloud, Rain, Fine
14	31	24	24	25	88	109	26.0	5.4	0.0	6.5	10.7	11.2	0.58	Cloud, Rain, Fine
15	30	24	24	25	96	93	2.0	4.2	0.0	5.8	12.0	12.6	0.65	Cloud, Shower
16	30	25	24	24	83	90	3.5	4.6	0.0	4.6	13.9	14.5	0.75	Cloud, Fine
17	31	24	24	22	80	82	0.0	2.6	0.0	7.7	18.5	19.2	0.98	Fine
18	29	21	22	22	77	90	0.0	6.9	0.0	8.0	20.3	21.2	1.07	Fine
19	29	20	23	21	82	85	0.0	5.4	0.0	10.8	16.4	17.4	0.86	Fine, Lt Cloud
20	29	20	24	22	88	88	0.0	5.0	0.0	9.0	19.3	20.5	1.03	Fine
21	30	21	22	20	77	75	0.0	5.8	0.0	10.6	19.1	20.4	1.00	Fine, Lt Cloud
22	29	18	21	20	72	79	0.0	6.0	0.0	10.7	22.2	24.0	1.17	Fine, Lt Cloud
23	29	18	23	20	85	83	0.0	7.4	0.0	10.7	22.5	24.6	1.20	Fine
24	29	20	21	20	75	86	0.0	4.0	0.0	10.5	21.0	22.7	1.11	Fine, Lt Cloud
25	30	18	21	21	76	91	0.0	6.8	0.0	10.7	22.4	24.0	1.17	Fine
26	31	19	23	23	78	88	0.0	4.8	0.0	10.6	22.9	24.9	1.21	Fine
27	32	20	17	19	51	77	0.0	5.8	0.0	10.4	22.8	24.9	1.21	Fine
28	31	14	20	21	74	89	0.0	8.0	0.0	10.4	22.6	23.9	1.16	Fine
29	30	19	21	19	76	80	0.0	7.0	0.0	11.0	18.9	21.2	1.02	Fine
30	29	17	20	19	75	82	0.0	7.2	0.0	9.6	20.8	23.0	1.12	Fine

Average Total 30.8 21.1 22.7 22.2 79 84 54.6 186.5 0.0 261.3 18.9 20.0 0.99 599.0 28.76

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

13527 14328 **Total Langleys**
451 478 **Average Langleys**



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May

2009

DAILY WEATHER RECORD

	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					Horiz	19°N	Horiz		UV-R
			9am	9pm											
1	30	17	19	20	69	82	0.0	7.0	0.0	10.6	21.7	24.6	1.22	Fine	
2	30	19	20	21	73	83	0.0	8.0	0.0	7.8	17.7	19.0	0.90	Fine	
3	30	19	20	20	72	77	0.0	7.2	0.0	5.3	16.8	17.7	0.83	Fine, Lt Cloud	
4	30	20	20	19	67	77	0.0	7.4	0.0	10.3	15.8	17.7	0.94	Fine, Lt Cloud	
5	29	18	18	19	67	80	0.0	8.4	0.0	8.1	17.4	19.1	1.01	Fine, Lt Cloud	
6	28	19	19	20	90	85	2.0	6.4	0.0	0.3	8.6	8.6	0.46	Overcast	
7	28	21	19	19	80	85	0.0	3.2	0.0	1.7	6.8	6.9	0.37	Overcast Rain	
8	28	21	19	20	74	88	14.0	4.2	0.0	2.4	11.9	12.2	0.65	Shower, Lt Cloud	
9	28	22	19	19	74	75	0.0	5.8	0.0	5.3	13.9	14.4	0.75	Lt Cloud	
10	26	20	19	19	73	83	0.0	5.4	0.0	4.8	11.5	11.7	0.58	Lt Cloud	
11	27	20	20	20	79	94	3.0	4.0	0.0	3.4	9.2	9.4	0.49	Cloud	
12	28	20	21	23	82	102	0.0	3.4	0.0	7.0	13.3	14.5	0.77	Fine, Cloud	
13	28	21	19	19	78	80	0.0	5.6	0.0	6.2	10.1	10.9	0.58	Fine, Cloud	
14	28	20	20	21	75	86	0.0	5.0	0.0	9.7	17.0	19.2	1.02	Fine	
15	28	20	20	20	76	81	0.0	6.2	0.0	7.5	14.3	15.7	0.83	Fine, Cloud	
16	29	16	18	17	73	65	0.0	5.2	0.0	9.1	19.5	22.0	1.17	Fine	
17	27	13	18	16	79	79	0.0	7.4	0.0	9.4	19.4	21.9	1.16	Fine	
18	27	13	17	19	71	86	0.0	5.2	0.0	10.5	15.9	18.2	0.96	Fine	
19	27	18	18	20	78	89	0.0	6.0	0.0	5.2	12.4	13.2	0.70	Fine, Lt Cloud	
20	29	13	20	19	82	90	0.0	4.6	0.0	9.7	15.8	18.0	0.95	Fine	
21	28	15	14	14	62	75	0.0	5.4	0.0	10.5	18.9	21.8	1.16	Fine	
22	28	12	14	15	62	85	0.0	6.6	0.0	11.1	19.2	22.4	1.19	Fine	
23	26	12	15	15	67	87	0.0	6.4	0.0	11.0	19.5	22.7	1.20	Fine	
24	27	12	16	18	75	92	0.0	3.6	0.0	10.3	20.5	23.7	1.26	Fine	
25	24	16	19	19	81	85	0.0	5.4	0.0	3.2	9.2	9.6	0.43	Fine, Cloud	
26	28	20	18	19	74	83	3.0	1.2	0.0	4.8	13.0	12.9	0.68	Cloud	
27	27	19	20	20	79	93	0.0	5.2	0.0	8.2	12.3	12.7	0.67	Cloud	
28	27	17	20	20	82	93	0.0	4.8	0.0	10.0	15.7	18.1	0.96	Lt Cloud, Fine	
29	28	16	20	19	84	90	0.0	4.6	0.0	9.3	16.7	19.1	1.01	Fine, Lt Cloud	
30	27	16	19	19	85	86	0.0	5.6	0.0	7.3	13.0	14.5	0.77	Fine, Cloud	
31	28	18	20	19	77	86	0.0	6.0	0.0	5.7	17.8	19.3	1.02	Fine, Cloud	
Average	27.8	17.5	18.6	18.9	75	85		5.5	0.0	7.3	15.0	16.5	0.86		
Total							22.0	170.4	0.0	225.7	464.8	511.7	26.68		

