

MONTHLY METEOROLOGICAL SUMMARY

SOMMAIRE MÉTÉOROLOGIQUE MENSUEL

MONTH/MOIS

DECEMBER / DÉCEMBRE

19 90

AT/A WINNIPEG INT'L AIRPORT / AÉROPORT INTERN. DE WINNIPEG

LAT		49° 54' N		LONG:		97° 14' W		ELEVATION ALTITUDE: 239.6		METRES (ASL) MÉTRES (NMM)		STANDARD TIME USED HEURE NORMALE UTILISÉE		CENTRAL			
DATE	TEMPERATURE TEMPERATURE			DEGREE-DAYS DEGRÉS-JOURS			REL. HUMIDITY HUMIDITÉ REL.		THUNDERSTORM ORAGE	PRECIPITATION PRÉCIPITATIONS			SNOW ON GROUND NEIGE AU SOL	WIND VENT		BRIGHT SUNSHINE INSOLATION EFFECTIVE	
	MAXIMUM MAXIMALE	MINIMUM MINIMALE	MEAN MOYENNE	HEATING DE CHAUFFE	GROWING DE CROISSANCE	COOLING DE RÉFÉRIERATION	MAXIMUM MAXIMALE	MINIMUM MINIMALE		RAINFALL PLUIE (HAUTEUR)	SNOWFALL NEIGE (HAUTEUR)	TOTAL PRECIP. PRÉCIP. TOTALE		AVERAGE SPEED VITESSE MOYENNE	PREVAILING DIRECTION DIRECTION DOMINANTE		MAX 2 MIN MEAN SPEED & DIRECTION VITESSE MOYENNE MAX SUR 2 MIN & DIRECTION
	°C	°C	°C	BASE 18.0°C	BASE 5.0°C	BASE 18.0°C	%	%	mm	cm	mm	cm	km/h		km/h		
1	-9.0	-24.1	-16.6	34.6			72	54				4	12.8	W	W 20*	8.0	
2	-12.5	-26.3	-19.4	37.4			82	59			TR.	4	9.0	NE	NE 22	5.8	
3	-5.9	-12.5	-9.2	27.2			91	59			1.4	4	15.4	SE	SE 22*	0.0	
4	-2.9	-15.4	-9.2	27.2			88	66			TR.	4	31.4	SSE	S 52	0.1	
5	2.3	-12.1	-4.9	22.9			90	67				4	24.9	NW	S 44	4.3	
6	-1.4	-14.1	-7.8	25.8			92	77				4	11.2	S	S 17*	5.1	
7	2.4	-3.2	-0.4	18.4			88	72				4	14.6	W	WSW19*	6.5	
8	5.4	-4.2	0.6	17.4			88	62				3	16.7	SSW	SSW24	7.9	
9	5.1	-9.9	-2.4	20.4			86	61				TR	20.6	W	W 26*	5.5	
10	-3.2	-10.2	-6.7	24.7			93	78				TR	9.9	E	NE 19	0.0	
11	-2.6	-4.4	-3.5	21.5			97	89				3	11.5	ENE	E 20	0.0	
12	-2.5	-16.3	-9.4	27.4			97	70				13	22.5	WNW	WNW44	0.4	
13	-8.3	-20.1	-14.2	32.2			87	70			TR.	7	14.5	S	S 26*	6.9	
14	-6.6	-13.4	-10.0	28.0			92	74			TR.	7	14.3	S	S 26	7.6	
15	-5.6	-15.5	-10.6	28.6			85	53				7	12.7	S	S 19*	3.9	
16	-5.5	-16.5	-11.0	29.0			86	77			TR.	7	21.0	S	S 28*	5.4	
17	-16.4	-24.4	-20.4	38.4			68	57				7	8.6	NW	WNW19*	7.0	
18	-17.8	-22.5	-20.2	38.2			82	63			TR.	7	13.2	NNE	NNE22*	0.1	
19	-21.2	-25.6	-23.4	41.4			73	62			2.4	7	28.3	NNE	NNE37*	0.0	
20	-25.2	-29.1	-27.2	45.2			70	53			1.2	9	31.6	N	N 37	4.8	
21	-27.4	-32.4	-29.9	47.9			66	55			0.6	10	21.4	N	N 30	0.0	
22	-26.6	-29.0	-27.8	45.8			67	55			2.2	13	15.8	NNW	N 22	1.7	
23	-16.3	-28.4	-22.4	40.4			76	55			0.2	13	13.5	W	SSW19*	1.8	
24	-19.0	-27.6	-23.3	41.3			75	57			1.4	12	11.2	NNW	NNW41	0.0	
25	-27.4	-33.7	-30.6	48.6			63	52			TR.	13	15.3	W	W 20*	7.1	
26	-23.1	-34.7	-28.9	46.9			71	53			TR.	13	17.0	S	S 31	5.9	
27	-5.0	-23.1	-14.1	32.1			93	63			2.4	13	41.1	S	S 52	0.0	
28	-5.2	-25.8	-15.5	33.5			86	52			0.8	15	29.3	NNW	WNW44*	4.7	
29	-25.6	-32.9	-29.3	47.3			64	53			0.2	15	20.5	NNW	NNW31*	7.5	
30	-26.0	-35.3	-30.7	48.7			72	50			TR.	15	21.0	S	S 33	5.5	
31	-25.2	-30.0	-27.6	45.6			68	50			TR.	15	9.7	WNW	S 24	5.8	
MEAN MOYENNE	-11.6	-21.1	-16.4	1064.0			81	60	TOT 0		TOTAL 0.0	TOTAL 27.1	TOTAL 24.1	18.1	S DOMINANTE	MAXIMALE S 52	TOTAL 119.3
NORMAL NORMALE	-9.4	-18.6	-14.0	991.8	0.0	0.0			0		0.9	20.7	19.2		S		92.6

