

# Phytosociological Research Center

www.globalbioclimatics.org

## Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

MOCAMEDES (ANGOLA)

Altitude: 43 m.

Latitude: 15°12'S Longitude: 12°9'E

Temperature observation period.: 1976-1994 (19)

Rainfall observation period....: 1973-1994 (22)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	22.22	26.11	18.33	32.78	13.89	7.6	101.40
Feb.	24.17	28.33	20.00	34.44	14.44	10.2	107.44
Mar.	24.73	28.89	20.56	35.56	12.22	17.8	121.27
Apr.	23.34	27.78	18.89	38.89	11.67	12.7	99.23
May.	20.00	25.00	15.00	37.78	10.56	1.3	69.84
Jun.	18.06	22.22	13.89	38.33	8.33	1.3	53.11
Jul.	16.67	20.00	13.33	29.44	6.67	1.3	45.68
Aug.	17.50	21.11	13.89	28.33	8.33	1.3	53.65
Sep.	18.61	22.22	15.00	27.78	8.89	1.3	60.49
Oct.	19.72	23.33	16.11	31.11	12.22	1.3	73.84
Nov.	21.39	25.56	17.22	32.22	11.11	2.5	88.84
Dec.	21.95	26.11	17.78	33.33	12.22	2.5	98.62
Year	20.70	24.72	16.67	33.33	10.88	61	973.41

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	540
Compensated thermicity index.....(Itc):	540
Simple continentality index.....(Ic):	8.1
Diurnality index.....(Id):	10.0
Annual ombrothermic index.....(Io):	0.25
Monthly dry ombrothermic index.....(Iod1):	0.06
Bimonthly dry ombrothermic index.....(Iod2):	0.07
Three monthly dry ombrothermic index.....(Iod3):	0.07
Four monthly dry ombrothermic index.....(Iod4):	0.21
Annual ombro-evaporation index.....(Ioe):	6.83
Annual positive temperature.....(Tp):	2484
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	547
Positive precipitation.....(Pp):	61

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

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - High Subhyperoceanic

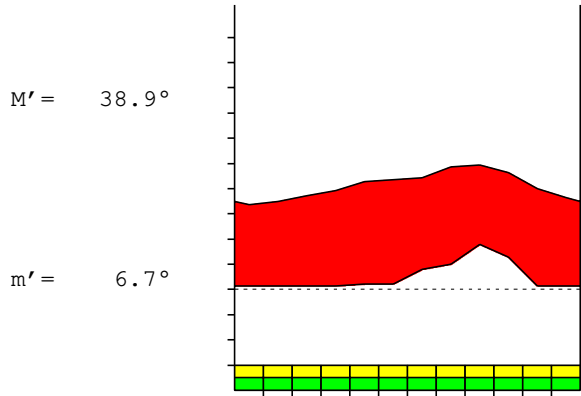
Bioclimate(Variant): TROPICAL DESERTIC (PLUVISEROTIN, HYPERARID)

Bioclimatic Belt...: UPPER THERMOTROPICAL LOW HYPERARID

MOCAMEDES (ANGOLA)

43 m

P= 61 15° 12'S 12° 9'E 19/22 y.  
 T= 20.7° Ic= 8.1 Tp= 2484 Tn= 0  
 m= 13.3° M= 20.0° Itc= 540 Io= 0.2



TROPICAL DESERTIC (PLUVISEROTIN)  
 UPPER THERMOTROPICAL LOW HYPERARID

WATER INDEX CARD

MOCAMEDES (ANGOLA)

Altitude: 43 m.