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)

11118 12240 **Total Langleys**
 359 395 **Average Langleys**



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June

DAILY WEATHER RECORD

2009

	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	UV-R Horiz	
1	28	18	20	19	85	81	0.0	6.4	0.0	5.9	7.4	8.1	0.42	Cloud
2	28	17	20	19	76	89	0.0	6.6	0.0	7.5	16.7	18.7	0.97	Fine, Cloud
3	28	18	20	20	80	92	0.0	6.0	0.0	7.4	13.1	14.6	0.76	Fine, Cloud
4	28	16	21	20	86	95	0.0	4.6	0.0	9.8	14.2	16.4	0.94	Fine, Cloud
5	28	16	21	20	84	96	0.0	4.0	0.0	9.8	14.3	16.5	0.98	Fine
6	28	15	21	18	85	91	0.0	5.0	0.0	9.8	10.8	12.5	0.65	Fine
7	29	27	21	20	81	97	0.0	4.2	0.0	9.0	23.9	27.4	1.42	Fine
8	29	16	13	15	57	81	0.0	5.4	0.0	9.2	19.0	21.8	1.13	Fine, Lt Cloud
9	27	14	13	13	57	78	0.0	6.2	0.0	10.5	18.5	21.8	1.14	Fine, Lt Cloud
10	26	9	13	12	61	85	0.0	7.2	0.0	10.8	18.5	21.8	1.13	Fine
11	26	10	14	15	72	83	0.0	5.8	0.0	10.5	18.7	22.0	1.14	Fine
12	24	10	13	14	69	87	0.0	5.6	0.0	10.6	19.2	22.6	1.18	Fine
13	25	11	15	17	76	90	0.0	5.2	0.0	10.2	16.2	19.0	0.99	Fine
14	26	13	18	17	85	94	0.0	4.6	0.0	8.9	19.1	21.8	1.13	Fine
15	28	14	19	19	85	92	0.0	4.0	0.0	9.9	18.0	21.0	1.09	Fine
16	28	14	12	13	56	79	0.0	6.0	0.0	10.5	18.2	21.5	1.12	Fine
17	27	11	13	18	58	90	0.0	5.8	0.0	10.2	16.4	19.2	0.97	Fine
18	27	14	17	17	79	88	0.0	4.4	0.0	8.9	13.6	15.6	0.81	Cloud, Fine
19	25	14	14	13	65	92	0.0	5.0	0.0	10.4	18.0	21.1	1.10	Fine
20	29	10	15	17	81	94	0.0	6.6	0.0	10.5	20.3	23.9	1.24	Fine
21	27	14	18	18	86	80	0.0	4.0	0.0	5.9	12.2	13.4	0.72	Cloud, Fine
22	26	19	19	20	79	91	0.0	5.2	0.0	1.0	7.3	7.4	0.38	Overcast
23	27	15	20	18	83	94	0.0	3.0	0.0	9.2	17.2	19.9	1.03	Fine, Lt Cloud
24	27	15	20	18	83	96	0.0	4.0	0.0	9.6	15.8	18.3	0.95	Cloud, Fine
25	26	14	19	19	86	95	0.0	5.4	0.0	9.5	18.2	21.1	1.10	Fine
26	27	14	20	21	88	93	0.0	3.4	0.0	7.7	15.2	17.1	0.89	Cloud, Fine
27	31	17	17	18	64	88	0.0	3.4	0.0	9.4	14.6	16.9	0.88	Fine
28	29	14	14	16	57	81	0.0	7.0	0.0	10.6	12.2	14.4	0.75	Lt Cloud, Fine
29	28	12	16	15	70	84	0.0	5.0	0.0	9.8	8.2	9.6	0.41	Lt Cloud, Fine
30	27	12	18	19	78	91	0.0	5.8	0.0	8.5	17.9	20.3	1.06	Lt Cloud, Fine