DEGREE-DAY SUMMARY/SOMMAIRE DE DEGRÉS JOURS

DAYS WITH TOTAL PRECIPITATION JOURS AVEC PRÉCIPITATIONS
 TOTALS mm TOTALS cm
 DAYS WITH SNOWFALL JOURS AVEC CHUTE DE NEIGE

BELOW 18°C AU-DESSOUS DE 18°C	THIS YEAR ANNEE EN COURS	PREVIOUS YEAR ANNEE PRÉCÉDENTE	NORMAL NORMALE	ABOVE 5°C AU-DESSUS DE 5°C	THIS YEAR ANNEE EN COURS	PREVIOUS YEAR ANNEE PRÉCÉDENTE	NORMAL NORMALE	02 OR MORE					02 OR MORE				
								OR MORE	OR MORE	OR MORE	OR MORE	OR MORE	OR MORE	OR MORE	OR MORE	OR MORE	OR MORE
TOTAL FOR MONTH TOTAL DU MOIS	1064.0	1172.2	991.8	TOTAL FOR MONTH TOTAL DU MOIS	0.0	0.0	0.0	13	9	5	0	0	13	9	5	0	0
ACCUMULATED SINCE JULY 1 ACCUMULÉE DEPUIS LE 1 ^{er} JUILLET	2303.3	2505.2	2279.9	ACCUMULATED SINCE APRIL 1 ACCUMULÉE DEPUIS LE 1 ^{er} AVRIL	1860.7	1972.9	1783.3	13	9	5	0	0	13	9	5	0	0

JDC 551 506

Note/Aviz 1 Climatological Day/Journee climatologique 00 01 C S.T. - 00 00 C S.T.

- 2 Normal/Normale 1951-1980
- 3 TR = Trace
- 4 M = Missing/Manquant
- 5 No entry/Pas de valeur = No occurrence/Pas d'évenement
- 6 * Indicates first of more than one prevailing direction and/or maximum 2 minute mean speed (see page 4)/Indique la premiere de plusieurs des directions dominantes et/ou la vitesse moyenne maximale sur 2 minutes (voir page 4).
- 7 C = Calm/Calm \$2.75 \$27.30 \$2.75 \$27.30
- 8 Price: single issue annual (Jan. to Dec.) /Prix: numero individuel annuel (janv. a dec.)



DRY-BULB TEMPERATURES AT: WINNIPEG INTERNATIONAL AIRPORT
 TEMPERATURES DU THERMOMETRE SEC A: AEROPORT INTERN. DE WINNIPEG

MONTH: DECEMBER
 MOIS: DECEMBRE

1990
 1990

Page 3.

Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-90	-112	-134	-157	-158	-173	-177	-176	-183	-183	-176	-170	-165	-161	-157	-159	-163	-174	-179	-185	-188	-219	-214	-209
2	-217	-231	-235	-255	-259	-257	-244	-248	-247	-237	-199	-179	-166	-159	-153	-161	-159	-152	-148	-145	-134	-134	-134	-130
3	-125	-123	-123	-122	-117	-113	-110	-106	-103	-101	-97	-90	-85	-76	-70	-62	-61	-61	-74	-72	-76	-87	-94	-107
4	-114	-121	-129	-135	-142	-150	-154	-150	-146	-138	-130	-119	-108	-84	-73	-66	-59	-52	-41	-33	-31	-39	-39	-36
5	-36	-39	-39	-33	-18	-17	-19	-7	15	-17	-30	-26	-34	-36	-36	-39	-48	-55	-61	-79	-93	-101	-101	-119
6	-110	-116	-122	-123	-125	-123	-126	-94	-75	-76	-68	-58	-52	-43	-36	-36	-36	-38	-34	-35	-32	-25	-20	-21
7	-18	-21	-11	-18	-20	-20	-26	-28	-29	-28	-16	-4	4	15	23	19	8	7	0	-5	-8	-11	-4	-11
8	-8	-22	-35	-38	-32	-10	-18	-24	-39	-27	-2	13	30	37	46	50	53	45	39	40	39	26	35	32
9	22	15	40	34	28	25	34	33	35	36	30	51	40	37	33	22	3	-8	-38	-56	-76	-85	-94	-97
10	-97	-100	-100	-101	-97	-91	-86	-83	-82	-80	-77	-71	-65	-58	-50	-43	-37	-33	-35	-36	-34	-33	-32	-34
11	-36	-39	-37	-39	-39	-41	-44	-39	-42	-39	-39	-35	-36	-34	-32	-28	-27	-28	-28	-28	-28	-26	-26	-27
12	-28	-28	-28	-26	-26	-25	-27	-32	-36	-36	-54	-68	-79	-93	-107	-118	-127	-131	-141	-148	-154	-158	-158	-157
13	-144	-130	-129	-132	-149	-168	-178	-194	-195	-194	-173	-163	-147	-137	-135	-135	-130	-128	-123	-111	-106	-109	-101	-100
14	-83	-71	-68	-67	-69	-73	-76	-83	-89	-95	-89	-83	-86	-87	-87	-85	-94	-100	-108	-116	-116	-127	-128	-114
15	-131	-135	-142	-147	-150	-151	-150	-152	-152	-148	-132	-106	-101	-93	-88	-78	-76	-79	-71	-65	-58	-58	-71	-74
16	-79	-84	-91	-96	-97	-96	-90	-101	-103	-100	-90	-83	-75	-68	-65	-58	-62	-82	-118	-128	-123	-124	-134	-152
17	-164	-184	-194	-203	-209	-217	-228	-238	-244	-238	-238	-228	-226	-221	-218	-217	-218	-217	-215	-210	-207	-209	-207	-207
18	-203	-200	-199	-197	-197	-193	-190	-189	-188	-187	-186	-183	-181	-181	-183	-181	-187	-196	-202	-199	-199	-208	-222	-218
19	-219	-228	-222	-224	-227	-215	-213	-215	-216	-216	-217	-221	-224	-222	-224	-218	-220	-224	-228	-236	-245	-249	-252	-255
20	-255	-255	-255	-257	-261	-264	-26	-262	-263	-260	-257	-264	-261	-257	-259	-263	-268	-274	-279	-284	-288	-289	-287	-289
21	-288	-289	-295	-305	-311	-318	-321	-320	-316	-318	-324	-315	-309	-300	-296	-292	-291	-290	-288	-283	-281	-278	-276	-279
22	-279	-278	-279	-277	-278	-276	-279	-281	-278	-276	-271	-267	-269	-271	-268	-269	-280	-285	-286	-283	-288	-286	-283	-283
23	-281	-279	-279	-278	-278	-283	-278	-275	-265	-256	-241	-235	-220	-206	-190	-192	-175	-181	-173	-167	-167	-170	-168	-170
24	-210	-212	-229	-231	-243	-250	-244	-238	-240	-238	-224	-213	-198	-191	-192	-195	-199	-208	-205	-215	-221	-242	-259	-268
25	-274	-279	-283	-290	-292	-303	-300	-310	-318	-309	-303	-295	-288	-282	-278	-279	-284	-292	-299	-298	-310	-310	-322	-321
26	-324	-329	-319	-313	-318	-315	-315	-316	-317	-344	-325	-298	-293	-279	-255	-251	-269	-271	-269	-264	-260	-244	-241	-235
27	-231	-207	-196	-190	-177	-176	-172	-160	-146	-132	-114	-104	-94	-83	-81	-79	-76	-74	-71	-72	-73	-72	-66	-61
28	-51	-112	-139	-152	-156	-166	-179	-189	-205	-217	-228	-228	-232	-241	-244	-250	-255	-257	-253	-256	-252	-251	-250	-254
29	-257	-258	-261	-268	-273	-279	-290	-299	-305	-309	-306	-302	-300	-296	-292	-288	-292	-299	-300	-309	-316	-320	-322	-319
30	-329	-329	-337	-337	-344	-338	-343	-343	-343	-343	-323	-309	-295	-281	-275	-266	-263	-263	-264	-270	-279	-281	-281	-277
31	-277	-275	-267	-263	-268	-273	-285	-287	-295	-298	-288	-277	-273	-273	-267	-261	-262	-276	-273	-282	-272	-261	-262	-262

