

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

LENINGRAD TOWN (RUSSIA)

Altitude: 4 m.

Latitude: 59°58'N Longitude: 30°18'E

Temperature observation period.: 1984-1994 (11)

Rainfall observation period....: 1984-1994 (11)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	-10.28	-7.78	-12.78	2.78	-32.22	28.4	0.00
Feb.	-8.89	-6.11	-11.67	3.89	-37.22	23.6	0.00
Mar.	-4.17	-0.56	-7.78	12.22	-30.00	26.7	0.00
Apr.	3.34	7.78	-1.11	21.11	-20.00	35.1	26.10
May.	10.00	15.56	4.44	27.78	-6.11	34.3	83.90
Jun.	14.45	20.00	8.89	30.00	-2.22	58.7	122.67
Jul.	16.11	21.11	11.11	33.89	2.22	73.7	134.25
Aug.	15.28	20.00	10.56	31.11	1.11	71.1	110.73
Sep.	10.84	15.00	6.67	28.89	-3.89	47.8	65.78
Oct.	5.56	8.33	2.78	18.89	-11.11	63.8	29.27
Nov.	-1.11	0.56	-2.78	12.22	-23.89	33.3	0.00
Dec.	-5.84	-3.89	-7.78	5.00	-27.22	44.2	0.00
Year	3.77	7.50	0.05	18.98	-15.88	541	572.70

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	-168
Compensated thermicity index.....(Itc):	-72
Simple continentality index.....(Ic):	26.4
Diurnality index.....(Id):	11.1
Annual ombrothermic index.....(Io):	5.09
Monthly estival ombrothermic index.....(Ios1):	4.06
Bimonthly estival ombrothermic index.....(Ios2):	4.61
Threemonthly estival ombrothermic index.....(Ios3):	4.44
Fourmonthly estival ombrothermic index.....(Ios4):	4.26
Annual ombro-evaporation index.....(Ioe):	0.94
Annual positive temperature.....(Tp):	756
Annual negative temperature.....(Tn):	303
Estival temperature.....(Ts):	458
Positive precipitation.....(Pp):	385

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	6	1	0	0	5

Latitudinal Belt...: High Subtemperate

Continentalty.....: Continental - High Subcontinental

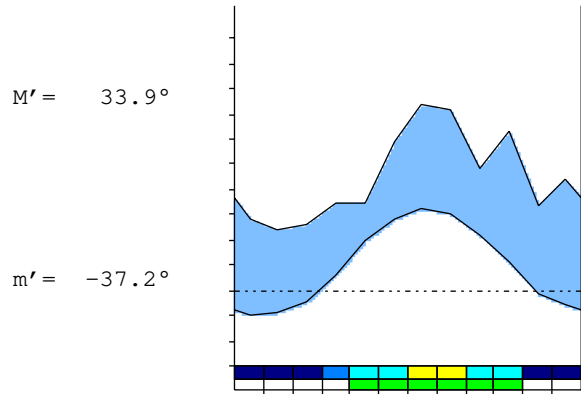
Bioclimate(Variant): TEMPERATE CONTINENTAL (HEMIBOREAL)

Bioclimatic Belt...: LOW OROTEMPERATE (HEMIBOREAL) UPPER SUBHUMID

LENINGRAD TOWN (RUSSIA)

4 m

P= 541 59° 58'N 30° 18'E 11/11 y.
 T= 3.8 ° Ic= 26.4 Tp= 756 Tn= 303
 m= -12.8 ° M= -7.8 ° Itc= -72 Io= 5.1



TEMPERATE CONTINENTAL (HEMIBOREAL)
 LOW OROTEMPERATE (HEMIBOREAL) UPPER SUBHUMID

WATER INDEX CARD

LENINGRAD TOWN (RUSSIA)

Altitude: 4 m.