Average	27.3	14.3	17.1	17.3	75	89		5.2	0.0	9.1	15.8	18.2	0.95	
Total							0.0	154.8	0.0	271.5	472.9	545.7	28.50	

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)

11313 13053 **Total Langleys**
 365 421 **Average Langleys**



Allunga Exposure Laboratory

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July

DAILY WEATHER RECORD

2009

	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	27	16	20	18	80	92	0.0	6.2	0.0	10.7	12.4	14.6	0.74	Fine, Lt Cloud
2	29	14	20	19	83	95	0.0	4.8	0.0	9.7	16.7	19.3	0.98	Fine, Lt Cloud
3	28	17	11	10	52	59	0.0	6.6	0.0	10.5	17.5	20.6	1.05	Fine, Smoke Haze
4	25	11	11	13	59	79	0.0	9.2	0.0	11.0	18.4	21.8	1.11	Fine
5	24	9	15	15	81	89	0.0	5.4	0.0	10.4	15.9	18.6	0.95	Fine
6	25	10	16	18	81	91	0.0	5.0	0.0	10.2	19.2	22.4	1.14	Fine
7	26	15	18	19	84	93	0.0	4.6	0.0	10.5	13.2	15.4	0.79	Fine
8	27	16	19	19	80	85	0.0	4.0	0.0	8.6	13.6	15.4	0.79	Fine, Lt Cloud
9	26	17	17	17	72	88	0.0	6.8	0.0	10.3	15.6	18.2	0.93	Fine
10	26	11	15	14	76	77	0.0	5.8	0.0	10.4	17.7	20.7	1.06	Fine
11	25	9	12	16	61	82	0.0	6.6	0.0	10.5	18.5	21.6	1.10	Fine
12	25	12	16	16	80	91	0.0	5.2	0.0	10.4	17.2	20.0	1.02	Fine
13	26	19	18	20	82	92	0.0	5.4	0.0	10.3	17.1	19.9	1.01	Fine
14	28	14	20	20	84	92	0.0	4.4	0.0	9.3	17.3	19.8	1.01	Fine
15	26	16	10	9	54	73	0.0	8.0	0.0	10.9	21.6	25.2	1.29	Fine
16	24	9	10	10	67	78	0.0	6.6	0.0	10.7	18.0	21.0	1.07	Fine
17	23	7	10	11	58	79	0.0	5.9	0.0	10.9	19.4	22.7	1.16	Fine
18	24	7	12	12	69	77	0.0	5.2	0.0	10.8	18.1	21.1	1.08	Fine
19	27	10	15	17	74	89	0.0	5.2	0.0	10.6	17.6	20.4	1.04	Fine
20	28	12	17	18	82	83	0.0	5.2	0.0	7.4	15.3	16.9	0.86	Fine, Cloud
21	27	18	18	17	76	72	0.0	6.8	0.0	3.9	9.5	10.0	0.51	Cloud
22	27	19	18	18	80	86	0.0	7.0	0.0	3.1	13.6	14.2	0.72	Cloud
23	27	13	19	17	80	92	0.0	4.8	0.0	10.3	19.0	21.8	1.11	Fine
24	28	13	18	19	78	89	0.0	5.2	0.0	9.7	19.2	21.9	1.12	Fine
25	26	15	18	18	78	87	0.0	6.6	0.0	10.2	18.9	21.6	1.10	Fine
26	26	15	18	18	81	91	0.0	6.2	0.0	5.6	13.9	14.9	0.76	Fine, Cloudy
27	26	14	18	15	81	83	0.0	5.4	0.0	9.8	19.3	21.9	1.12	Fine
28	27	13	18	16	78	72	0.0	5.6	0.0	6.5	10.1	11.0	0.56	Fine, Cloud
29	26	11	13	17	62	80	0.0	8.4	0.0	9.2	16.3	18.3	0.93	Fine
30	26	14	15	16	69	80	0.0	6.4	0.0	9.6	19.6	22.1	1.13	Fine, Lt Cloud
31	26	12	14	17	67	85	0.0	6.8	0.0	9.5	14.3	16.1	0.82	Fine
Average	26.2	13.2	15.8	16.1	74	84		6.0	0.0	9.4	16.6	19.0	0.97	
Total							0.0	185.3	0.0	291.5	514.0	589.4	30.06	

