

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

CARAVELAS (BRAZIL)

Altitude: 4 m.

Latitude: 17°39'S Longitude: 39°15'W

Temperature observation period.: 1982-1994 (13)

Rainfall observation period....: 1980-1994 (15)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	25.84	30.00	21.67	32.78	12.22	106.4	142.36
Feb.	26.12	30.56	21.67	35.00	11.11	120.1	128.77
Mar.	25.56	29.44	21.67	36.11	11.11	201.2	128.08
Apr.	25.00	28.89	21.11	32.78	12.78	220.0	110.81
May.	23.33	27.22	19.44	32.22	11.11	147.1	90.29
Jun.	21.95	26.11	17.78	31.11	8.89	134.4	71.49
Jul.	21.11	25.00	17.22	37.22	7.22	124.7	66.45
Aug.	21.67	26.11	17.22	28.89	12.22	70.9	74.80
Sep.	22.50	26.67	18.33	30.00	10.00	113.0	83.61
Oct.	23.89	27.78	20.00	31.11	11.11	111.0	108.84
Nov.	24.72	28.33	21.11	40.00	11.11	212.9	119.32
Dec.	25.56	29.44	21.67	32.22	11.11	218.7	139.06
Year	23.94	27.96	19.91	33.29	10.83	1780	1263.9

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	662
Compensated thermicity index.....(Itc):	662
Simple continentality index.....(Ic):	5.0
Diurnality index.....(Id):	8.9
Annual ombrothermic index.....(Io):	6.20
Monthly dry ombrothermic index.....(Iod1):	3.27
Bimonthly dry ombrothermic index.....(Iod2):	4.16
Three monthly dry ombrothermic index.....(Iod3):	4.33
Four monthly dry ombrothermic index.....(Iod4):	4.71
Annual ombro-evaporation index.....(Ioe):	1.54
Annual positive temperature.....(Tp):	2873
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	681
Positive precipitation.....(Pp):	1780

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	11	1	0	0	0

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - High Euhyperoceanic

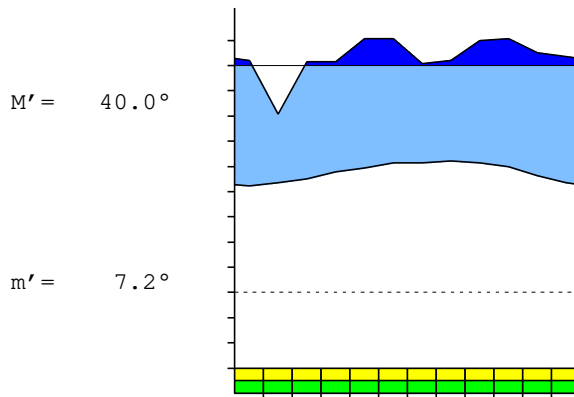
Bioclimate(Variant): TROPICAL PLUVIAL (HYGROPHYTIC)

Bioclimatic Belt...: LOW THERMOTROPICAL LOW HUMID

CARAVELAS (BRAZIL)

4 m

P= 1780 17° 39'S 39° 15'W 13/15 y.
 T= 23.9° Ic= 5.0 Tp= 2873 Tn= 0
 m= 17.2° M= 25.0° Itc= 662 Io= 6.2



TROPICAL PLUVIAL (HYGROPHYTIC)
 LOW THERMOTROPICAL LOW HUMID

WATER INDEX CARD

CARAVELAS (BRAZIL)

Altitude: 4 m.

Latitude: 17° 39'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	21.1	66	125	0	100	66	0	58	60	0.8
Aug.	21.7	75	71	-4	96	75	0	0	30	0.0
Sep.	22.5	84	113	4	100	84	0	25	28	0.3
Oct.	23.9	109	111	0	100	109	0	2	15	0.0
Nov.	24.7	119	213	0	100	119	0	94	54	0.7
Dec.	25.6	139	219	0	100	139	0	80	67	0.5
Jan.	25.8	142	106	-36	64	142	0	0	33	-0.2
Feb.	26.1	129	120	-9	55	129	0	0	17	0.0
Mar.	25.6	128	201	45	100	128	0	28	23	0.5
Apr.	25.0	111	220	0	100	111	0	109	66	0.9
May.	23.3	90	147	0	100	90	0	57	61	0.6
Jun.	22.0	71	134	0	100	71	0	63	62	0.8
Year	23.9	1264	1780	*	*	1264	0	517	517	*

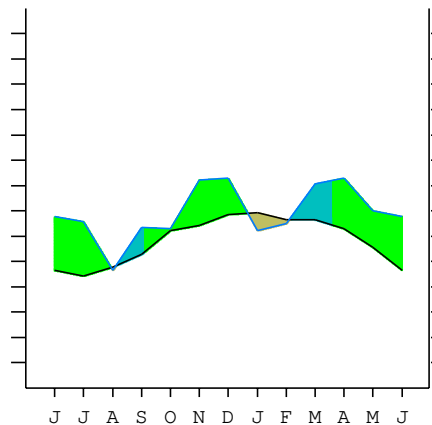
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

CARAVELAS (BRAZIL)

17°39'S 39°15'W 4 m 13/15 y.