Note/Avis: 1. Climatological Day/Journée climatologique 0001 C.S.T. - 0000 C.S.T.
 2. Hours are C.S.T./Les heures sont a l'heure normale de la localité
 3. Unit/Unite = 0.1°C

MONTH: DECEMBER 1990
MOIS: DECEMBRE 1990

HOURLY DOW POINT TEMPERATURE AT: WINNIPEG INTERNATIONAL AIRPORT
TEMPERATURE DE ROSEE HORAIRE A: AEROPORT INTERN. DE WINNIPEG

Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	-138	-153	-184	-215	-215	-225	-221	-221	-233	-236	-236	-234	-232	-226	-226	-229	-233	-238	-243	-245	-244	-261	-260	-264
2	-261	-272	-270	-301	-301	-294	-284	-289	-287	-280	-238	-223	-219	-220	-218	-216	-213	-210	-205	-201	-194	-188	-182	-163
3	-148	-145	-144	-142	-136	-132	-128	-125	-123	-119	-116	-110	-103	-98	-99	-118	-126	-126	-131	-133	-143	-142	-141	-147
4	-147	-150	-152	-157	-166	-192	-196	-192	-190	-187	-176	-164	-148	-110	-90	-83	-78	-77	-80	-80	-77	-75	-70	-67
5	-65	-68	-69	-64	-56	-55	-55	-48	-29	-49	-58	-52	-64	-70	-80	-83	-90	-103	-109	-124	-123	-128	-125	-139
6	-125	-135	-135	-137	-137	-136	-137	-106	-93	-94	-88	-82	-78	-73	-69	-69	-63	-63	-57	-55	-55	-54	-48	-48
7	-44	-46	-42	-45	-47	-47	-50	-52	-52	-51	-44	-36	-31	-24	-20	-21	-26	-20	-18	-26	-32	-33	-34	-40
8	-36	-45	-53	-57	-48	-38	-43	-48	-60	-51	-39	-33	-26	-18	-10	-5	-2	-5	-10	-24	-21	-23	-26	-23
9	-24	-23	-8	-7	-7	0	-13	-13	-13	-14	-13	-20	-27	-26	-27	-38	-52	-52	-59	-81	-99	-111	-125	-124
10	-121	-123	-123	-122	-119	-117	-116	-114	-110	-102	-92	-85	-80	-74	-66	-58	-54	-52	-50	-47	-48	-48	-46	-46
11	-46	-48	-46	-49	-49	-52	-54	-53	-54	-54	-53	-51	-50	-46	-43	-37	-35	-35	-34	-34	-34	-36	-36	-36
12	-33	-34	-33	-33	-31	-30	-36	-41	-45	-44	-68	-84	-95	-112	-127	-140	-150	-158	-166	-174	-179	-180	-184	-196
13	-177	-165	-164	-153	-179	-211	-216	-222	-223	-225	-206	-205	-187	-178	-177	-174	-163	-148	-143	-131	-126	-128	-122	-121
14	-106	-96	-92	-84	-85	-88	-91	-97	-103	-109	-112	-111	-118	-122	-124	-124	-129	-127	-136	-138	-137	-150	-156	-148
15	-157	-160	-168	-184	-191	-184	-182	-183	-183	-178	-162	-189	-130	-125	-121	-110	-103	-101	-97	-92	-86	-88	-94	-98
16	-101	-107	-112	-117	-119	-118	-114	-124	-126	-123	-115	-110	-105	-100	-97	-88	-93	-111	-140	-154	-151	-154	-158	-179
17	-190	-233	-249	-254	-260	-262	-276	-285	-289	-283	-282	-277	-273	-270	-268	-275	-276	-272	-268	-271	-267	-263	-260	-263
