

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

GUNTIN (ESP LUGO)

Altitude: 550 m.

Latitude: 42°54'N Longitude: 7°40'W

Temperature observation period.: 1950-1969 (20)

Rainfall observation period....: 1950-1969 (20)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	6.60	9.50	3.60	14.40	0.50	126.0	19.93
Feb.	6.90	10.50	3.30	16.50	0.60	127.0	21.30
Mar.	9.20	13.40	5.10	21.00	1.20	160.0	37.71
Apr.	10.20	15.10	5.40	23.20	1.80	123.0	46.99
May.	13.00	18.50	7.60	27.50	3.00	109.0	71.19
Jun.	15.80	21.60	10.00	30.50	4.70	60.0	91.86
Jul.	18.00	24.40	11.70	33.10	7.60	17.0	108.63
Aug.	17.90	24.30	11.50	33.10	7.70	45.0	100.36
Sep.	16.20	21.70	10.70	30.00	5.50	72.0	76.96
Oct.	13.40	18.50	8.30	25.50	3.30	94.0	55.70
Nov.	8.30	11.80	4.90	17.00	1.10	143.0	26.39
Dec.	6.60	9.50	3.70	14.50	0.80	152.0	18.94
Year	11.84	16.57	7.15	23.86	3.15	1228	675.97

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	249
Compensated thermicity index.....(Itc):	249
Simple continentality index.....(Ic):	11.4
Diurnality index.....(Id):	12.8
Annual ombrothermic index.....(Io):	8.64
Monthly estival ombrothermic index.....(Ios1):	0.94
Bimonthly estival ombrothermic index.....(Ios2):	1.73
Three monthly estival ombrothermic index.....(Ios3):	2.36
Four monthly estival ombrothermic index.....(Ios4):	3.57
Annual ombro-evaporation index.....(Ioe):	0.48
Annual positive temperature.....(Tp):	1421
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	517
Positive precipitation.....(Pp):	1228

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	9	2	0	1	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - High Semihyperoceanic

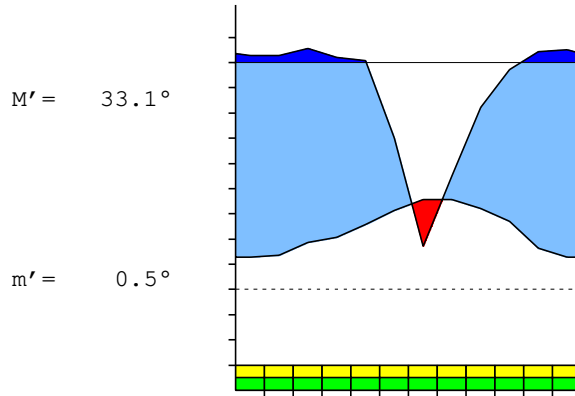
Bioclimate(Variant): TEMPERATE OCEANIC (SUBMEDITERRANEAN)

Bioclimatic Belt...: LOW MESOTEMPERATE LOW HUMID

GUNTIN (ESP LUGO)

550 m

P= 1228      42° 54'N      7° 40'W      20/20 y.  
 T= 11.8°      Ic= 11.4      Tp= 1421      Tn= 0  
 m= 3.6°      M= 9.5°      Itc= 249      Io= 8.6



TEMPERATE OCEANIC (SUBMEDITERRANEAN)  
 LOW MESOTEMPERATE LOW HUMID

WATER INDEX CARD

GUNTIN (ESP LUGO)

Altitude: 550 m.

Latitude: 42° 54'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	6.6	20	126	0	100	20	0	106	93	5.3
Feb.	6.9	21	127	0	100	21	0	106	100	4.9
Mar.	9.2	38	160	0	100	38	0	122	111	3.2
Apr.	10.2	47	123	0	100	47	0	76	93	1.6
May.	13.0	71	109	0	100	71	0	38	66	0.5
Jun.	15.8	92	60	-32	68	92	0	0	33	-0.3
Jul.	18.0	109	17	-68	0	85	23	0	16	-0.8
Aug.	17.9	100	45	0	0	45	55	0	8	-0.5
Sep.	16.2	77	72	0	0	72	5	0	4	0.0
Oct.	13.4	56	94	38	38	56	0	0	2	0.6
Nov.	8.3	26	143	62	100	26	0	55	28	4.4
Dec.	6.6	19	152	0	100	19	0	133	81	7.0
Year	11.8	676	1228	*	*	592	84	636	636	*

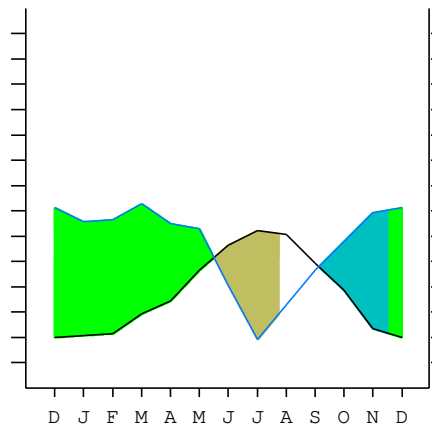
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

GUNTIN (ESP LUGO)

42°54'N    7°40'W    550 m 20/20 y.

T= 11.8      Ic= 11.4      TEMPERATE OCEANIC (SUBMEDITERRANEAN)  
 m= 3.6      Tp= 1421      LOW MESOTEMPERATE  
 M= 9.5      Tn= 0      LOW HUMID  
 M' = 33.1    Itc= 249  
 m' = 0.5      Io= 8.6  
 P= 1228      mm    ———  
 PE= 676      mm    ———

Imbibing	4 Sep.
Saturation	16 Nov.
Reserve Use	17 May.
Deficit	23 Jul.



