



SRC CLIMATE REFERENCE STATION DAILY DATA REPORT

SASKATOON STATION 4057180

52°09' N 106°36' W 497 m asl Estab. 1963

Preliminary **DECEMBER 2018**

Day	Temperature						Degree-days			Precipitation			Relative Humidity		Station Pressure (sea level)	
	Max	Normal Max	Min	Normal Min	Mean	Normal Mean	Growing	Heating	Cooling	Weighing Gauge	Comments	Snow-on-Ground 0900h	Max ½ hr Avg	Min ½ hr Avg	Max ½ hr Avg	Min ½ hr Avg
	°C	1981-2010	°C	1981-2010	°C	1981-2010	5°C base	18°C base	18°C base	mm		cm	%	%	mbar	mbar
1	-5.3	-5.3	-8.2	-14.0	-6.8	-9.6	0.0	24.8	0.0	0.0	fog	6	95	93	1016	1012
2	-5.0	-6.3	-9.7	-14.4	-7.4	-10.3	0.0	25.4	0.0	0.0	fog	6	95	92	1020	1016
3	-6.6	-6.9	-12.0	-15.8	-9.3	-11.3	0.0	27.3	0.0	0.4	fog/snow	6	93	90	1020	1016
4	-7.6	-6.6	-11.0	-16.8	-9.3	-11.7	0.0	27.3	0.0	0.2	light snow	8	91	79	1016	1012
5	-6.9	-6.8	-12.0	-16.1	-9.5	-11.5	0.0	27.5	0.0	0.2	light snow	6	89	70	1026	1012
6	-7.9	-6.7	-14.8	-15.7	-11.4	-11.2	0.0	29.4	0.0	0.0	light snow	7	82	72	1024	1019
7	-7.0	-7.2	-18.6	-16.2	-12.8	-11.7	0.0	30.8	0.0	0.0		7	83	59	1020	1015
8	-6.9	-7.9	-19.2	-17.6	-13.1	-12.8	0.0	31.1	0.0	0.0		7	87	65	1022	1015
9	-5.3	-7.9	-13.9	-17.4	-9.6	-12.6	0.0	27.6	0.0	0.0		7	85	64	1022	1015
10	-1.8	-7.3	-16.4	-16.7	-9.1	-12.0	0.0	27.1	0.0	0.0		7	89	76	1015	1007
11	-0.2	-7.1	-9.3	-16.2	-4.8	-11.7	0.0	22.8	0.0	0.0		7	94	68	1010	994
12	0.8	-7.8	-4.6	-17.4	-1.9	-12.6	0.0	19.9	0.0	0.0		7	89	62	1006	990
13	1.4	-7.9	-9.1	-16.4	-3.9	-12.2	0.0	21.9	0.0	0.0		7	78	61	1009	1003
14	4.6	-8.1	-8.3	-16.3	-1.9	-12.2	0.0	19.9	0.0	0.0		7	90	56	1010	998
15	6.6	-7.1	-4.7	-17.7	1.0	-12.4	0.0	17.0	0.0	0.0		7	71	51	1014	995
16	-4.1	-8.1	-12.0	-17.2	-8.1	-12.6	0.0	26.1	0.0	0.0		6	80	68	1023	1014
17	3.4	-8.6	-7.3	-17.2	-2.0	-12.9	0.0	20.0	0.0	0.0		6	84	70	1023	1002
18	3.3	-9.3	-7.9	-18.0	-2.3	-13.7	0.0	20.3	0.0	0.0		6	94	68	1005	995
19	0.6	-8.3	-4.6	-16.9	-2.0	-12.6	0.0	20.0	0.0	0.0		6	86	67	1013	996
20	1.3	-9.0	-8.1	-18.0	-3.4	-13.5	0.0	21.4	0.0	0.0		6	87	70	1015	998
21	3.6	-9.6	-3.3	-19.0	0.2	-14.3	0.0	17.8	0.0	0.7	freezing rain	6	85	69	1003	991
22	-2.9	-10.3	-8.3	-18.1	-5.6	-14.2	0.0	23.6	0.0	0.1		6	83	67	1017	1003
23	-7.0	-9.1	-16.5	-18.9	-11.8	-14.0	0.0	29.8	0.0	0.0		5	90	81	1017	1014
24	-11.7	-8.3	-19.3	-18.4	-15.5	-13.3	0.0	33.5	0.0	0.0	light snow	6	86	77	1023	1015
25	-11.0	-8.2	-19.9	-18.0	-15.5	-13.1	0.0	33.5	0.0	0.1		6	91	83	1025	1023
26	-8.4	-7.0	-13.2	-17.3	-10.8	-12.2	0.0	28.8	0.0	0.1		6	91	87	1023	1019
27	-10.2	-8.3	-21.9	-17.6	-16.1	-13.0	0.0	34.1	0.0	0.0		6	88	71	1027	1021
28	-5.2	-10.2	-23.1	-18.5	-14.2	-14.4	0.0	32.2	0.0	0.3	light snow	6	86	77	1026	1009
29	-6.3	-11.5	-15.6	-20.2	-11.0	-15.9	0.0	29.0	0.0	0.6	light snow	6	86	77	1009	1000
30	-15.0	-12.2	-22.7	-20.3	-18.9	-16.3	0.0	36.9	0.0	0.4	light snow	8	85	58	1029	1000
31	-19.0	-13.2	-25.7	-21.7	-22.4	-17.5	0.0	40.4	0.0	0.1	light snow	5	81	61	1034	1024
Total							0.0	827.2	0.0	3.2			Extreme / Date	Extreme / Date	Extreme / Date	Extreme / Date
Avg	-4.4	-8.3	-12.9	-17.4	-8.7	-12.9	1981-2010 Normal			12.7	Normal					
Extreme Date	6.6		-25.7				0.1	957.5	0.0	216.3	Cumulative		95	51	1034	990
Date	15		31							355.3	Cumulative No		1	15	31	12

