



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES



ESTACIÓN METEOROLÓGICA ALCÁZARES

CÓDIGO: EMM-13

MARZO DE 2011

RESUMEN DIARIO Y MENSUAL DE VARIABLES METEOROLÓGICAS

Variables Día	Temperatura del Aire (°C)			V.V. (m/s)		P.B. (HPa)	Humedad Relativa (%)			LI. (mm)	Radiación Solar (W/m ²)		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	17.8	15.0	13.8	4.0	1.2	805.8	96.0	91.6	84.0	49.0	1069.0	202.1	1.5
2	19.1	15.0	13.4	4.5	0.8	806.1	97.0	93.2	82.0	61.2	1354.0	202.6	1.5
3	20.9	16.1	13.6	5.4	1.2	805.3	96.0	87.6	77.0	0.0	1086.0	348.2	2.7
4	22.1	17.3	14.4	4.5	1.3	804.2	93.0	83.6	72.0	6.2	1167.0	405.9	3.2
5	21.2	16.9	14.2	3.6	0.9	804.5	95.0	85.5	69.0	23.6	1369.0	347.5	2.7
6	20.4	15.9	13.8	3.6	0.8	805.6	95.0	88.3	68.0	9.4	1376.0	268.6	1.9
7	21.0	17.1	14.6	4.0	0.7	804.3	92.0	84.2	70.0	0.8	809.0	221.7	1.7
8	21.7	17.1	14.9	4.9	1.0	804.5	96.0	87.2	68.0	3.0	1276.0	319.8	2.4
9	20.4	15.8	13.7	4.5	1.0	806.7	97.0	90.5	71.0	18.4	1357.0	306.5	2.2
10	19.3	15.3	12.6	4.9	0.9	808.8	96.0	87.3	72.0	3.2	571.0	248.6	1.8
11	19.2	16.2	13.7	3.6	1.0	807.9	93.0	83.6	74.0	0.0	1280.0	279.1	2.2
12	22.8	17.3	13.8	4.5	0.8	806.8	95.0	82.3	63.0	0.0	1197.0	420.4	3.4
13	23.1	17.7	14.2	7.6	1.1	805.8	91.0	78.2	57.0	0.0	1120.0	553.0	4.4
14	22.9	17.8	13.7	4.9	1.3	805.1	88.0	72.7	53.0	0.0	1158.0	547.7	4.4
15	22.1	17.4	13.9	4.9	1.4	805.6	86.0	76.8	63.0	2.4	1197.0	432.1	3.6
16	23.1	17.3	13.9	3.6	1.2	806.0	95.0	84.6	60.0	30.6	1151.0	357.0	2.9
17	21.6	17.2	15.1	2.7	0.5	804.7	97.0	89.1	63.0	0.6	962.0	221.0	1.7
18	21.2	16.9	14.9	3.6	0.8	804.3	98.0	91.3	75.0	12.2	791.0	280.2	1.9
19	20.3	16.8	14.6	4.5	1.1	804.1	95.0	88.1	76.0	1.6	622.0	193.9	1.6
20	17.8	15.8	14.3	2.7	0.4	805.4	97.0	93.6	89.0	1.8	594.0	156.2	1.1
21	20.7	15.9	14.3	4.5	0.8	805.3	97.0	91.6	78.0	2.8	1176.0	218.6	1.6
22	19.9	16.2	14.3	4.5	0.8	804.2	96.0	90.1	78.0	7.6	1290.0	233.1	1.8
23	19.6	16.3	14.4	3.6	0.5	803.9	97.0	93.3	78.0	24.4	606.0	198.8	1.4
24	19.6	16.9	15.2	4.5	0.7	803.7	97.0	92.3	82.0	0.8	886.0	160.5	1.1
25	19.9	16.8	14.4	3.6	1.0	804.6	97.0	89.9	79.0	19.6	930.0	225.3	1.7
26	21.1	17.5	15.3	4.0	1.2	803.7	93.0	85.4	74.0	0.0	1238.0	230.7	1.8
27	22.8	18.6	14.9	4.9	1.7	803.0	91.0	80.1	67.0	0.0	1257.0	365.6	3.0
28	19.1	17.5	15.9	4.5	1.2	803.4	96.0	85.6	79.0	6.8	471.0	155.6	1.4
29	22.4	18.1	15.0	4.5	1.0	805.1	93.0	83.1	69.0	0.0	1046.0	278.8	2.3
30	23.6	18.2	15.1	4.0	1.1	804.5	93.0	83.3	63.0	2.0	1225.0	284.3	2.4
31	23.8	18.5	15.0	3.6	1.3	803.9	98.0	81.7	59.0	0.0	1179.0	346.8	2.7
Mensual	23.8	16.9	12.6	7.6	1.0	805.1	98.0	86.3	53.0	288.0	1376.0	290.7	69.9

Convenciones: V.V.: Velocidad del Viento P.B.: Presión Barométrica LI.: Lluvia diaria ET.: Evapotranspiración. Nota: Datos resaltados en rojo están incompletos.