GUNTIN (ESP LUGO)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1a]  
 + Type .....: B. Oceanic  
 + Subtype .....: 1. Semihyperoceanic  
 + Variant .....: a. High

Thermic types [B1.B4]  
 + Latitudinal zone .....: B. Temperate  
 + Latitudinal belt .....: 1. Low eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 4. Temperate

Bioclimatic types [C3b.3b.7b]  
 + Macrobioclimate .....: C. TEMPERATE  
 + Bioclimate .....: 3. OCEANIC  
 + Bioclimatic variant .: b. SUBMEDITERRANEAN  
 + Thermic type.....: 3. MESOTEMPERATE  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 7. HUMID  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....: Teco (Sbm) .Mte.Hum

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 397  
 Coldest semester of the year.....(Psw): 831  
 Warmest four months period of the year.....(Pcm1): 194  
 Following warmest four months period.....(Pcm2): 515  
 Positive precipitation dryest 3 months.....(Ppd): 122  
 Positive precipitation dryest 2 months.....(Ppd2): 62  
 Positive precipitation dryest 1 month.....(Ppd1): 17  
 Positive precipitation warmest 3 months.....(Pps): 134  
 Positive precipitation warmest 2 months.....(Pps2): 62  
 Positive precipitation warmest 1 month.....(Pps1): 17  
 Positive precipitation coldest 3 months.....(Ppw): 405  
 Positive precipitation coldest 2 months.....(Ppw2): 278  
 Positive precipitation coldest 1 month.....(Ppw1): 126

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	405	392	122	309

Seasonal rainfall rhythms: W > P > F > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 18.0  
 Average coldest month [T].....(Tmin): 6.6  
 Maximum temp. warmest month [M].....(Tmmax): 24.4  
 Minimum temp. coldest month [m].....(Tmmin): 3.3  
 Absolute Max.temp. warmest month [M'].....(Tamax): 33.1  
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.5  
 First warmest contrasted month [M].....(Tcmax): 24.3 (8)  
 First coldest contrasted month [m].....(Tcmin): 11.5 (8)  
 Estival temperature.....(Ts): 517  
 Positive temperature dryest 3 months.....(Tpd): 517  
 Positive temperature dryest 2 months.....(Tpd2): 359  
 Positive temperature dryest 1 month.....(Tpd1): 180  
 Positive temperature warmest 3 months.....(Tps): 521  
 Positive temperature warmest 2 months.....(Tps2): 359  
 Positive temperature warmest 1 month.....(Tps1): 180  
 Positive temperature coldest 3 months.....(Tpw): 201  
 Positive temperature coldest 2 months.....(Tpw2): 132  
 Positive temperature coldest 1 month.....(Tpw1): 66

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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	o	o	o	o	o	o
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)												
Pregelid.....[m' <=0] (Pf)												
Agelid.....[m' > 0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o
HiperAgelid..[all>0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.55  
 Mediterranean index of July.[PE/P].....(Im1): 6.39  
 Mediterranean index of July & August.....(Im2): 3.37  
 Mediterranean index of June, July & August....(Im3): 2.47

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1520	1260	1270	1600	1230	1090	600	170	450	720	940	1430
Tp	66	66	69	92	102	130	158	180	179	162	134	83
Io (Iom)	23.0	19.1	18.4	17.4	12.1	8.38	3.80	0.94	2.51	4.44	7.01	17.2
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	4050 / 201			3920 / 324			1220 / 517			3090 / 379		
Io (Iot)	20.15			12.10			2.360			8.153		
Semesters	December-May						June-November					
Pp(x10)/Tp	7970 / 525						4310 / 896					
Io (Iosm)	15.18						4.810					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 12280/1421=8.64 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1520	1260	1270	1600	1230	1090	600	170	450	720	940	1430
Tp [T*10]	66	66	69	92	102	130	158	180	179	162	134	83
Iom [Pp/Tp]	\$\$	\$\$	\$\$	\$\$	\$\$	838	380	94	251	444	701	\$\$
Avm [200-Iom]	***	***	***	***	***	***	***	106	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	4050 / 201			3920 / 324			1220 / 517			3090 / 379		
Iot [Pp/Tp]	2015			1210			236			815		
Avs E[Avm<200]	***			***			***			***		
Weak upper arid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 11.40  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 8.07  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 10.30  
 + Hyperoceanic (-20<CI<20)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 0.75  
 + Oceanic (0.6<CI<1.1)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 103.70  
 + Temperate humid (160>R>100)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 56.22  
 + Humid (60>Ia>30)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....: 210.10  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 0.96  
 + Humid (2>DR>0)  
 Aridity Index of UNEP [I=P/PE] .....: 1.82  
 + Humid (I>0.65)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 20.85  
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....: A. Warm and temperate warm  
 + Region .....: 3. Termoxeroteric (Mediterranean warm)  
 + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.81	0.81	0.97	0.70	0.56	0.26	0.06	0.18	0.32	0.47	0.88	1.00
T-E ratio	2.97	3.11	4.14	4.59	5.85	7.11	8.10	8.05	7.29	6.03	3.74	2.97
Precipitation-effectiveness: 70.17						Temperature-efficiency .....: 63.94						
Moisture Index [MI=100*(P-PE)/PE] .....: 81.67 + B4.Humid highest-humid (80<MI<100)												
Index of dryness [DI=100*d/PE] .....: 12.40 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....: 94.06 + Strong surplus (20<HI)												
Potential Evapotranspiration PE .....: 675.97 + First mesothermic (570<PE<712)												

