ARMSTRONG (CANADA)  
Altitude: 322 m.

Latitude: 50°17'N  Longitude: 88°54'W
Temperature observation period.: 1978−1994 (17)
Rainfall observation period.: 1981−1994 (14)

<table>
<thead>
<tr>
<th>Month</th>
<th>Ti</th>
<th>Mi</th>
<th>mi</th>
<th>M'i</th>
<th>m'i</th>
<th>Pi</th>
<th>Epi (C/mm)</th>
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<td>-27.78</td>
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<td>-50.00</td>
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<tr>
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<td>-47.78</td>
<td>41.1</td>
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<tr>
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<td>-32.78</td>
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<tr>
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<td>34.44</td>
<td>-15.56</td>
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<tr>
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<td>-5.56</td>
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<td>23.33</td>
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**BIOCLIMATIC INDICES AND DIAGNOSIS**

- Thermicity index..............................(It): -424
- Compensated thermicity index.................(Itc): -73
- Simple continentality index....................(Ic): 37.2
- Diurnality index..............................(Id): 16.7
- Annual ombrothermic index.....................(Io): 7.16
- Bimonthly estival ombrothermic index.........(Ios1): 5.57
- Three-monthly estival ombrothermic index....(Ios2): 5.62
- Four-monthly estival ombrothermic index.....(Ios3): 5.83
- Annual ombro-evaporation index...............(Ioe): 2.10
- Annual positive temperature....................(Tp): 631
- Annual negative temperature................... (Tn): 717
- Estival temperature............................(Ts): 442
- Positive precipitation.........................(Pp): 452

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<th>N. of Months</th>
<th>P&gt;4T</th>
<th>P:2T-4T</th>
<th>PT-2T</th>
<th>P&lt;T</th>
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Latitudinal Belt.....: High eutemperate  
Continentalty......: Continental - High Eucontinental  
Bioclimate........: BOREAL CONTINENTAL  
Bioclimatic Belt...: LOW MESOBOREAL LOW HUMID
**ARMSTRONG (CANADA)**

Altitude: 322 m.
Latitude: 50° 17'N

**BOREAL CONTINENTAL**
LOW MESOBOREAL LOW HUMID

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<tr>
<th>Month</th>
<th>T</th>
<th>PE</th>
<th>P</th>
<th>VR</th>
<th>R</th>
<th>RE</th>
<th>DF</th>
<th>SP</th>
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<th>HC</th>
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<td>0</td>
<td>38</td>
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<td>0</td>
<td>0</td>
<td>41</td>
<td>36</td>
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<tr>
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<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
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<tr>
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<td>50</td>
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<td>58</td>
<td>0</td>
<td>15</td>
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<td>83</td>
<td>-20</td>
<td>72</td>
<td>102</td>
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<td>8</td>
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<td>52</td>
<td>58</td>
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<td>82</td>
<td>22</td>
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<td>18</td>
<td>100</td>
<td>0</td>
<td>0</td>
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<td>16</td>
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<tr>
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<td>-16.1</td>
<td>0</td>
<td>32</td>
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<td>100</td>
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<td>0</td>
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<tr>
<td>Year</td>
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<td>469</td>
<td>0</td>
<td>197</td>
<td>197</td>
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R = Reserve  VR = Variation of the reserve  RE = Real evapotranspiration
DR = Drainage  HC = Humidity coefficient  DF = Deficit  SP = Superavit

**Reserve Use**
- 12 Aug.
- 11 Nov.
- 24 Apr.

---

**ARMSTRONG (CANADA)**

Altitude: 322 m.
Latitude: 50° 17'N

<table>
<thead>
<tr>
<th>Month</th>
<th>T</th>
<th>P</th>
<th>Ic</th>
<th>Tp</th>
<th>M</th>
<th>Itc</th>
<th>Io</th>
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<tr>
<td>Jan.</td>
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<td>667</td>
<td>37.2</td>
<td>631</td>
<td>717</td>
<td>-73</td>
<td>7.2</td>
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| Feb.  | -27.8| 667| 50° 17'N 88° 54'W 17/14 y. 322 m

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**Reserve Use**
- Imbibing 12 Aug.
- Saturation 11 Nov.
- Reserve Use 24 Apr.
ARMSTRONG (CANADA)