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

12295

14098 **Total Langleys**

397

455 **Average Langleys**



Allunga Exposure Laboratory

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August

DAILY WEATHER RECORD

2009

	Temperature (°C)				Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²) UV-R			Remarks
	Max	Min	Dew Point		9am	9pm					Horiz	19°N	Horiz	
			9am	9pm										
1	27	14	11	15	50	74	0.0	7.0	0.0	10.7	21.9	25.0	1.12	Fine
2	26	12	7	14	43	65	0.0	7.4	0.0	9.8	11.5	12.9	0.67	Fine
3	27	13	10	15	43	67	0.0	6.8	0.0	6.4	10.5	11.4	0.61	Fine, Cloud
4	27	13	12	17	48	79	0.0	6.6	0.0	10.0	12.0	13.5	0.71	Fine, Lt Cloud
5	27	13	12	15	47	73	0.0	5.8	0.0	9.8	29.5	33.2	1.60	Fine
6	27	12	13	14	59	64	0.0	6.6	0.0	7.2	17.3	18.8	0.98	Fine
7	27	14	15	16	61	82	0.0	5.6	0.0	10.1	19.6	22.1	1.13	Fine, Lt Cloud
8	27	12	15	12	68	73	0.0	5.4	0.0	10.0	19.5	21.8	1.19	Fine
9	26	12	14	16	60	78	0.0	6.6	0.0	10.4	17.6	19.8	0.95	Fine
10	26	13	14	16	64	71	0.0	6.0	0.0	10.0	19.0	21.2	1.12	Fine
11	27	15	15	18	63	83	0.0	5.8	0.0	10.7	19.7	22.1	1.24	Fine
12	27	14	17	18	71	88	0.0	5.6	0.0	10.4	19.0	21.3	1.08	Fine
13	28	13	17	17	71	90	0.0	5.0	0.0	10.4	20.7	23.1	1.22	Fine
14	30	12	18	18	74	91	0.0	5.4	0.0	9.9	21.0	23.3	1.17	Fine
15	29	11	16	18	58	88	0.0	5.6	0.0	10.6	20.7	23.5	1.21	Fine
16	28	17	18	18	73	81	0.0	5.2	0.0	10.2	20.5	22.7	1.10	Fine
17	27	14	14	14	54	77	0.0	6.4	0.0	10.2	20.5	22.6	1.13	Fine
18	27	14	16	17	62	84	0.0	6.4	0.0	10.7	18.5	20.5	1.06	Fine, Smoke Haze
19	27	18	15	15	58	69	0.0	6.6	0.0	10.7	19.0	21.1	1.13	Fine, Smoke Haze
20	27	15	14	16	57	75	0.0	7.6	0.0	10.9	20.6	22.8	1.15	Fine, Smoke Haze
21	27	15	17	16	62	75	0.0	7.0	0.0	10.4	19.8	21.8	1.14	Fine
22	28	17	17	17	65	85	0.0	5.6	0.0	10.8	18.6	20.5	0.95	Fine
23	27	15	18	17	68	83	0.0	5.4	0.0	10.7	24.8	27.3	1.43	Fine
24	28	15	16	18	59	82	0.0	6.6	0.0	10.6	15.0	16.5	0.87	Fine, Lt Cloud
25	29	19	20	18	74	80	0.0	6.4	0.0	7.4	20.5	21.8	1.05	Fine
26	29	19	18	19	63	86	0.0	3.4	0.0	10.6	20.6	22.5	1.16	Fine
27	29	19	19	19	63	87	0.0	8.4	0.0	10.4	22.1	24.1	1.33	Fine
28	28	17	18	18	64	76	0.0	7.2	0.0	10.7	22.0	23.9	1.29	Fine
29	29	16	19	19	65	83	0.0	6.6	0.0	10.5	21.7	23.6	1.24	Fine
30	29	16	19	17	66	78	0.0	6.8	0.0	10.5	22.2	24.1	2.30	Fine
31	29	18	19	18	71	85	0.0	6.6	0.0	8.3	18.2	19.3	0.98	Fine
Average	27.5	14.6	15.6	16.6	61	79		6.2	0.0	10.0	19.5	21.6	1.14	
Total							0.0	193.4	0.0	310.0	604.1	668.1	35.30	

