

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

CHARLEROI-GOSSEL (BELGIUM)

Altitude: 187 m.

Latitude: 50°27'N Longitude: 4°27'E

Temperature observation period.: 1987-1994 (8)

Rainfall observation period....: 1964-1994 (31)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	1.39	3.33	-0.56	15.00	-13.89	72.9	4.86
Feb.	0.83	3.33	-1.67	16.11	-17.78	56.9	3.02
Mar.	4.72	8.33	1.11	21.11	-12.22	61.0	23.47
Apr.	8.06	12.22	3.89	27.78	-5.00	65.0	45.82
May.	11.67	16.11	7.22	30.00	-1.11	69.1	77.47
Jun.	14.45	18.89	10.00	30.00	2.22	74.9	98.63
Jul.	16.67	21.11	12.22	33.89	6.11	82.0	115.04
Aug.	16.39	20.56	12.22	30.00	6.11	80.0	103.15
Sep.	14.17	17.78	10.56	31.11	2.22	67.1	75.34
Oct.	10.00	13.33	6.67	22.22	-5.00	80.0	45.74
Nov.	5.00	7.22	2.78	18.89	-7.22	79.0	18.56
Dec.	2.78	4.44	1.11	16.11	-13.89	87.1	9.36
Year	8.84	12.22	5.46	24.35	-4.95	875	620.46

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	105
Compensated thermicity index.....(Itc):	105
Simple continentality index.....(Ic):	15.8
Diurnality index.....(Id):	8.9
Annual ombrothermic index.....(Io):	8.24
Monthly estival ombrothermic index.....(Ios1):	4.88
Bimonthly estival ombrothermic index.....(Ios2):	4.90
Three monthly estival ombrothermic index.....(Ios3):	4.99
Four monthly estival ombrothermic index.....(Ios4):	5.17
Annual ombro-evaporation index.....(Ioe):	1.07
Annual positive temperature.....(Tp):	1061
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	475
Positive precipitation.....(Pp):	875

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	12	0	0	0	0

Latitudinal Belt...: High eutemperate

Continentalty.....: Oceanic - Low Euoceanic

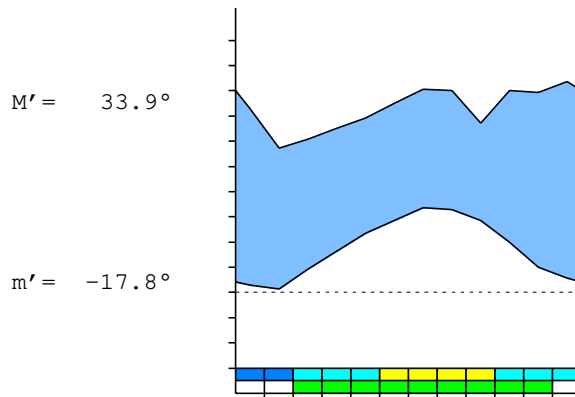
Bioclimate.....: TEMPERATE OCEANIC

Bioclimatic Belt...: UPPER SUPRATEMPERATE LOW HUMID

CHARLEROI-GOSSEL (BELGIUM)

187 m

P= 875 50° 27'N 4° 27'E 8/31 y.
 T= 8.8° Ic= 15.8 Tp= 1061 Tn= 0
 m= -1.7° M= 3.3° Itc= 105 Io= 8.2



TEMPERATE OCEANIC
 UPPER SUPRATEMPERATE LOW HUMID

WATER INDEX CARD CHARLEROI-GOSSEL (BELGIUM)
 Altitude: 187 m. Latitude: 50° 27'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	1.4	5	73	0	100	5	0	68	53	14.0
Feb.	0.8	3	57	0	100	3	0	54	53	17.8
Mar.	4.7	23	61	0	100	23	0	38	45	1.5
Apr.	8.1	46	65	0	100	46	0	19	32	0.4
May.	11.7	77	69	-8	92	77	0	0	16	-0.1
Jun.	14.4	99	75	-24	68	99	0	0	8	-0.2
Jul.	16.7	115	82	-33	35	115	0	0	4	-0.2
Aug.	16.4	103	80	-23	12	103	0	0	2	-0.2
Sep.	14.2	75	67	-8	3	75	0	0	1	-0.1
Oct.	10.0	46	80	34	38	46	0	0	1	0.7
Nov.	5.0	19	79	60	98	19	0	0	0	3.2
Dec.	2.8	9	87	2	100	9	0	76	38	8.3
Year	8.8	620	875	*	*	620	0	255	255	*

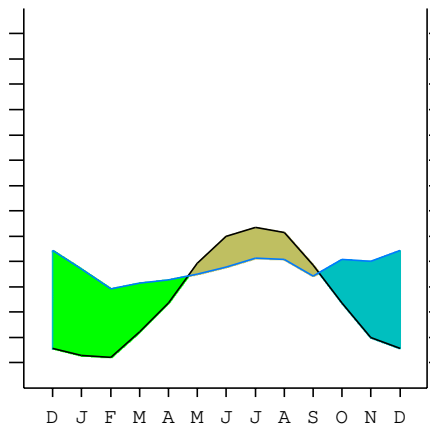
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

CHARLEROI-GOSSEL (BELGIUM)

50°27'N 4°27'E 187 m 8/31 y.