Latitude: 15° 12'S

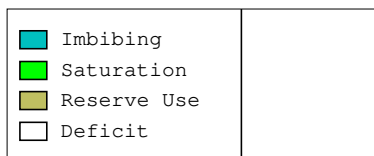
(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	16.7	46	1	0	0	1	44	0	0	-0.9
Aug.	17.5	54	1	0	0	1	52	0	0	-0.9
Sep.	18.6	60	1	0	0	1	59	0	0	-0.9
Oct.	19.7	74	1	0	0	1	73	0	0	-0.9
Nov.	21.4	89	3	0	0	3	86	0	0	-0.9
Dec.	22.0	99	3	0	0	3	96	0	0	-0.9
Jan.	22.2	101	8	0	0	8	94	0	0	-0.9
Feb.	24.2	107	10	0	0	10	97	0	0	-0.9
Mar.	24.7	121	18	0	0	18	103	0	0	-0.8
Apr.	23.3	99	13	0	0	13	87	0	0	-0.8
May.	20.0	70	1	0	0	1	69	0	0	-0.9
Jun.	18.1	53	1	0	0	1	52	0	0	-0.9
Year	20.7	973	61	*	*	61	912	0	0	*

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

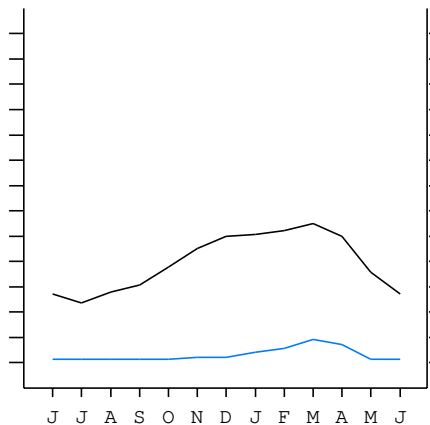
MOCAMEDES (ANGOLA)

15°12'S 12°9'E 43 m 19/22 y.

T= 20.7 Ic= 8.1 TROPICAL DESERTIC (PLUVISEROTIN)  
 m= 13.3 Tp= 2484 UPPER THERMOTROPICAL  
 M= 20.0 Tn= 0 LOW HYPERARID  
 M' = 38.9 Itc= 540  
 m' = 6.7 Io= 0.2  
 P= 61 mm  
 PE= 973 mm



All over the year,  
 there is hydric deficit



MOCAMEDES (ANGOLA)

Latitude: 15°12'S Longitude: 12°9'E Altitude: 43 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A3a]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 3. Subhyperoceanic  
 + 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 [A2e.2a.2b]  
 + Macrobioclimate .....: A. TROPICAL  
 + Bioclimate .....: 2. DESERTIC  
 + Bioclimatic variant .: e. PLUVISEROTIN, HYPERARID  
 + Thermic type.....: 2. THERMOTROPICAL  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 2. HYPERARID  
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....: Trps (Pse).Ttr.Har

MOCAMEDES (ANGOLA)

Latitude: 15°12'S Longitude: 12°9'E Altitude: 43 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 53  
 Coldest semester of the year.....(Psw): 8  
 Warmest four months period of the year.....(Pcm1): 48  
 Following warmest four months period.....(Pcm2): 5  
 Positive precipitation dryest 3 months.....(Ppd): 4  
 Positive precipitation dryest 2 months.....(Ppd2): 3  
 Positive precipitation dryest 1 month.....(Ppd1): 1  
 Positive precipitation warmest 3 months.....(Pps): 41  
 Positive precipitation warmest 2 months.....(Pps2): 28  
 Positive precipitation warmest 1 month.....(Pps1): 18  
 Positive precipitation coldest 3 months.....(Ppw): 4  
 Positive precipitation coldest 2 months.....(Ppw2): 3  
 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	3	5	20	31

Tropical rainfall rhythms: 2 > 1 > 4 > 3

MOCAMEDES (ANGOLA)