18	-253	-251	-248	-247	-247	-243	-241	-239	-238	-236	-234	-228	-225	-228	-230	-225	-231	-241	-244	-240	-240	-248	-242	-262
19	-261	-272	-265	-268	-272	-259	-260	-263	-263	-266	-264	-268	-266	-267	-267	-263	-263	-268	-270	-278	-287	-294	-298	-302
20	-301	-302	-299	-304	-307	-309	-312	-309	-311	-305	-304	-311	-309	-310	-311	-318	-324	-331	-337	-344	-344	-344	-341	-345
21	-345	-344	-352	-358	-361	-368	-372	-372	-367	-369	-374	-366	-360	-352	-348	-350	-347	-346	-343	-338	-333	-328	-327	-329
22	-326	-328	-329	-328	-328	-326	-330	-333	-331	-328	-322	-320	-321	-322	-326	-329	-341	-342	-342	-337	-339	-336	-341	-340
23	-341	-342	-341	-341	-340	-344	-340	-336	-328	-309	-289	-287	-274	-255	-242	-242	-221	-230	-221	-210	-208	-207	-204	-210
24	-262	-263	-276	-271	-285	-292	-285	-279	-282	-281	-263	-250	-236	-231	-232	-236	-239	-250	-246	-259	-272	-299	-318	-327
25	-336	-341	-343	-346	-348	-349	-347	-363	-375	-367	-362	-358	-352	-345	-340	-343	-350	-352	-354	-358	-367	-368	-370	-364
26	-373	-372	-369	-367	-371	-372	-371	-373	-374	-388	-373	-358	-351	-342	-323	-322	-335	-334	-332	-322	-317	-303	-298	-293
27	-288	-250	-237	-229	-215	-213	-209	-195	-177	-183	-131	-122	-111	-100	-96	-94	-89	-85	-84	-83	-85	-84	-77	-70
28	-63	-130	-159	-172	-182	-191	-249	-241	-260	-278	-286	-288	-294	-298	-310	-312	-317	-319	-316	-320	-306	-299	-302	-305
29	-310	-308	-313	-322	-328	-334	-346	-354	-359	-362	-360	-357	-357	-353	-348	-350	-352	-358	-357	-367	-375	-380	-383	-381
30	-378	-380	-390	-389	-395	-382	-389	-396	-393	-390	-376	-367	-357	-349	-344	-337	-330	-331	-328	-331	-332	-333	-331	-328
31	-328	-326	-316	-313	-320	-327	-338	-340	-347	-353	-345	-341	-346	-343	-336	-332	-335	-337	-338	-327	-326	-310	-315	-319

Note/Avis: 1. Climatological Day/Journée climatologique 0001 C.S.T. - 0000 C.S.T.
 2. Hours are C.S.T./Les heures sont a l'heure normale de la localité
 3. Unit/Umite = 0.1°C

Although the only temperature record set during the month was a high maximum of 5.1 on the 9th, December will be remembered as a very cold month. The month can be divided into two equal parts with the first half described as quite comfortable and the second half described as bitterly cold.