Latitude: 59° 58'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	-10.3	0	28	0	100	0	0	28	17	*
Feb.	-8.9	0	24	0	100	0	0	24	20	*
Mar.	-4.2	0	27	0	100	0	0	27	24	*
Apr.	3.3	26	35	0	100	26	0	9	16	0.3
May.	10.0	84	34	-50	50	84	0	0	8	-0.5
Jun.	14.4	123	59	-50	0	109	14	0	4	-0.5
Jul.	16.1	134	74	0	0	74	61	0	2	-0.4
Aug.	15.3	111	71	0	0	71	40	0	1	-0.3
Sep.	10.8	66	48	0	0	48	18	0	1	-0.2
Oct.	5.6	29	64	35	35	29	0	0	0	1.1
Nov.	-1.1	0	33	33	68	0	0	0	0	*
Dec.	-5.8	0	44	32	100	0	0	12	6	*
Year	3.8	573	541	*	*	441	132	100	100	*

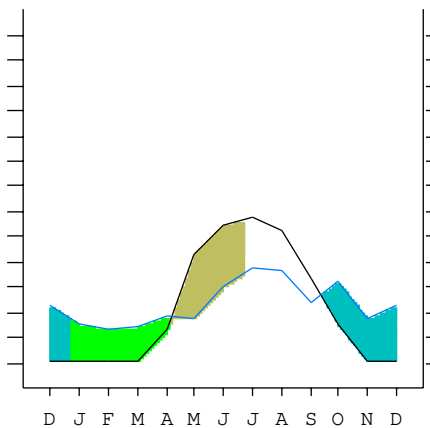
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

LENINGRAD TOWN (RUSSIA)

59°58'N 30°18'E 4 m 11/11 y.

T= 3.8 Ic= 26.4 TEMPERATE CONTINENTAL (HEMIBOREAL)
 m= -12.8 Tp= 756 LOW OROTEMPERATE (HEMIBOREAL)
 M= -7.8 Tn= 303 UPPER SUBHUMID
 M' = 33.9 Itc= -72
 m' = -37.2 Io= 5.1
 P= 541 mm ———
 PE= 573 mm ———

Imbibing	11 Sep.
Saturation	22 Dec.
Reserve Use	5 Apr.
Deficit	24 Jun.



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Latitude: 59°58'N Longitude: 30°18'E Altitude: 4 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [C2b]
 + Type: C. Continental
 + Subtype: 2. Subcontinental
 + Variant: b. High
 Thermic types [B2.C6]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 2. High Subtemperate
 + Thermic type: C. Cold
 + Thermic subtype: 6. Cool
 Bioclimatic types [C2.5b.6a]
 + Macrobioclimate: C. TEMPERATE
 + Bioclimate: 2. CONTINENTAL
 + Bioclimatic variant .: HEMIBOREAL
 + Thermic type.....: 5. OROTEMPERATE (HEMIBOREAL)
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : a. UPPER
 Bioclimatic ClassificationTeco(Hem).Ote.Shu.Suc

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 349
 Coldest semester of the year.....(Psw): 191
 Warmest four months period of the year.....(Pcm1): 251
 Following warmest four months period.....(Pcm2): 170
 Positive precipitation dryest 3 months.....(Ppd): 0
 Positive precipitation dryest 2 months.....(Ppd2): 0
 Positive precipitation dryest 1 month.....(Ppd1): 0
 Positive precipitation warmest 3 months.....(Pps): 204
 Positive precipitation warmest 2 months.....(Pps2): 145
 Positive precipitation warmest 1 month.....(Pps1): 74
 Positive precipitation coldest 3 months.....(Ppw): 0
 Positive precipitation coldest 2 months.....(Ppw2): 0
 Positive precipitation coldest 1 month.....(Ppw1): 0

