

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

MALANGE (ANGOLA)

Altitude: 1169 m.

Latitude: 9°31'S Longitude: 16°20'E

Temperature observation period.: 1981-1994 (14)

Rainfall observation period....: 1981-1994 (14)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	22.23	27.78	16.67	32.22	13.33	83.8	95.77
Feb.	22.23	27.78	16.67	33.89	11.11	137.2	86.01
Mar.	22.50	28.33	16.67	32.22	8.89	193.0	95.86
Apr.	21.95	27.78	16.11	31.11	11.67	165.1	85.15
May.	21.39	29.44	13.33	31.67	4.44	17.8	81.63
Jun.	19.17	28.89	9.44	31.67	4.44	1.3	59.59
Jul.	19.44	29.44	9.44	32.22	2.78	0.0	64.20
Aug.	21.11	30.00	12.22	33.33	5.56	5.1	79.86
Sep.	22.22	29.44	15.00	32.78	10.56	50.8	88.58
Oct.	22.22	28.33	16.11	32.78	12.78	127.0	93.89
Nov.	21.67	27.22	16.11	31.67	11.67	203.2	87.56
Dec.	21.67	27.22	16.11	31.11	11.67	149.9	91.73
Year	21.48	28.47	14.49	32.22	9.07	1134	1009.8

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	598
Compensated thermicity index.....(Itc):	598
Simple continentality index.....(Ic):	3.3
Diurnality index.....(Id):	20.0
Annual ombrothermic index.....(Io):	4.40
Monthly dry ombrothermic index.....(Iod1):	No
Bimonthly dry ombrothermic index.....(Iod2):	0.03
Three monthly dry ombrothermic index.....(Iod3):	0.11
Four monthly dry ombrothermic index.....(Iod4):	0.30
Annual ombro-evaporation index.....(Ioe):	3.72
Annual positive temperature.....(Tp):	2578
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	597
Positive precipitation.....(Pp):	1134

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

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - Low Ultrahyperoceanic

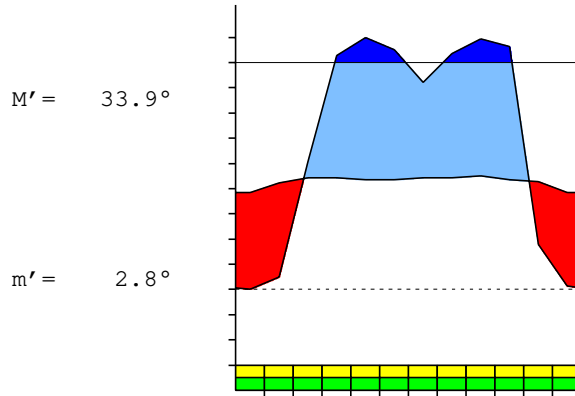
Bioclimate(Variant): TROPICAL PLUVISEASONAL (PLUVISEROTIN, SUBXEROPHYTIC)

Bioclimatic Belt...: LOW THERMOTROPICAL LOW SUBHUMID

MALANGE (ANGOLA)

1169 m

P= 1134 9° 31'S 16° 20'E 14/14 y.
 T= 21.5° Ic= 3.3 Tp= 2578 Tn= 0
 m= 9.4° M= 28.9° Itc= 598 Io= 4.4



TROPICAL PLUVISEASONAL (PLUVISEROTIN)
 LOW THERMOTROPICAL LOW SUBHUMID

WATER INDEX CARD MALANGE (ANGOLA)
 Altitude: 1169 m. Latitude: 9° 31'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	19.4	64	0	0	0	0	64	0	9	-1.0
Aug.	21.1	80	5	0	0	5	75	0	4	-0.9
Sep.	22.2	89	51	0	0	51	38	0	2	-0.4
Oct.	22.2	94	127	33	33	94	0	0	1	0.3
Nov.	21.7	88	203	67	100	88	0	49	25	1.3
Dec.	21.7	92	150	0	100	92	0	58	42	0.6
Jan.	22.2	96	84	-12	88	96	0	0	21	-0.1
Feb.	22.2	86	137	12	100	86	0	39	30	0.5
Mar.	22.5	96	193	0	100	96	0	97	64	1.0
Apr.	22.0	85	165	0	100	85	0	80	72	0.9
May.	21.4	82	18	-64	36	82	0	0	36	-0.7
Jun.	19.2	60	1	-36	0	37	22	0	18	-0.9
Year	21.5	1010	1134	*	*	811	199	323	323	*

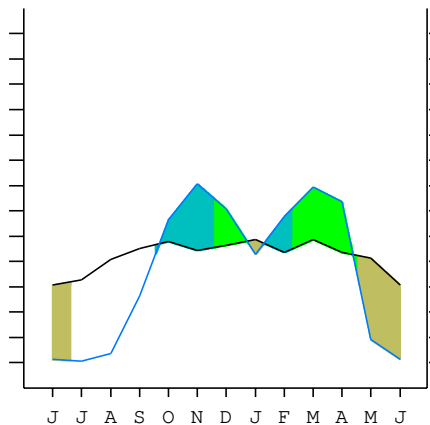
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

MALANGE (ANGOLA)

9°31'S 16°20'E 1169 m 14/14 y.