Latitude: 50°17'N   Longitude: 88°54'W   Altitude: 322 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continality Index: [C3b]
+ Type ................: C. Continental
+ Subtype .............: 3. Eucontinental
+ Variant .............: b. High

Thermic types: [B1.D8]
+ Latitudinal zone ....: B. Temperate
+ Latitudinal belt ....: 1. High eutemperate
+ Thermic type ........: D. Geland
+ Thermic subtype .....: 8. Ultramicrothermic

Bioclimatic types: [D3.3b.7b]
+ Macrobioclimate .....: D. BOREAL
+ Bioclimate ..........: 3. CONTINENTAL
+ Bioclimatic variant : 7. HUMID
+ Thermic type.........: 3. MESOBOREAL
+ Thermic subtype......: b. LOW
+ Ombrothermic type ...: 7. HUMID
+ Ombrothermic subtype : b. LOW

Bioclimatic Classification: Bosc.Sbo.Hum

PRECIPITATION PARAMETERS

<table>
<thead>
<tr>
<th>Seasons</th>
<th>Winter Tr1-W</th>
<th>Spring Tr2-P</th>
<th>Summer Tr3-S</th>
<th>Autumn Tr4-F</th>
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<tr>
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<td>111</td>
<td>104</td>
<td>257</td>
<td>192</td>
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Seasonal rainfall rhythms:  S > F > W > P

TEMPERATURE PARAMETERS

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<td>Average warmest month [T]</td>
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<tr>
<td>Average coldest month [T]</td>
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<td>Minimum temp. warmest month [M]...</td>
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<td>Absolute Min.temp. coldest month [m']</td>
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<td>First warmest contrasted month [M]</td>
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<td>First coldest contrasted month [m]</td>
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<td>Positive temperature dryest 3 months</td>
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<tr>
<td>Positive temperature warmest 3 months</td>
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<tr>
<td>Positive temperature warmest 2 months</td>
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<td>Positive temperature warmest 1 month</td>
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<tr>
<td>Positive temperature coldest 3 months</td>
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<tr>
<td>Positive temperature coldest 2 months</td>
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### Seasonal Parameters

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<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
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- **Warmest semester**: (Sms)
- **Driest semester**: (Smd)
- **Warmest 4 months**: (Cm1)
- **Driest 4 months**: (Cmd)
- **Vegetation Activity (Pav)**
- **Ultragelid**: \([M' <= 0]\) (Pf)
- **Hypergelid**: \([M <= 0]\) (Pf)
- **Gelid**: \([T <= 0]\) (Pf)
- **Subgelid**: \([m <= 0]\) (Pf)
- **Pregelid**: \([m' <= 0]\) (Pf)
- **Agelid**: \([m' > 0]\) (Pf)
- **HiperAgelid**: \([all > 0]\) (Pf)

### Ombrotrophic Parameters

- **Annual aridity index**: \([PE/P]\) .............. \([Iar]\): 0.70
- **Mediterranean index of July**: \([PE/P]\) .............. \([Im1]\): 1.36
- **Mediterranean index of July & August**: \([PE/P]\) .............. \([Im2]\): 1.31
- **Mediterranean index of June, July & August**: \([PE/P]\) .............. \([Im3]\): 1.28

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<td>Pp(x10)</td>
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<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>495</td>
<td>828</td>
<td>912</td>
<td>836</td>
<td>917</td>
<td>528</td>
<td>*</td>
</tr>
<tr>
<td>Tp</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>67</td>
<td>131</td>
<td>164</td>
<td>147</td>
<td>89</td>
<td>33</td>
<td>*</td>
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<tr>
<td>Io (Iom)</td>
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<td>*</td>
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<td>5.57</td>
<td>5.68</td>
<td>10.3</td>
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- **Seasons**
  - **Winter**
  - **Spring**
  - **Summer**
  - **Autumn**

- **Pp(x10)/Tp**: */* */* 2576 / 442 */*
- **Io (Iot)**: *
- **Io (Iosm)**: *

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<th>June-November</th>
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<td><em>/</em></td>
<td><em>/</em></td>
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</tbody>
</table>
| Io (Iosm) | * | *