Note: Red numbers indicate manual calculation; Red cell indicate data not available

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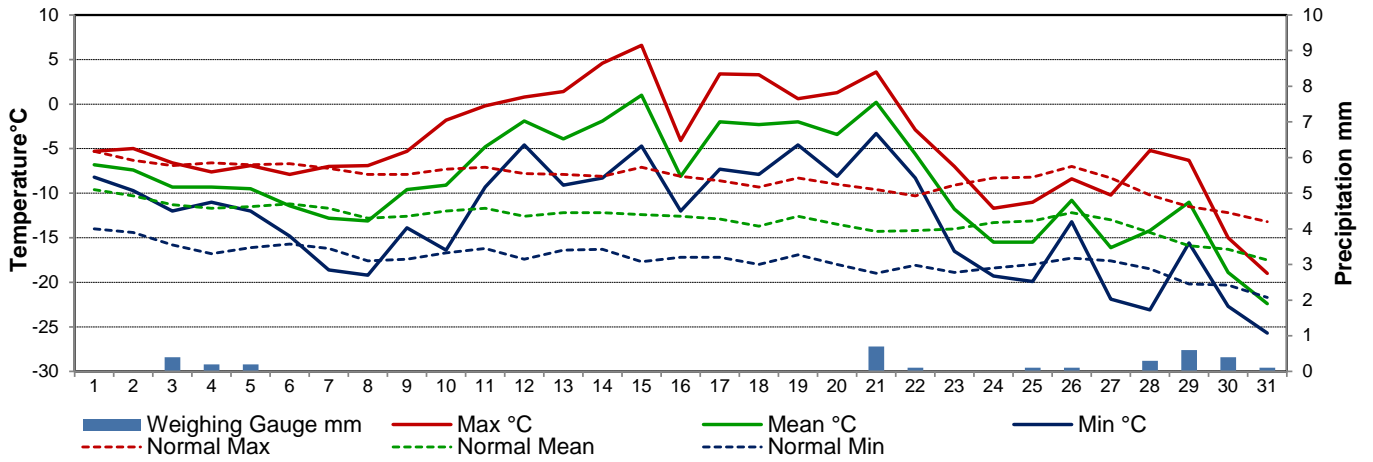