T= 21.5 Ic= 3.3 TROPICAL PLUVISEASONAL (PLUVISEROTIN)
 m= 9.4 Tp= 2578 LOW THERMOTROPICAL
 M= 28.9 Tn= 0 LOW SUBHUMID
 M' = 33.9 Itc= 598
 m' = 2.8 Io= 4.4
 P= 1134 mm ———
 PE= 1010 mm ———

Imbibing	6 Jan.
Saturation	8 Feb.
Reserve Use	17 Apr.
Deficit	19 Jun.



MALANGE (ANGOLA)

Latitude: 9°31'S Longitude: 16°20'E Altitude: 1169 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A1b]
 + Type: A. Hyperoceanic
 + Subtype: 1. Ultrahyperoceanic
 + Variant: b. Low
 Thermic types [A2.A2]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 2. Warm
 Bioclimatic types [A4e.2b.6b]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant .: e. PLUVISEROTIN, SUBXEROPHYTIC
 + Thermic type.....: 2. THERMOTROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Trde (Pse).Ttr.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 894
 Coldest semester of the year.....(Psw): 240
 Warmest four months period of the year.....(Pcm1): 579
 Following warmest four months period.....(Pcm2): 24
 Positive precipitation dryest 3 months.....(Ppd): 6
 Positive precipitation dryest 2 months.....(Ppd2): 1
 Positive precipitation dryest 1 month.....(Ppd1): 0
 Positive precipitation warmest 3 months.....(Pps): 414
 Positive precipitation warmest 2 months.....(Pps2): 330
 Positive precipitation warmest 1 month.....(Pps1): 193
 Positive precipitation coldest 3 months.....(Ppw): 6
 Positive precipitation coldest 2 months.....(Ppw2): 1
 Positive precipitation coldest 1 month.....(Ppw1): 1

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	6	381	370	375

Tropical rainfall rhythms: 4 > 2 > 1 > 3

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 22.5
 Average coldest month [T].....(Tmin): 19.2
 Maximum temp. warmest month [M].....(Tmmax): 30.0
 Minimum temp. coldest month [m].....(Tmmin): 9.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 33.9
 Absolute Min.temp. coldest month [m'].....(Tamin): 2.8
 First warmest contrasted month [M].....(Tcmax): 29.4 (7)
 First coldest contrasted month [m].....(Tcmin): 9.4 (7)
 Dry station temperature.....(Td): 597
 Positive temperature dryest 3 months.....(Tpd): 597
 Positive temperature dryest 2 months.....(Tpd2): 386
 Positive temperature dryest 1 month.....(Tpd1): 194
 Positive temperature warmest 3 months.....(Tps): 670
 Positive temperature warmest 2 months.....(Tps2): 447
 Positive temperature warmest 1 month.....(Tps1): 225
 Positive temperature coldest 3 months.....(Tpw): 597
 Positive temperature coldest 2 months.....(Tpw2): 386
 Positive temperature coldest 1 month.....(Tpw1): 192

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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): 0.89
 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)	1499	838	1372	1930	1651	178	13	0	51	508	1270	2032
Tp	217	222	222	225	220	214	192	194	211	222	222	217
Io (Iom)	6.92	3.77	6.17	8.58	7.52	0.83	0.07	0.00	0.24	2.29	5.72	9.38
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	3709 / 661			3759 / 658			64 / 597			3810 / 661		
Io (Iot)	5.609			5.709			0.107			5.763		
Semesters	December-May						June-November					
Pp(x10)/Tp	7468 / 1320						3874 / 1258					
Io (Iosm)	5.659						3.079					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 11342/2578=4.40 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1499	838	1372	1930	1651	178	13	0	51	508	1270	2032
Tp [T*10]	217	222	222	225	220	214	192	194	211	222	222	217
Iom [Pp/Tp]	692	377	617	858	752	83	7	0	24	229	572	938
Avm [200-Iom]	***	***	***	***	***	117	193	200	176	***	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	3709 / 661			3759 / 658			64 / 597			3810 / 661		
Iot [Pp/Tp]	561			571			11			576		
Avs E[Avm<200]	***			***			569			***		
Lower ultrahyperarid [2]						Upper ultrahyperarid [1]						
Lower hyperarid [1]						Weak upper arid [1]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 3.33
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 13.84
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 2.94
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.80
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 52.79
 + Semiarid (60>R>40)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 36.03
 + Humid (60>Ia>30)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 139.87
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 1.89
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 1.12
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 36.40
 + 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: 2. Macrothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.32	0.56	0.81	0.69	0.06	0.00	0.00	0.01	0.19	0.51	0.88	0.63
T-E ratio	10.00	10.00	10.13	9.88	9.63	8.63	8.75	9.50	10.00	10.00	9.75	9.75
Precipitation-effectiveness:	46.70					Temperature-efficiency: 116.01						
Moisture Index [MI=100*(P-PE)/PE]: 12.32 + C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE]: 19.69 + Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]: 32.01 + Strong surplus (20<HI)												
Potential Evapotranspiration PE: 1009.82 + Forth mesothermic (997<PE<1440)												