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

14450

15981 **Total Langleys**

466

516 **Average Langleys**



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September

DAILY WEATHER RECORD

2009

	Temperature (°C)		Dew Point		Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²) UV-R			Remarks
	Max	Min	9am	9pm	9am	9pm					Horiz	19°N	Horiz	
1	29	17	19	19	72	75	0.0	5.0	0.0	8.2	19.3	20.5	1.08	Fine
2	29	22	20	20	76	76	0.0	8.0	0.0	7.0	20.4	21.6	1.18	Fine
3	29	22	20	16	77	64	0.0	4.2	0.0	9.5	21.1	22.6	1.19	Fine, Lt Cloud
4	28	20	15	17	57	71	0.0	9.0	0.0	10.6	19.9	21.4	1.09	Fine, Smoke Haze
5	29	18	17	20	61	81	0.0	7.2	0.0	10.6	20.4	21.9	1.12	Fine
6	30	17	20	18	68	85	0.0	6.8	0.0	10.0	25.0	26.7	1.45	Fine
7	29	19	19	20	67	79	0.0	6.2	0.0	10.2	17.2	18.4	0.86	Fine
8	30	23	19	21	64	85	0.0	4.6	0.0	10.4	17.8	19.0	0.97	Fine, Lt Cloud
9	21	18	-4	12	15	59	0.0	7.4	0.0	10.7	24.2	25.8	1.41	Fine
10	31	14	14	16	49	73	0.0	9.8	0.0	10.6	23.0	24.5	1.34	Fine
11	30	15	18	16	60	74	0.0	8.6	0.0	10.9	23.0	24.5	1.28	Fine
12	29	17	15	14	50	57	0.0	7.6	0.0	10.5	23.5	24.4	1.28	Fine
13	29	20	13	16	47	64	0.0	0.4	0.0	8.9	24.1	25.2	1.36	Fine
14	29	19	15	17	51	66	0.0	0.2	0.0	10.8	21.8	23.5	1.24	Fine, Lt Cloud
15	29	23	16	17	57	67	0.0	9.6	0.0	10.0	19.1	20.1	1.04	Fine, Lt Cloud
16	29	19	14	17	51	70	0.0	0.4	0.0	10.5	24.3	25.5	1.35	Fine
17	29	20	20	16	78	61	0.0	8.2	0.0	8.7	19.1	19.8	1.06	Lt Cloud, Fine
18	29	20	15	18	51	71	0.0	6.4	0.0	10.8	19.4	20.4	1.05	Fine
19	29	18	15	15	49	64	0.0	10.0	0.0	10.9	24.3	25.5	1.32	Fine
20	29	16	15	17	54	75	0.0	8.4	0.0	11.1	23.3	24.4	1.26	Fine
21	28	15	16	16	54	71	0.0	8.0	0.0	11.0	19.5	20.3	1.02	Fine
22	29	17	17	17	56	79	0.0	6.6	0.0	11.1	20.9	21.8	1.08	Fine
23	31	22	20	21	121	82	0.0	9.0	0.0	9.8	28.0	29.0	1.60	Fine
24	31	22	-9	15	16	60	0.0	11.6	0.0	9.6	22.2	23.0	1.29	Fine, Haze PM
25	28	16	13	16	47	62	0.0	10.0	0.0	8.7	23.0	23.7	1.31	Fine, Dust haze
26	28	20	15	18	51	73	0.0	8.2	0.0	9.8	22.4	23.1	1.25	Fine, DustHaze
27	33	18	-15	18	6	74	0.0	10.2	0.0	10.0	20.4	21.0	1.11	Fine, Dust Haze
28	29	19	10	18	37	72	0.0	10.4	0.0	9.6	21.8	22.4	1.22	Fine, Dust Haze
29	29	18	18	18	60	72	0.0	9.8	0.0	10.0	21.7	22.3	1.10	Fine, Dust haze
30	29	22	16	16	52	58	0.0	9.2	0.0	10.6	22.8	23.4	1.28	Fine, Dust haze