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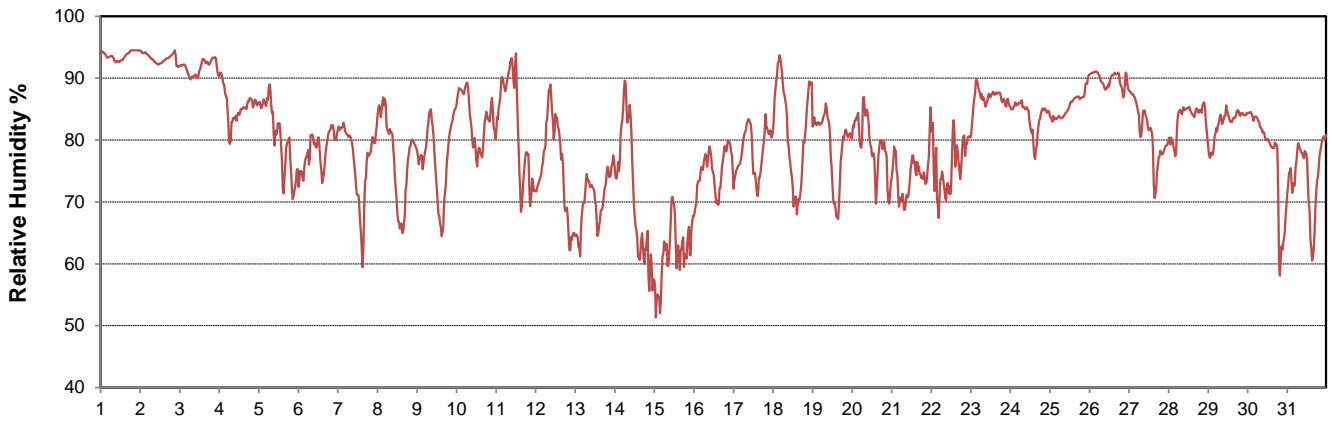


CAMPBELL SCIENTIFIC WHEN MEASUREMENTS MATTER

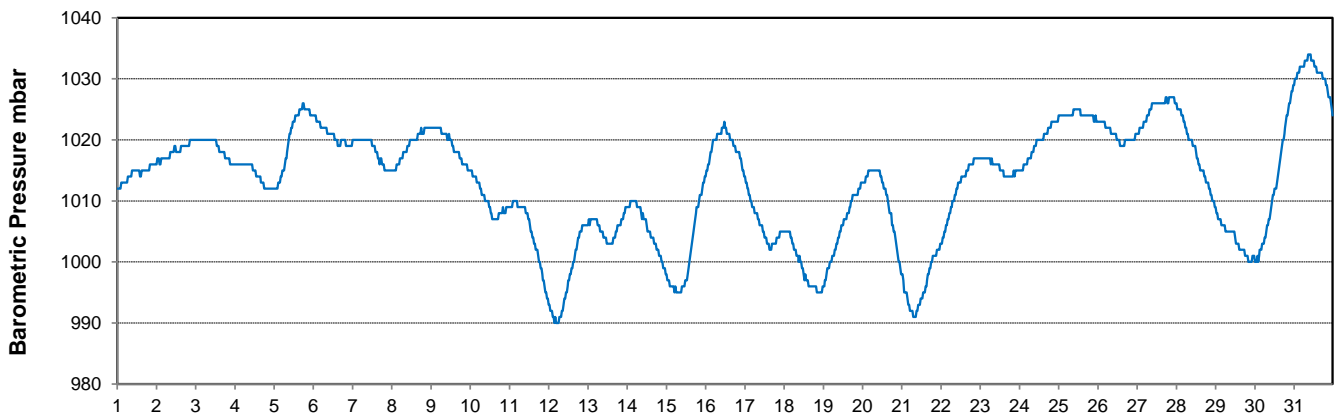
Temperature and Precipitation for December 2018