Latitude: 15°12'S Longitude: 12°9'E Altitude: 43 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.7  
 Average coldest month [T].....(Tmin): 16.7  
 Maximum temp. warmest month [M].....(Tmmax): 28.9  
 Minimum temp. coldest month [m].....(Tmmin): 13.3  
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.9  
 Absolute Min.temp. coldest month [m'].....(Tamin): 6.7  
 First warmest contrasted month [M].....(Tcmax): 25.0 (5)  
 First coldest contrasted month [m].....(Tcmin): 15.0 (5)  
 Dry station temperature.....(Td): 547  
 Positive temperature dryest 3 months.....(Tpd): 547  
 Positive temperature dryest 2 months.....(Tpd2): 381  
 Positive temperature dryest 1 month.....(Tpd1): 200  
 Positive temperature warmest 3 months.....(Tps): 722  
 Positive temperature warmest 2 months.....(Tps2): 489  
 Positive temperature warmest 1 month.....(Tps1): 247  
 Positive temperature coldest 3 months.....(Tpw): 522  
 Positive temperature coldest 2 months.....(Tpw2): 342  
 Positive temperature coldest 1 month.....(Tpw1): 167

MOCAMEDES (ANGOLA)

Latitude: 15°12'S Longitude: 12°9'E Altitude: 43 m

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

MOCAMEDES (ANGOLA)

Latitude: 15°12'S Longitude: 12°9'E Altitude: 43 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 15.93  
 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)	25	76	102	178	127	13	13	13	13	13	13	25
Tp	220	222	242	247	233	200	181	167	175	186	197	214
Io (Iom)	0.11	0.34	0.42	0.72	0.54	0.07	0.07	0.08	0.07	0.07	0.07	0.12
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	203 / 683			318 / 681			39 / 522			51 / 597		
Io (Iot)	0.297			0.467			0.075			0.085		
Semesters	December-May						June-November					
Pp(x10)/Tp	521 / 1364						90 / 1119					
Io (Iosm)	0.382						0.080					

MOCAMEDES (ANGOLA)

Latitude: 15°12'S Longitude: 12°9'E Altitude: 43 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 611/2484=0.25 Lower hyperarid (3) [2132]

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	25	76	102	178	127	13	13	13	13	13	13	25
Tp [T*10]	220	222	242	247	233	200	181	167	175	186	197	214
Iom [Pp/Tp]	11	34	42	72	54	7	7	8	7	7	7	12
Avm [200-Iom]	189	166	158	128	146	194	193	192	193	193	193	188
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	203 / 683			318 / 681			39 / 522			51 / 597		
Iot [Pp/Tp]	30			47			7			9		
Avs E[Avm<200]	512			467			578			575		
Lower ultrahyperarid [8]						Upper ultrahyperarid [2]						
Lower hyperarid [1]						Upper hyperarid [1]						
Strong lower arid [2]						Weak lower arid [1]						
Strong upper arid [1]												

MOCAMEDES (ANGOLA)

Latitude: 15°12'S Longitude: 12°9'E Altitude: 43 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp):	8.06
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....		31.86
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....		18.18
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....		1.33
+ Subcontinental (1.1<CI<1.7)		
Rainfall Index of Lang (1925) [R=P/T] .....		2.95
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....		1.99
+ Extremely arid -desert- (5>Ia>0)		
I of Emberger (1930) [Q=100*P/(Tmmax <sup>2</sup> -Tmmin <sup>2</sup> )] .....		9.30
+ Arid (30>Q>0)		
I of Dantin & Revenga (1940) [DR=100*T/P] .....		33.87
+ Extremely arid (DR>6)		
Aridity Index of UNEP [I=P/PE] .....		0.06
+ Arid (0.2>Im>0.05)		
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....		5.19
+ Very low (K<60)		

MOCAMEDES (ANGOLA)

Latitude: 15°12'S Longitude: 12°9'E Altitude: 43 m

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	0.02	0.03	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
T-E ratio	10.00	10.88	11.13	10.50	9.00	8.13	7.50	7.88	8.37	8.87	9.63	9.88
Precipitation-effectiveness: 1.80						Temperature-efficiency .....						111.76
Moisture Index [MI=100*(P-PE)/PE] .....												-93.72
+ E.Dry (-110<MI<-66.7)												
Index of dryness [DI=100*d/PE] .....												93.72
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												973.41
+ Third mesothermic (855<PE<997)												