**Average
Total**

29.0 18.9 13.9 17.2 55 71 0.0 7.4 0.0 10.0 21.8 22.9 1.21 652.9 685.7 36.19

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

15617 16402 **Total Langleys**
504 529 **Average Langleys**



Allunga Exposure Laboratory

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October

DAILY WEATHER RECORD

2009

	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	22	15	17	52	67	0.0	10.2	0.0	10.6	23.3	23.9	1.05	Fine Dust Haze
2	29	21	17	19	91	80	0.0	9.0	0.0	10.4	23.5	24.1	1.20	Fine
3	30	21	19	22	62	83	0.0	9.0	0.0	8.8	22.4	22.8	1.06	Fine Hot
4	36	21	1	18	29	67	0.0	8.0	0.0	10.2	24.0	24.5	1.31	Fine Hot
5	34	18	-7	18	9	72	0.0	12.0	0.0	10.8	24.7	25.1	1.27	Fine Hot
6	30	18	18	20	58	73	0.0	10.2	0.0	10.7	23.0	23.4	1.29	Fine Hot
7	30	21	17	18	53	67	0.0	9.8	0.0	10.6	22.6	23.3	1.14	Fine Occ Cloud
8	32	21	17	18	54	68	0.0	10.0	0.0	10.9	24.6	24.9	1.27	Fine Hot
9	30	22	17	14	54	54	0.0	11.0	0.0	11.1	24.2	24.4	1.36	Fine Hot
10	30	21	14	16	45	61	0.0	10.0	0.0	11.4	23.0	23.3	1.35	Fine
11	29	23	16	10	53	41	0.0	12.8	0.0	10.0	24.1	24.3	1.27	Fine
12	29	22	14	19	45	82	0.0	11.2	0.0	10.5	22.9	23.1	1.15	Fine
13	30	20	16	18	55	71	0.0	8.0	0.0	11.3	26.3	26.5	1.32	Fine Hot
14	32	23	18	21	59	81	0.0	8.0	0.0	11.2	25.5	25.5	1.28	Fine Very Hot
15	34	19	5	21	20	81	0.0	7.2	0.0	11.0	28.4	28.5	1.40	Fine Very Hot
16	34	16	-6	17	15	71	0.0	11.2	0.0	11.2	20.7	20.7	1.34	Fine Haze
17	34	15	-8	20	8	74	0.0	10.0	0.0	11.1	22.3	22.3	1.38	Fine Hot
18	31	22	19	20	56	70	0.0	10.8	0.0	10.3	29.6	28.5	1.38	Fine Hot Windy
19	30	14	17	14	53	53	0.0	11.4	0.0	10.8	20.9	20.9	1.39	Fine Occ Cloud
20	30	20	14	16	43	59	0.0	13.6	0.0	11.6	25.5	25.4	1.41	Fine
21	30	17	11	15	36	57	0.0	11.8	0.0	12.0	25.9	25.7	1.40	Fine Smoke Haze
22	29	18	16	16	61	61	0.0	11.4	0.0	10.4	23.6	23.4	1.28	Fine Occ Cloud
23	30	18	15	16	45	60	0.0	8.8	0.0	11.5	26.8	26.6	1.34	Fine
24	30	19	14	17	78	65	0.0	13.2	0.0	11.6	25.8	25.5	1.39	Fine
25	30	17	16	18	53	72	0.0	10.8	0.0	11.7	29.5	29.1	1.48	Fine Hot
26	30	19	18	18	59	65	0.0	9.6	0.0	11.8	21.4	21.0	1.47	Fine Hot
27	30	24	15	20	86	74	0.0	10.4	0.0	9.9	24.2	23.9	1.11	Fine Hot
28	31	23	19	20	58	72	0.0	10.8	0.0	8.4	20.7	20.4	1.04	Overcast
29	31	24	16	19	51	68	0.0	11.6	0.0	8.5	19.2	18.9	0.96	Overcast
30	30	24	17	18	53	69	0.0	11.0	0.0	10.4	24.6	24.1	1.24	Fine Cloudy
31	29	20	16	18	52	70	0.0	11.2	0.0	8.7	25.7	25.3	1.01	Fine
Average	31	20	13.1	17.8	50	68		10.5	0.0	10.6	24.2	24.2	1.27	
Total							0.0	324.0	0.0	329.4	748.9	749.3	39.32	