T= 23.9 Ic= 5.0 TROPICAL PLUVIAL (HYGROPHYTIC)
 m= 17.2 Tp= 2873 LOW THERMOTROPICAL
 M= 25.0 Tn= 0 LOW HUMID
 M' = 40.0 Itc= 662
 m' = 7.2 Io= 6.2
 P= 1780 mm ———
 PE= 1264 mm ———

Imbibing	4 Feb.
Saturation	19 Mar.
Reserve Use	21 Dec.
Deficit	



CARAVELAS (BRAZIL)

Latitude: 17°39'S Longitude: 39°15'W Altitude: 4 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A2a]
 + Type: A. Hyperoceanic
 + Subtype: 2. Euhyperoceanic
 + Variant: a. High
 Thermic types [A2.A2]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 2. Warm
 Bioclimatic types [A5.2b.7b]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 5. PLUVIAL
 + Bioclimatic variant ..:
 + Thermic type.....: 2. THERMOTROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 7. HUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Trhd.Ttr.Hum

CARAVELAS (BRAZIL)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 1079
 Coldest semester of the year.....(Psw): 701
 Warmest four months period of the year.....(Pcm1): 646
 Following warmest four months period.....(Pcm2): 626
 Positive precipitation dryest 3 months.....(Ppd): 295
 Positive precipitation dryest 2 months.....(Ppd2): 184
 Positive precipitation dryest 1 month.....(Ppd1): 71
 Positive precipitation warmest 3 months.....(Pps): 428
 Positive precipitation warmest 2 months.....(Pps2): 227
 Positive precipitation warmest 1 month.....(Pps1): 120
 Positive precipitation coldest 3 months.....(Ppw): 330
 Positive precipitation coldest 2 months.....(Ppw2): 196
 Positive precipitation coldest 1 month.....(Ppw1): 125

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	330	436	445	568

Tropical rainfall rhythms: 2 > 1 > 4 > 3

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.1
 Average coldest month [T].....(Tmin): 21.1
 Maximum temp. warmest month [M].....(Tmmax): 30.6
 Minimum temp. coldest month [m].....(Tmmin): 17.2
 Absolute Max.temp. warmest month [M'].....(Tamax): 40.0
 Absolute Min.temp. coldest month [m'].....(Tamin): 7.2
 First warmest contrasted month [M].....(Tcmax): 30.6 (2)
 First coldest contrasted month [m].....(Tcmin): 21.7 (2)
 Dry station temperature.....(Td): 681
 Positive temperature dryest 3 months.....(Tpd): 681
 Positive temperature dryest 2 months.....(Tpd2): 442
 Positive temperature dryest 1 month.....(Tpd1): 217
 Positive temperature warmest 3 months.....(Tps): 775
 Positive temperature warmest 2 months.....(Tps2): 520
 Positive temperature warmest 1 month.....(Tps1): 261
 Positive temperature coldest 3 months.....(Tpw): 647
 Positive temperature coldest 2 months.....(Tpw2): 428
 Positive temperature coldest 1 month.....(Tpw1): 211

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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): 0.71
 Mediterranean index of January.....(Im1): No
 Mediterranean index of January & February.....(Im2): No
 Mediterranean index of December to February...(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	2187	1064	1201	2012	2200	1471	1344	1247	709	1130	1110	2129
Tp	256	258	261	256	250	233	220	211	217	225	239	247
Io (Iom)	8.56	4.12	4.60	7.87	8.80	6.31	6.12	5.91	3.27	5.02	4.65	8.61
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	4452 / 775			5683 / 739			3300 / 647			4369 / 711		
Io (Iot)	5.743			7.691			5.098			6.144		
Semesters	December-May						June-November					
Pp(x10)/Tp	10135 / 1514						7669 / 1358					
Io (Iosm)	6.694						5.646					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 17804/2873=6.20 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	2187	1064	1201	2012	2200	1471	1344	1247	709	1130	1110	2129
Tp [T*10]	256	258	261	256	250	233	220	211	217	225	239	247
Iom [Pp/Tp]	856	412	460	787	880	631	612	591	327	502	465	861
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	4452 / 775			5683 / 739			3300 / 647			4369 / 711		
Iot [Pp/Tp]	574			769			510			614		
Avs E[Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	5.01
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		7.69
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		4.35
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)]		0.73
+ Oceanic (0.6<CI<1.1)		
Rainfall Index of Lang (1925) [R=P/T]		74.38
+ Temperate warm (100>R>60)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		52.46
+ Humid (60>Ia>30)		
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]		279.33
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P]		1.34
+ 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]		27.18
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 2. Macrothermic

Thornthwaite (1948)													
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
P-E ratio	0.39	0.44	0.79	0.89	0.59	0.55	0.52	0.27	0.45	0.43	0.86	0.87	
T-E ratio	11.63	11.75	11.50	11.25	10.50	9.88	9.50	9.75	10.13	10.75	11.12	11.50	
Precipitation-effectiveness:	70.39						Temperature-efficiency						129.26
Moisture Index [MI=100*(P-PE)/PE]												40.87	
+ 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]												40.87	
+ Strong surplus (20<HI)													
Potential Evapotranspiration PE												1263.87	
+ Forth mesothermic (997<PE<1440)													