Relative Humidity for December 2018



Barometric Pressure Corrected to Sea Level for December 2018





SRC CLIMATE REFERENCE STATION DAILY DATA REPORT

SASKATOON STATION 4057180

52°09' N 106°36' W 497 m asl Estab. 1963

Preliminary **DECEMBER 2018**

Day	Wind Gust			Soil Temperatures at 0900hrs								Radiation				
	Max	Direction	Time	Surface	5 cm	10 cm	20 cm	50 cm	100 cm	150 cm	300 cm	Bright Sunshine	Possible	% Possible	Global	Diffuse
	km/h			°C	°C	°C	°C	°C	°C	°C	°C	hours	hours		MJ/m ²	MJ/m ²
1	33.4	ENE	19:23	-7.5	-1.0	-0.5	0.0	2.5	4.5	6.0	7.5	0.0	8.1	0.0	1.5	1.3
2	30.6	ESE	9:27	-8.0	-1.0	-0.5	0.0	2.0	4.5	5.5	7.5	0.0	8.1	0.0	1.6	1.4
3	38.5	W	22:48	-11.0	-1.0	-0.5	0.0	2.0	4.5	5.5	7.5	0.0	8.0	0.0	1.3	1.1
4	39.6	WNW	3:45	-9.5	-1.0	-0.5	-0.5	2.0	4.5	5.5	7.5	1.1	8.0	13.8	2.4	1.7
5	46.8	NNE	8:50	-8.5	-1.5	-1.0	-0.5	2.0	4.5	5.5	7.5	0.0	8.0	0.0	2.1	1.8
6	34.2	W	2:52	-10.5	-1.5	-1.0	-0.5	2.0	4.5	5.5	7.0	2.5	7.9	31.5	2.5	1.5
7	21.7	SSE	16:44	-19.0	-2.0	-1.5	-0.5	2.0	4.5	5.5	7.0	7.3	7.9	92.4	5.0	0.9
8	20.3	SW	17:48	-20.0	-2.5	-2.0	-1.0	2.0	4.5	5.5	7.0	7.4	7.9	93.9	4.9	0.9
9	24.4	SW	9:13	-14.5	-3.0	-2.5	-1.5	1.5	4.0	5.5	7.0	7.3	7.9	92.9	4.1	0.7
10	28.2	WSW	17:44	-9.5	-3.5	-2.5	-2.0	1.5	4.0	5.5	7.0	1.2	7.8	15.3	2.7	1.9
11	31.2	SSE	20:34	-6.0	-2.5	-2.5	-2.0	1.0	4.0	5.0	7.0	5.8	7.8	74.2	4.7	1.1
12	33.7	WSW	13:56	-4.5	-2.5	-2.0	-1.5	1.0	4.0	5.0	7.0	2.0	7.8	25.6	2.1	1.4
13	27.7	WSW	22:23	-7.0	-2.5	-2.0	-1.5	1.0	4.0	5.0	7.0	6.3	7.8	81.0	2.9	1.3
14	30.3	SSW	20:36	-6.0	-2.5	-2.0	-1.5	1.0	4.0	5.0	7.0	5.6	7.8	72.1	3.4	1.0