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

17914

17924 **Total Langleys**

578

578 **Average Langleys**



Allunga Exposure Laboratory

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November

DAILY WEATHER RECORD

2009

	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	31	18	15	17	46	62	0.0	7.8	0.0	12.2	21.9	21.4	1.42	Fine
2	30	21	16	15	50	56	0.0	11.8	0.0	12.0	21.3	20.7	1.34	Windy Fine
3	29	18	15	17	48	69	0.0	12.4	0.0	11.9	19.8	19.3	1.37	Fine
4	30	18	16	18	51	70	0.0	11.4	0.0	11.9	21.6	21.0	1.33	Lt Cloud Fine
5	30	19	18	20	60	73	0.0	10.0	0.0	12.2	22.8	22.1	1.45	Cloudy Shower
6	30	23	21	20	65	72	0.0	9.6	0.0	9.5	19.1	19.7	1.00	Lt Cloud Fine
7	30	22	19	20	57	76	15.5	11.4	0.0	4.0	11.6	11.4	0.61	Cloudy Shower
8	31	23	20	19	70	71	4.0	7.0	0.0	6.6	16.5	16.2	0.76	Cloudy Shower
9	31	22	20	19	55	75	0.0	7.6	0.0	10.9	20.3	19.7	1.11	Light Breeze
10	30	22	18	19	64	74	0.0	10.4	0.0	6.2	20.0	19.7	0.82	Windy Lt Cloud
11	31	22	17	20	53	90	0.0	10.4	0.0	3.9	14.4	14.3	0.52	Overcast Showers
12	30	20	18	20	60	74	16.0	8.8	0.0	5.1	17.4	17.1	0.81	Cloudy Overnight Showers
13	30	22	12	18	40	72	0.0	8.6	0.0	10.8	25.9	25.1	1.32	Fine
14	30	18	15	18	49	67	0.0	10.8	0.0	11.5	25.9	24.9	1.34	Fine
15	30	21	16	21	49	75	0.0	11.2	0.0	12.4	31.6	30.3	1.55	Fine Hot
16	31	22	18	19	59	76	0.0	9.6	0.0	11.1	24.8	23.9	1.43	Lt Cloud Fine
17	31	20	19	19	61	75	0.0	8.2	0.0	11.9	24.8	23.8	1.48	Fine
18	31	20	19	20	61	77	0.0	8.8	0.0	12.2	25.8	24.7	1.52	Fine Hot
19	30	22	20	20	62	76	0.0	9.0	0.0	11.4	26.5	25.4	1.47	Fine
20	31	24	19	22	56	86	0.0	10.4	0.0	12.1	25.0	23.8	1.50	Fine
21	31	25	22	21	66	74	0.0	10.0	0.0	11.6	25.3	24.2	1.48	Fine Hot
22	31	25	18	17	52	37	0.0	12.0	0.0	11.0	28.6	27.4	1.43	Fine Hot
23	32	24	19	19	55	63	0.0	11.6	0.0	11.7	25.9	24.6	1.42	Fine Cloud
24	31	22	20	20	71	67	3.0	10.2	0.0	9.0	12.0	12.5	1.11	Cloudy
25	32	24	21	21	61	71	0.0	10.8	0.0	5.3	24.3	23.8	0.82	Fine Cloud
26	31	25	19	21	55	70	0.0	10.8	0.0	11.9	23.2	22.1	1.46	Fine Cloud
27	31	24	20	21	62	69	0.0	11.2	0.0	11.7	27.9	26.5	1.42	Fine Hot
28	32	23	18	21	51	75	0.0	9.4	0.0	11.8	28.3	26.8	1.44	Fine Hot
29	32	24	21	23	60	80	0.0	9.4	0.0	9.1	24.5	23.5	1.13	Fine Hot
30	34	24	19	24	48	84	0.0	7.2	0.0	12.5	22.8	21.5	1.53	Fine Hot
Average	31	22	18.2	19.6	57	72		9.9	0.0	10.2	22.7	21.9	1.25	
Total							38.5	297.8	0.0	305.4	679.8	657.4	37.40	