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	96	96	203	144

Seasonal rainfall rhythms: S > F > P > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 16.1
 Average coldest month [T].....(Tmin): -10.3
 Maximum temp. warmest month [M].....(Tmmax): 21.1
 Minimum temp. coldest month [m].....(Tmmin): -12.8
 Absolute Max.temp. warmest month [M'].....(Tamax): 33.9
 Absolute Min.temp. coldest month [m'].....(Tamin): -37.2
 First warmest contrasted month [M].....(Tcmax): 15.6 (5)
 First coldest contrasted month [m].....(Tcmin): 4.4 (5)
 Estival temperature.....(Ts): 458
 Positive temperature dryest 3 months.....(Tpd): 0
 Positive temperature dryest 2 months.....(Tpd2): 0
 Positive temperature dryest 1 month.....(Tpd1): 0
 Positive temperature warmest 3 months.....(Tps): 458
 Positive temperature warmest 2 months.....(Tps2): 314
 Positive temperature warmest 1 month.....(Tps1): 161
 Positive temperature coldest 3 months.....(Tpw): 0
 Positive temperature coldest 2 months.....(Tpw2): 0
 Positive temperature coldest 1 month.....(Tpw1): 0

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SEASONAL PARAMETERS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Warmest semester...(Sms)					o	o	o	o	o	o		
Dryest semester....(Smd)	o	o	o	o							o	o
Warmest 4 months...(Cm1)						o	o	o	o			
Dryest 4 months....(Cmd)	o	o	o	o								
Vegetation Activity(Pav)					o	o	o	o	o	o		
Ultragelid...[M'<=0] (Pf)												
Hypergelid...[M <=0] (Pf)	o	o	o									o
Gelid.....[T <=0] (Pf)	o	o	o								o	o
Subgelid.....[m <=0] (Pf)	o	o	o	o							o	o
Pregelid.....[m'<=0] (Pf)	o	o	o	o	o	o			o	o	o	o
Agelid.....[m'> 0] (Pf)							o	o				
HiperAgelid..[all>0] (Pf)							o	o				

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.06
 Mediterranean index of July.[PE/P].....(Im1): 1.82
 Mediterranean index of July & August.....(Im2): 1.69
 Mediterranean index of June, July & August....(Im3): 1.81

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	*	*	*	*	351	343	587	737	711	478	638	*
Tp	*	*	*	*	33	100	145	161	153	108	56	*
Io (Iom)	*	*	*	*	10.5	3.43	4.06	4.57	4.65	4.41	11.5	*
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	*/*			*/*			2035 / 458			*/*		
Io (Iot)	*			*			4.439			*		
Semesters	December-May						June-November					
Pp(x10)/Tp	*/*						*/*					
Io (Iosm)	*						*					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 3845/756=5.09 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	*	*	*	*	351	343	587	737	711	478	638	*
Tp [T*10]	*	*	*	*	33	100	145	161	153	108	56	*
Iom [Pp/Tp]	!!	!!	!!	!!	\$\$	343	406	457	465	441	\$\$!!
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	* / *			* / *			2035 / 458			* / *		
Iot [Pp/Tp]	**			**			444			**		
Avs E [Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 26.39
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 31.42
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 33.75
 + Oceanic (20<CI<40)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 1.26
 + Subcontinental (1.1<CI<1.7)
 Rainfall Index of Lang (1925) [R=P/T]: 143.26
 + Temperate humid (160>R>100)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 39.25
 + Humid (60>Ia>30)
 I of Emberger (1930) [Q=100*P/(Tmmax²-Tmmin²)]: 191.53
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 0.70
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 0.94
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 10.05
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: B. Cold and temperate cold
 + Region: 11. Psicroaxeric (Axeric cold)
 + Thermic type: 6. Microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.23	0.18	0.21	0.22	0.17	0.27	0.33	0.32	0.24	0.40	0.26	0.37
T-E ratio	0.00	0.00	0.00	1.50	4.50	6.50	7.25	6.88	4.88	2.50	0.00	0.00
Precipitation-effectiveness: 31.99						Temperature-efficiency: 34.01						
Moisture Index [MI=100*(P-PE)/PE]: -5.59 + C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE]: 23.00 + Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]: 17.41 + Moderate surplus (10<HI<20)												
Potential Evapotranspiration PE: 572.70 + First mesothermic (570<PE<712)												