15	52.2	WNW	16:35	4.0	-1.5	-1.5	-1.5	1.0	3.5	5.0	7.0	5.5	7.8	70.9	3.2	1.0
16	42.4	WNW	1:05	-11.5	-2.5	-1.5	-1.0	1.0	3.5	5.0	7.0	2.1	7.8	27.1	2.4	1.7
17	45.2	SE	1:04	-7.0	-3.5	-2.5	-2.0	1.0	3.5	5.0	6.5	2.5	7.7	32.3	2.3	1.4
18	25.3	WSW	14:43	-3.5	-3.0	-2.5	-2.0	0.5	3.5	4.5	6.5	0.5	7.7	6.5	1.9	1.5
19	26.0	WNW	6:08	-5.0	-2.5	-2.0	-2.0	0.5	3.5	4.5	6.5	5.9	7.7	76.3	3.3	1.0
20	31.5	SSE	21:21	-8.5	-3.5	-2.5	-2.0	0.5	3.5	4.5	6.5	5.0	7.7	64.8	2.8	1.5
21	55.0	WNW	13:31	2.0	-2.0	-2.0	-2.0	0.5	3.5	4.5	6.5	0.3	7.7	3.9	1.3	1.0
22	45.9	NNW	3:43	-8.5	-2.5	-2.0	-1.5	0.5	3.5	4.5	6.5	0.0	7.7	0.0	1.7	1.4
23	26.4	WNW	0:07	-18.5	-4.0	-3.0	-2.0	0.5	3.0	4.5	6.5	1.7	7.7	22.0	2.9	1.7
24	26.8	NE	11:23	-12.5	-5.0	-4.5	-3.5	0.0	3.0	4.5	6.5	3.0	7.7	38.8	3.2	1.5
25	20.1	S	23:35	-17.5	-6.5	-5.5	-4.5	0.0	3.0	4.5	6.5	2.8	7.7	36.2	3.1	1.6
26	21.2	NNE	23:10	-12.5	-6.0	-5.5	-5.0	-0.5	3.0	4.5	6.5	0.5	7.7	6.5	1.7	1.1
27	27.2	NNE	5:56	-18.0	-6.0	-5.5	-4.5	-1.0	3.0	4.0	6.5	5.4	7.8	69.7	5.0	1.1
28	29.6	SSW	23:29	-13.5	-7.5	-7.0	-5.5	-1.5	2.5	4.0	6.0	0.0	7.8	0.0	1.0	0.8
29	28.3	NE	23:58	-6.5	-6.0	-5.5	-5.0	-1.5	2.5	4.0	6.0	0.0	7.8	0.0	1.2	1.0
30	36.1	NE	5:37	-17.0	-6.5	-6.0	-5.0	-1.5	2.5	4.0	6.0	0.1	7.8	1.3	2.0	1.7
31	22.0	WSW	12:48	-29.0	-8.5	-7.5	-6.0	-2.0	2.0	4.0	6.0	7.3	7.8	93.5	4.9	0.9
Total												89.1	242.4	36.8	85.1	39.9
Mean				-10.5	-3.4	-2.8	-2.2	0.7	3.6	4.9	6.8	1981-2010 Normal for Radiation				
Extreme	55.0	WNW	13:31	1971- 2000 Normal for Soil Temperatures								85.7	242.3	35.4	100.0	50.0
Date	21			-7.1	-6.6	-5.6	-1.7	2.0	3.8	6.4	No. of Bright Sunshine days = 24					