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

16261
525

15725 **Total Langleys**
507 **Average Langleys**



Allunga Exposure Laboratory

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December

DAILY WEATHER RECORD

2009

	Temperature (°C)				Relative Humidity (%)		Rain mm	Evap mm	Wet Time Hours	Sun Shine Hours	Global Radiation (MJ/m ²)			Remarks
	Max	Min	Dew Point		%						UV-R			
			9am	9pm	9am	9pm					Horiz	19°N	Horiz	
1	34	23	15	23	38	80	0.0	8.0	0.0	11.9	23.4	22.1	1.38	Fine
2	34	25	20	23	55	77	0.0	10.4	0.0	12.2	23.9	22.6	1.52	Fine Hot
3	32	26	21	21	58	69	0.0	10.0	0.0	11.6	25.8	24.4	1.46	Fine Lt Cloud
4	33	26	20	20	54	66	0.0	12.0	0.0	11.6	22.7	21.5	1.32	Fine Lt Cloud
5	32	24	19	20	56	68	0.0	12.8	0.0	12.3	26.5	25.0	1.48	Fine Hot
6	32	22	20	20	60	66	0.0	12.0	0.0	11.9	30.5	28.8	1.53	Fine Hot
7	32	26	20	21	55	71	0.0	12.0	0.0	12.1	20.7	19.6	1.48	Fine Hot
8	32	23	17	19	47	61	0.0	12.0	0.0	12.5	27.4	25.8	1.54	Fine Hot
9	33	24	19	22	56	76	0.0	12.2	0.0	11.1	25.5	24.1	1.39	Fine Hot
10	33	27	22	23	64	78	0.0	12.8	0.0	11.6	23.4	22.1	1.28	Fine Hot
11	33	26	23	23	67	76	0.0	12.2	0.0	11.7	26.0	24.5	1.30	Fine Hot
12	32	25	21	20	60	66	0.0	13.0	0.0	11.6	27.7	26.1	1.49	Fine Very Hot
13	32	25	19	21	52	68	0.0	12.4	0.0	12.1	23.9	22.4	1.48	Fine Very Hot
14	32	25	21	20	64	65	0.0	12.6	0.0	10.7	19.9	18.8	1.19	Fine Cloudy
15	32	25	21	21	58	67	0.0	11.0	0.0	12.9	22.1	20.9	1.39	Fine Cloudy
16	32	24	20	20	60	65	0.0	12.0	0.0	9.6	20.6	19.6	1.04	Fine Lt Cloud
17	32	24	19	20	57	65	2.0	12.2	0.0	12.0	22.9	21.5	1.57	Fine
18	31	24	18	21	52	71	0.0	12.0	0.0	12.6	26.6	24.9	1.51	Fine Very Hot
19	32	25	21	22	61	74	0.0	11.4	0.0	9.4	22.0	20.9	1.08	Fine
20	33	25	20	21	55	70	0.0	9.6	0.0	11.9	27.7	26.0	1.32	Fine Hot
21	33	26	20	21	56	69	0.0	10.6	0.0	11.8	19.9	18.7	1.31	Fine Cloudy
22	33	26	21	22	56	72	0.0	9.6	0.0	11.2	22.3	21.0	1.26	Fine Cloudy
23	34	27	19	22	50	68	0.0	10.6	0.0	11.7	23.0	21.6	1.26	Fine
24	34	27	22	22	57	70	0.0	6.8	0.0	10.2	28.2	26.8	1.25	Fine Lt Cloud
25	33	27	22	22	62	69	0.0	10.2	0.0	4.5	14.8	14.5	0.45	Fine Cloudy
26	30	23	23	23	80	88	0.5	10.4	0.0	0.6	14.2	14.2	0.38	Fine Cloudy
27	32	25	22	23	65	73	17.0	11.8	0.0	9.0	20.9	20.0	0.80	Fine Cloudy
28	31	24	22	22	76	72	2.5	9.2	0.0	5.7	20.7	20.1	0.62	Fine
29	32	26	24	23	127	73	1.5	4.4	0.0	11.1	17.8	16.8	1.34	Cloudy Drizzle
30	31	24	23	24	87	93	0.0	7.6	0.0	6.5	14.6	14.1	0.52	Cloudy lt Showers
31	28	24	23	22	96	76	109.0	7.8	0.0	0.0	8.8	8.8	0.37	Cloudy Heavy Overnight Rain
Average	32.2	24.9	20.5	21.5	63	72		10.7	0.0	10.2	22.4	21.2	1.20	
Total							132.5	331.6	0.0	315.6	694.4	658.2	37.30	

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

16610

536

15744 **Total Langleys**

508 **Average Langleys**