T= 8.8 Ic= 15.8 TEMPERATE OCEANIC
 m= -1.7 Tp= 1061 UPPER SUPRATEMPERATE
 M= 3.3 Tn= 0 LOW HUMID
 M' = 33.9 Itc= 105
 m' = -17.8 Io= 8.2
 P= 875 mm ———
 PE= 620 mm ———

Imbibing	6 Sep.
Saturation	1 Dec.
Reserve Use	21 Apr.
Deficit	



CHARLEROI-GOSSEL (BELGIUM)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2b]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: b. Low
 Thermic types [B1.B5]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. High eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 5. Subtemperate
 Bioclimatic types [C3.4a.7b]
 + Macrobioclimate: C. TEMPERATE
 + Bioclimate: 3. OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 4. SUPRATEMPERATE
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 7. HUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Teco.Ste.Hum

CHARLEROI-GOSSEL (BELGIUM)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 453
 Coldest semester of the year.....(Psw): 422
 Warmest four months period of the year.....(Pcm1): 304
 Following warmest four months period.....(Pcm2): 319
 Positive precipitation dryest 3 months.....(Ppd): 183
 Positive precipitation dryest 2 months.....(Ppd2): 118
 Positive precipitation dryest 1 month.....(Ppd1): 57
 Positive precipitation warmest 3 months.....(Pps): 237
 Positive precipitation warmest 2 months.....(Pps2): 162
 Positive precipitation warmest 1 month.....(Pps1): 82
 Positive precipitation coldest 3 months.....(Ppw): 217
 Positive precipitation coldest 2 months.....(Ppw2): 130
 Positive precipitation coldest 1 month.....(Ppw1): 57

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	216	195	236	226

Seasonal rainfall rhythms: S > F > W > P

CHARLEROI-GOSSEL (BELGIUM)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 16.7
 Average coldest month [T].....(Tmin): 0.8
 Maximum temp. warmest month [M].....(Tmmax): 21.1
 Minimum temp. coldest month [m].....(Tmmin): -1.7
 Absolute Max.temp. warmest month [M'].....(Tamax): 33.9
 Absolute Min.temp. coldest month [m'].....(Tamin): -17.8
 First warmest contrasted month [M].....(Tcmax): 16.1 (5)
 First coldest contrasted month [m].....(Tcmin): 7.2 (5)
 Estival temperature.....(Ts): 475
 Positive temperature dryest 3 months.....(Tpd): 136
 Positive temperature dryest 2 months.....(Tpd2): 55
 Positive temperature dryest 1 month.....(Tpd1): 8
 Positive temperature warmest 3 months.....(Tps): 475
 Positive temperature warmest 2 months.....(Tps2): 331
 Positive temperature warmest 1 month.....(Tps1): 167
 Positive temperature coldest 3 months.....(Tpw): 50
 Positive temperature coldest 2 months.....(Tpw2): 22
 Positive temperature coldest 1 month.....(Tpw1): 8

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

CHARLEROI-GOSSEL (BELGIUM)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.71
 Mediterranean index of July.[PE/P].....(Im1): 1.40
 Mediterranean index of July & August.....(Im2): 1.35
 Mediterranean index of June, July & August....(Im3): 1.34

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	871	729	569	610	650	691	749	820	800	671	800	790
Tp	28	14	8	47	81	117	145	167	164	142	100	50
Io (Iom)	31.3	52.4	68.6	12.9	8.06	5.92	5.18	4.92	4.88	4.74	8.00	15.8
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	2169 / 50			1951 / 245			2369 / 475			2261 / 292		
Io (Iot)	43.38			7.980			4.986			7.751		
Semesters	December-May						June-November					
Pp(x10)/Tp	4120 / 295						4630 / 767					
Io (Iosm)	13.99						6.038					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 8750/1061=8.24 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	871	729	569	610	650	691	749	820	800	671	800	790
Tp [T*10]	28	14	8	47	81	117	145	167	164	142	100	50
Iom [Pp/Tp]	\$\$	\$\$	\$\$	\$\$	806	592	518	492	488	474	800	\$\$
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	2169 / 50			1951 / 245			2369 / 475			2261 / 292		
Iot [Pp/Tp]	\$\$			798			499			775		
Avs E[Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 15.84
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	14.52
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	16.95
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	0.89
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T]	98.94
+ Temperate warm (100>R>60)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	46.43
+ Humid (60>Ia>30)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	197.59
+ Humid (Q>90)	
I of Dantin & Revenga (1940) [DR=100*T/P]	1.01
+ Humid (2>DR>0)	
Aridity Index of UNEP [I=P/PE]	1.41
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	8.67
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 5. Meso-microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.55	0.43	0.39	0.37	0.35	0.35	0.37	0.36	0.31	0.44	0.51	0.63
T-E ratio	0.63	0.37	2.12	3.63	5.25	6.50	7.50	7.38	6.38	4.50	2.25	1.25
Precipitation-effectiveness: 50.48						Temperature-efficiency						47.76
Moisture Index [MI=100*(P-PE)/PE]												41.03
+ B2.Humid medium-humid (40<MI<60)												
Index of dryness [DI=100*d/PE]												0.00
+ No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE]												41.02
+ Strong surplus (20<HI)												
Potential Evapotranspiration PE												620.46
+ First mesothermic (570<PE<712)												