Note: Red numbers indicate manual calculation; Red cell indicate data not available

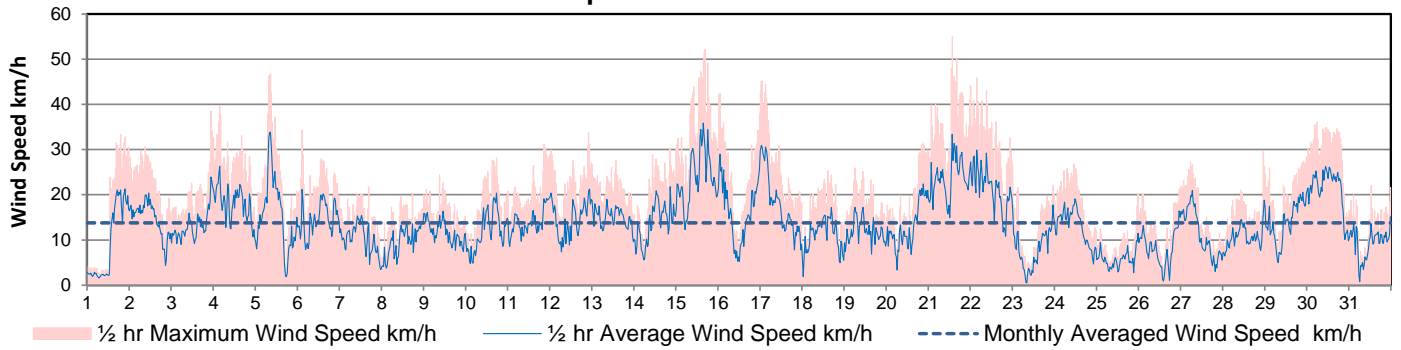
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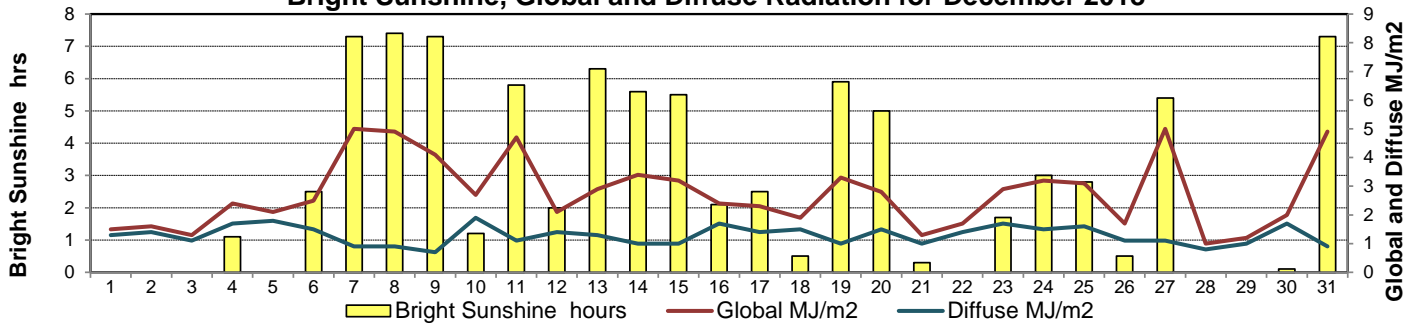
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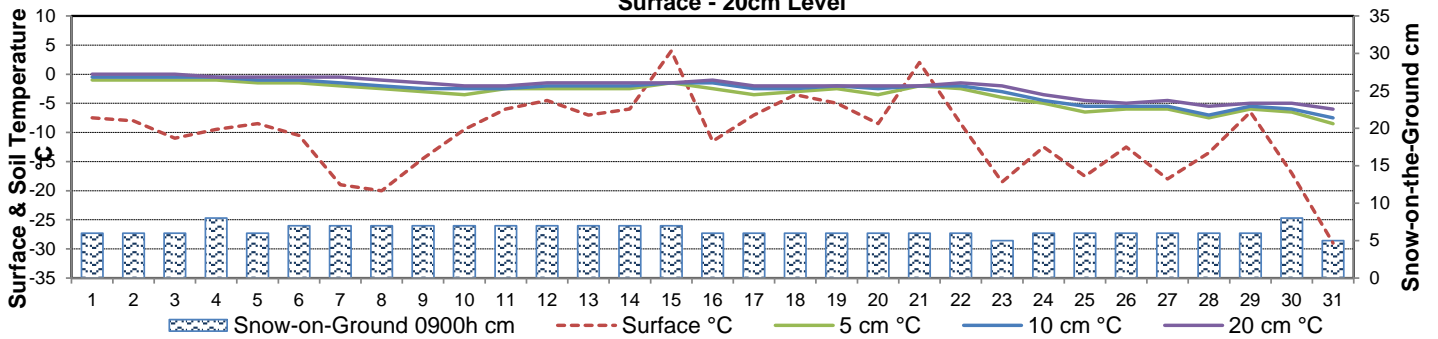
Wind Speed for December 2018



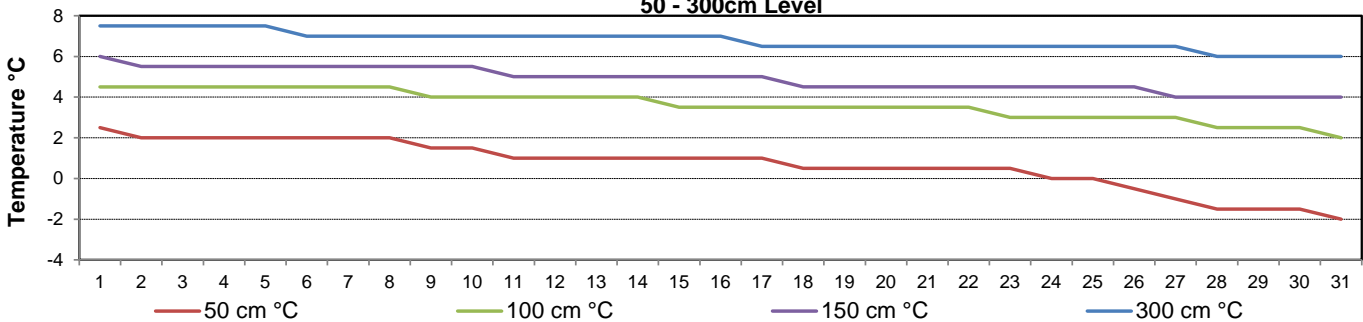
Bright Sunshine, Global and Diffuse Radiation for December 2018