The table below illustrates the dichotomy:

	<u>High</u>	<u>Low</u>	<u>Mean</u>
1-16th Mean	-3.2	-13.6	-8.4
17-31st Mean	-20.5	-29.0	-24.8

The mean temperature ended up 2.4 degrees below normal and the temperature range during the month was 40.4 degrees.

The highest temperature was 5.4 on the 8th and the lowest was -35.3 on the 30th.

Precipitation fell exclusively as snow and was just over the normal of 19.2 mm. This is the first month since June with above normal precipitation.

Sunshine hours totalled 119.3 hours, well above the normal of 92.6 hours.

DAILY WEATHER SUMMARY FOR DECEMBER 1990

AT WINNIPEG, MANITOBA

1. Sunny. Maximum slightly below normal and the minimum well below normal. Winds light.
2. Sunny becoming cloudy by late afternoon with light snow starting late in the evening. Maximum below normal and the minimum well below normal. Winds light.
3. Overcast with light snow, snow ending by late afternoon. Maximum near normal with the minimum slightly above normal. Winds light.
4. Mainly sunny becoming overcast by late morning, with snow in the afternoon. Maximum temperature above normal with the minimum near normal. Winds light increasing to moderate gusting strong by early afternoon.
5. Sunny with cloudy periods in the morning. Maximum well above normal, minimum below normal. Winds moderate occasionally gusting to strong decreasing to light by late afternoon.
6. Sunny with cloudy periods in the late afternoon and evening. Maximum temperature above normal and the minimum slightly above normal. Winds light.
7. Sunny with a few clouds in the evening. Temperatures well above normal. Winds light.
8. Sunny. Temperatures well above normal. Winds light increasing to moderate in the late afternoon, decreasing to light in the late evening.
9. Variable cloudiness. Temperatures well above normal. Winds moderate with occasional periods of light.
10. Overcast with light snow. Maximum temperature above normal, minimum well above normal. Winds light.
11. Overcast with light snow. Maximum above normal, minimum well above normal. Winds light.
12. Overcast with light snow, clearing in the early evening. Maximum above normal, minimum near normal. Winds light increasing to moderate in the morning, decreasing to light by early evening.
13. Sunny. Temperatures near normal. Winds light, occasionally moderate starting in the afternoon.
14. Sunny. Maximum temperature slightly above normal, minimum above normal. Winds light.
15. Sunny becoming cloudy in the afternoon. Temperatures slightly above normal. Winds light.
16. Sunny becoming cloudy by early evening. Maximum temperatures slightly below normal, minimum near normal. Winds light to moderate becoming steady moderate by late afternoon.
17. Sunny becoming overcast by early evening. Temperatures below normal. Winds light.
18. Cloudy with light snow, clearing late in the afternoon. Maximum well below normal, minimum slightly below normal. Winds light.
19. Overcast with snow and blowing snow. Maximum well below normal, minimum below normal. Winds moderate increasing to moderate occasionally gusting strong in the late afternoon.
20. Overcast with snow and blowing snow, becoming sunny in the late afternoon. Temperatures well below normal. Winds moderate occasionally gusting strong.
21. Clear becoming overcast by noon, with snow starting in the early evening. Temperatures well below normal. Winds light occasionally moderate.
22. Overcast with light snow, clearing in the late afternoon. Temperatures well below normal. Winds light.
23. Increasing cloud through the day, snow starting mid-morning and continuing off and on throughout the day. Maximum below normal and minimum well below normal. Winds light.
24. Clear becoming overcast with light snow by noon, clearing in the evening. Temperatures well below normal. Winds light increasing to moderate in the evening.
25. Sunny. Temperatures well below normal. Winds light.
26. Sunny. Temperatures well below normal. Winds light increasing to moderate in the evening.
27. Cloudy with blowing snow, light snow starting in the late afternoon. Temperatures above normal. Winds moderate gusting strong occasionally gusting to gale force.
28. Sunny becoming cloudy with snow in the evening. Maximum temperature above normal, minimum below normal. Winds moderate.
29. Sunny. Temperatures well below normal. Winds moderate becoming light in the afternoon.
30. Sunny with cloudy periods in the afternoon. Temperatures well below normal. Winds light becoming moderate by noon.
31. Sunny becoming cloudy in the afternoon, clearing by early evening. Temperatures well below normal. Winds light.