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JORNADA DIURNA - DIRECCIÓN DEL VIENTO SEGÚN LA ROSA DE LOS VIENTOS (Frecuencia relativa)

Día	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	5%	1%	4%	1%	0%	1%	6%	8%	6%	3%	3%	4%	26%	10%	19%	3%
2	2%	6%	1%	0%	1%	2%	1%	5%	8%	6%	24%	3%	6%	13%	19%	3%
3	3%	1%	1%	0%	1%	1%	1%	13%	2%	0%	3%	12%	20%	20%	15%	8%
4	4%	0%	0%	0%	0%	0%	0%	0%	13%	0%	2%	8%	17%	24%	24%	8%
5	2%	13%	1%	3%	1%	0%	1%	4%	1%	1%	3%	6%	30%	22%	11%	3%
6	3%	0%	2%	4%	6%	1%	0%	0%	25%	2%	6%	6%	6%	15%	24%	1%
7	6%	3%	1%	0%	0%	0%	3%	14%	3%	1%	1%	2%	17%	26%	15%	9%
8	1%	1%	1%	3%	2%	3%	4%	8%	8%	5%	5%	6%	15%	14%	23%	1%
9	1%	0%	1%	0%	0%	4%	3%	3%	1%	3%	4%	18%	11%	27%	18%	4%
10	6%	3%	1%	4%	3%	8%	4%	9%	5%	5%	2%	3%	8%	11%	19%	9%
11	3%	1%	0%	0%	0%	0%	6%	6%	3%	1%	3%	5%	17%	29%	12%	15%
12	7%	0%	0%	0%	1%	1%	3%	1%	1%	9%	5%	3%	15%	28%	15%	12%
13	10%	7%	0%	0%	0%	1%	7%	6%	1%	1%	0%	6%	13%	27%	10%	10%
14	6%	1%	1%	0%	1%	8%	3%	4%	0%	2%	2%	9%	20%	23%	10%	11%
15	1%	0%	10%	3%	0%	1%	2%	3%	8%	1%	8%	6%	13%	20%	15%	7%
16	5%	1%	0%	0%	0%	0%	5%	6%	2%	3%	0%	8%	16%	22%	22%	10%
17	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	3%	4%	10%	42%	28%	10%
18	0%	1%	0%	1%	0%	0%	1%	0%	0%	0%	3%	3%	20%	47%	21%	3%
19	1%	0%	0%	4%	7%	5%	6%	6%	8%	0%	1%	3%	22%	26%	8%	4%
20	1%	0%	0%	0%	0%	0%	2%	0%	0%	5%	0%	1%	13%	49%	28%	1%
21	22%	1%	0%	1%	4%	1%	4%	4%	8%	5%	3%	1%	8%	17%	12%	9%
22	2%	0%	0%	0%	0%	1%	2%	8%	3%	1%	2%	5%	23%	32%	14%	7%
23	2%	1%	2%	3%	11%	2%	16%	1%	1%	3%	0%	3%	11%	27%	10%	6%
24	1%	1%	1%	1%	4%	1%	1%	10%	7%	3%	1%	3%	17%	19%	22%	7%
25	2%	0%	0%	0%	10%	0%	1%	1%	1%	1%	9%	11%	22%	21%	15%	7%
26	1%	0%	0%	0%	0%	1%	13%	3%	3%	8%	3%	9%	12%	31%	13%	4%
27	4%	3%	6%	0%	1%	1%	3%	8%	0%	2%	5%	13%	13%	22%	10%	8%
28	3%	4%	3%	12%	4%	9%	8%	4%	3%	0%	1%	2%	5%	18%	8%	15%
29	5%	6%	0%	1%	1%	3%	1%	13%	1%	0%	2%	6%	12%	26%	19%	6%
30	3%	2%	1%	0%	0%	3%	9%	16%	5%	1%	3%	4%	14%	19%	13%	7%
31	8%	4%	2%	1%	3%	3%	3%	6%	8%	2%	6%	12%	16%	10%	7%	10%
Mensual	4%	2%	1%	1%	2%	2%	4%	5%	4%	2%	4%	6%	15%	24%	16%	7%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ONO	NO	O	NNO	OSO	SSE	S	N	SE	SO	SSO	E	ESE	NNE	ENE	NE
F. R.	24%	16%	15%	7%	6%	5%	4%	4%	4%	4%	2%	2%	2%	2%	1%	1%

Convenciones: R. V.: Rosa de los Vientos F. R.: Frecuencia Relativa. Nota: Datos resaltados en rojo están incompletos.