**Soil Temperatures for December 2018
Surface - 20cm Level**



**Soil Temperatures for December 2018
50 - 300cm Level**





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Preliminary **DECEMBER 2018**

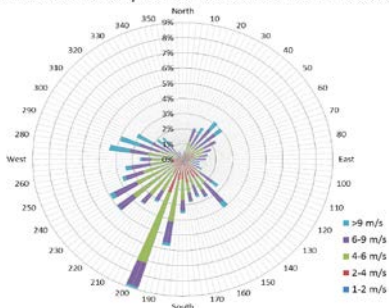
Extreme Records for December

Max/Min Temperature °C			Precipitation - Monthly mm				Wind Monthly km/h				CRS Bright Sunshine - Monthly						
S'toon Area	Date	Site	S'toon CRS	Date	S'toon Area	Date	Site	S'toon CRS	Date	S'toon Airport	Date	S'toon CRS**	Date	Hours	Year	No. of Days	Year
14.4	05/1939	SE	11.2	14/1997	59.2	1956	SA	48.2	1973	121 ^W	12/1955	89.4	1992	123.3	2006	27	1994*
-43.9	22/1892	SM	-42.2	31/1973	0.0	1906,'30	SE	0.4	2009					49.1	1973	17	1966*

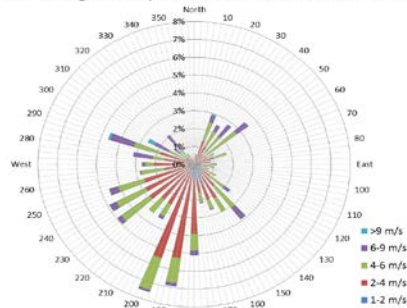
**1975 forward * more than one year

Notable Events for CRS Saskatoon - December						Saskatoon Area Stations			Glossary	
Element	Type	Day	New Record	Old Record	Year	Stn	Location	Period	Term	Definition
December 2018 was the fourth driest December at SRC CRS Saskatoon since measurements started in 1963.						SM	NWMP	c. 1892-1901	T	Trace of precipitation
Speaking of Dry... initial stats show that 2018 was the second driest on record (216.3mm). The driest year remains 2001 (165.8mm)						SE	Eby	1901-1941	Normal	30 year average beginning with the decade
Discontinuous snow cover in Saskatoon region (19 Dec 2018)						US	Univ. of Sask.	1915-1964	SOG	Depth of snow-on-the-ground in cm
						S	Saskatoon	1941-1942	na	not available
						SA	Saskatoon A	1942 -	Degree-days	
						NRC	Nat. Res. Council	1952-1966	Tm	Mean Temperature
						SRC	Sask. Res. Council	1963-	Growing	(Tm-5°C); if Tm ≤ 5°C then GDD = 0
						SWT	S'toon Water Treatment Plant	1974 -	Heating	(18°C-Tm); if Tm ≤ 18°C then HDD = 0
						SC	S'toon Central Ave	1974-1989	Cooling	(Tm-18°C); if Tm ≥ 18°C then CDD = 0
						S1	Saskatoon 1	1976-1978	Extreme Cooling	(Tm-24°C); if Tm ≥ 24°C then CDD = 0
						S2	Saskatoon 2	1977-1990	Manual snow depth:	
						K	S'toon Kernen Farm	1993-2004	Dec 4 = 7.7 cm	
						KCS	S'toon Kernen Farm CS	1996-	Dec 13 = 7.5 cm	
						RCS	Environment Canada	2008-	manual snow depth is average of three meter sticks inside the site	
						SF	Sutherland Forestry	1943-1970		

1/2 hr Maximum Wind Speed and Direction Saskatoon Dec 2018



10 minute Average Wind Speed and Direction Saskatoon Dec 2018



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