### Aridity Value Index (AVI)

- **[10xPp/TP=IO]**: 4516/631=7.16  **There is No Yearly Aridity**

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<tbody>
<tr>
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<td>828</td>
<td>912</td>
<td>836</td>
<td>917</td>
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<tr>
<td>Tp [T*10]</td>
<td>*</td>
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<td>*</td>
<td>*</td>
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<td>67</td>
<td>131</td>
<td>164</td>
<td>147</td>
<td>89</td>
<td>33</td>
<td>*</td>
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<tr>
<td>Iom [Pp/Tp]</td>
<td>!!</td>
<td>!!</td>
<td>!!</td>
<td>!1</td>
<td>!1</td>
<td>742</td>
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<td>557</td>
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<td>$5$</td>
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<td>Avm [200-Iom]</td>
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</tr>
</tbody>
</table>

- **Seasons**
  - **Winter**
  - **Spring**
  - **Summer**
  - **Autumn**

- **Pp / Tp**: */ * / * / * 2576 / 442 */ *
- **Io / Tp**: **/** 583 **
- **Avs E [Avm<200]**: *** *** *** *** *** *** ***
ARMSTRONG (CANADA)
Latitude: 50°17'N Longitude: 88°54'W Altitude: 322 m

BIOCLIMATIC INDICES I

CI of Supan (1884) \([\text{Tmax-}\text{Tmin}]\) ..................(Sp): 37.22
CI of Gorezinski (1920) \([1.7*\text{Sp}/\sin(\text{Lat})-20.4]\) ............: 61.86
CI of Conrad (1946) \([1.7*\text{Sp}/\sin(\text{Lat}+10)-14]\) ............: 58.86
+ Subcontinental \((40<\text{CI}<60)\)
CI of Currey (1974) \([\text{CI}=\text{Sp}/(1+\text{Lat}/3)]\) ...............: 2.10
+ Continental \((1.7<\text{CI}<2.3)\)

Rainfall Index of Lang (1925) \([R=\text{P}/\text{T}]\) ...............: -927.98
+ Aridity Index of Martonne (1926) \([I_a=\text{P}/(\text{T}+10)]\) .......: 71.82
+ Perhumid \((I_a>60)\)
I of Emeberger (1930) \([I=100*\text{P}/(\text{T}_{\text{max}}^2-\text{T}_{\text{min}}^2)]\) .......: -293.09
+ Aridity Index of Dantin & Revenga (1940) \([\text{DR}=100*\text{T}/\text{P}]\) ............: -0.11
+ Humid \((I>0.65)\)

Potencial Erosion I of Fournier (1960) \([K=\text{Pi}^2/\text{P}]\) .......: 12.61
+ Very low \((K<60)\)

ARMSTRONG (CANADA)
Latitude: 50°17'N Longitude: 88°54'W Altitude: 322 m

BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
+ Climate ......: B. Cold and temperate cold
+ Region ......: 11. Psacroaxeric (Axeric cold)
+ Thermic type: 8. Ultramicrothermic

Thornthwaite (1948)

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<tbody>
<tr>
<td>P-E ratio</td>
<td>0.32</td>
<td>0.34</td>
<td>0.20</td>
<td>0.22</td>
<td>0.29</td>
<td>0.41</td>
<td>0.41</td>
<td>0.39</td>
<td>0.53</td>
<td>0.35</td>
<td>0.41</td>
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<tr>
<td>T-E ratio</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>3.00</td>
<td>5.88</td>
<td>7.37</td>
<td>6.63</td>
<td>4.00</td>
<td>1.50</td>
<td>0.00</td>
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<tr>
<td>Precipitation-effectiveness: 41.27</td>
<td>Temperature-efficiency ....: 28.38</td>
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Moisture Index \([\text{MI}=100*(\text{P-PE})/\text{PE}]\) ...............: 42.07
+ B2.Humid medium-humid \((40<\text{MI}<60)\)

Index of dryness \([\text{DI}=100*\text{d}/\text{PE}]\) ...............: 0.00
+ No deficit \((0<\text{DI}<16.7)\)

Index of humidity \([\text{HI}=100*\text{s}/\text{PE}]\) ...............: 42.05
+ Strong surplus \((20<\text{HI})\)

Potential Evapotranspiration \(\text{PE} \) ...............: 469.21
+ Second microthermic \((427<\text{PE}<570)\)