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MARZO DE 2011



JORNADA NOCTURNA - DIRECCIÓN DEL VIENTO SEGÚN LA ROSA DE LOS VIENTOS (Frecuencia relativa)

DÍA	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	0%	5%	1%	1%	14%	6%	22%	18%	15%	9%	1%	2%	6%	1%	0%	0%
2	1%	2%	2%	0%	0%	0%	10%	7%	8%	12%	26%	10%	6%	5%	6%	6%
3	0%	0%	0%	0%	6%	4%	25%	25%	28%	7%	4%	0%	0%	0%	0%	0%
4	0%	3%	6%	0%	0%	4%	27%	45%	8%	0%	0%	0%	1%	6%	0%	0%
5	3%	0%	0%	0%	1%	5%	19%	31%	5%	15%	0%	0%	0%	5%	17%	0%
6	0%	0%	0%	0%	21%	3%	14%	30%	18%	2%	13%	0%	0%	0%	0%	0%
7	0%	0%	0%	0%	1%	31%	26%	30%	7%	3%	2%	0%	0%	0%	0%	0%
8	1%	0%	10%	15%	10%	19%	19%	13%	8%	6%	0%	0%	0%	0%	0%	0%
9	13%	1%	0%	2%	2%	8%	8%	2%	3%	5%	12%	12%	4%	17%	5%	6%
10	0%	1%	1%	1%	15%	6%	11%	5%	4%	0%	0%	0%	0%	53%	3%	0%
11	0%	1%	3%	22%	8%	13%	14%	20%	6%	0%	0%	0%	0%	13%	1%	1%
12	0%	0%	2%	0%	0%	0%	17%	8%	12%	8%	1%	0%	30%	0%	22%	1%
13	1%	0%	0%	0%	0%	0%	4%	19%	10%	8%	7%	0%	4%	38%	6%	2%
14	0%	0%	0%	0%	0%	1%	18%	42%	18%	3%	1%	1%	1%	1%	16%	0%
15	0%	0%	3%	25%	5%	1%	28%	31%	4%	2%	0%	0%	0%	0%	0%	0%
16	4%	2%	5%	4%	1%	10%	16%	24%	8%	6%	8%	1%	11%	0%	0%	0%
17	10%	0%	0%	0%	0%	0%	8%	6%	0%	0%	0%	0%	0%	37%	15%	25%
18	10%	0%	1%	13%	12%	5%	19%	6%	8%	7%	1%	0%	0%	5%	11%	2%
19	1%	0%	13%	3%	8%	6%	41%	19%	1%	2%	0%	0%	0%	6%	0%	0%
20	8%	0%	0%	0%	1%	2%	4%	44%	3%	2%	0%	3%	21%	0%	11%	0%
21	3%	0%	0%	0%	0%	37%	10%	28%	8%	5%	0%	0%	0%	9%	0%	1%
22	16%	0%	0%	3%	5%	6%	17%	9%	4%	3%	8%	6%	12%	0%	8%	5%
23	46%	13%	1%	4%	13%	2%	8%	1%	0%	7%	6%	0%	0%	0%	0%	0%
24	3%	0%	0%	2%	1%	1%	10%	28%	24%	3%	12%	1%	9%	2%	4%	0%
25	1%	3%	1%	1%	16%	11%	26%	10%	8%	3%	1%	0%	0%	8%	1%	6%
26	0%	0%	0%	1%	6%	14%	24%	27%	4%	7%	1%	6%	0%	11%	0%	0%
27	0%	0%	6%	1%	10%	6%	44%	27%	6%	1%	0%	0%	0%	0%	0%	0%
28	0%	0%	0%	2%	2%	11%	37%	47%	1%	0%	0%	0%	0%	0%	0%	0%
29	0%	0%	0%	1%	22%	12%	25%	17%	16%	1%	3%	0%	0%	0%	3%	0%
30	0%	0%	0%	5%	0%	1%	30%	37%	8%	8%	8%	0%	0%	1%	3%	0%
31	0%	1%	1%	1%	4%	8%	24%	31%	2%	1%	8%	7%	0%	1%	0%	11%
Mensual	4%	1%	2%	3%	6%	7%	20%	22%	8%	4%	4%	2%	3%	7%	4%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SSE	SE	S	ESE	ONO	E	SSO	NO	N	SO	ENE	O	NNO	NE	OSO	NNE
F. R.	22%	20%	8%	7%	7%	6%	4%	4%	4%	4%	3%	3%	2%	2%	2%	1%

Convenciones: R. V.: Rosa de los Vientos F. R.: Frecuencia Relativa. Nota: Datos resaltados en rojo están incompletos.