



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

JULIO 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	21.3	16.7	14.1	4.0	1.1	804.9	97.0	89.4	78.0	6.8	1195.0	280.8	2.2
2	20.1	16.8	15.3	4.0	1.0	804.9	95.0	86.8	78.0	3.2	1269.0	192.2	1.5
3	22.8	18.1	14.7	3.6	1.3	804.0	92.0	82.6	64.0	0.0	1239.0	374.8	3.1
4	20.9	17.7	15.5	3.6	1.2	803.7	95.0	84.9	74.0	0.0	1192.0	228.4	2.0
5	22.6	18.2	14.9	4.0	1.0	804.0	93.0	83.4	67.0	0.0	1288.0	297.3	2.4
6	20.0	16.7	14.8	4.9	0.9	804.7	97.0	89.7	74.0	7.6	914.0	205.8	1.6
7	22.9	18.1	14.4	4.5	1.4	805.0	92.0	79.8	62.0	0.0	1151.0	326.6	2.8
8	23.5	19.0	15.6	4.0	1.3	802.7	94.0	79.0	61.0	0.0	1202.0	400.2	3.4
9	22.3	18.8	15.7	4.0	1.3	802.5	89.0	80.7	65.0	0.0	1181.0	310.8	2.7
10	22.6	18.6	16.1	4.0	1.1	802.9	93.0	83.4	66.0	0.0	1144.0	339.0	2.7
11	22.9	18.6	15.9	4.0	0.9	804.3	92.0	82.3	65.0	0.0	1027.0	281.0	2.3
12	20.5	17.0	15.1	2.7	0.6	805.6	96.0	88.5	75.0	7.8	1216.0	273.5	2.0
13	17.0	15.2	13.8	2.7	0.4	807.0	98.0	95.0	87.0	16.2	715.0	162.7	1.2
14	19.3	15.7	13.8	3.1	0.6	807.8	98.0	91.4	75.0	11.6	1273.0	225.9	1.7
15	18.8	15.3	13.1	3.6	0.7	808.2	97.0	91.4	79.0	37.4	1176.0	245.1	1.8
16	22.4	17.1	14.0	3.6	0.8	806.4	97.0	88.0	69.0	0.2	1165.0	304.5	2.5
17	21.2	17.3	15.2	4.0	0.8	805.3	97.0	89.1	73.0	6.0	958.0	256.9	2.0
18	21.8	17.3	14.4	4.9	1.1	805.6	98.0	88.5	65.0	3.8	1297.0	362.8	2.8
19	23.1	18.3	14.9	4.0	0.9	804.9	95.0	83.7	64.0	0.2	1211.0	346.9	2.8
20	22.4	18.6	15.9	4.5	1.4	804.1	92.0	79.2	62.0	0.0	1206.0	282.2	2.6
21	23.2	18.9	15.9	4.0	1.5	803.4	88.0	76.7	57.0	0.0	935.0	356.3	3.1
22	23.8	19.2	15.7	4.0	1.3	802.9	92.0	77.5	57.0	0.0	1225.0	334.1	3.0
23	22.7	19.0	16.7	4.9	1.1	803.5	92.0	79.3	60.0	0.0	909.0	276.7	2.5
24	21.8	19.0	16.7	4.0	1.6	803.9	85.0	73.6	59.0	0.0	1151.0	305.0	2.8
25	24.1	19.4	16.4	4.0	1.5	802.8	88.0	72.3	57.0	0.4	1143.0	347.5	3.3
26	22.3	18.6	16.1	4.0	1.0	802.2	93.0	81.0	70.0	0.0	1104.0	289.7	2.3
27	22.5	18.3	15.8	4.0	1.0	803.1	91.0	80.9	67.0	0.0	944.0	237.4	2.1
28	19.3	16.5	14.6	4.0	0.7	804.2	97.0	90.5	76.0	22.8	758.0	196.6	1.4
29	17.1	14.6	13.4	4.9	0.9	806.5	98.0	94.4	88.0	21.6	671.0	149.5	1.0
30	17.9	15.1	13.2	4.9	1.1	807.2	97.0	93.1	86.0	14.4	538.0	209.1	1.4
31	19.4	16.2	14.2	3.6	0.5	806.4	96.0	89.7	75.0	0.6	1364.0	248.1	1.9
Mensual	24.1	17.5	13.1	4.9	1.0	804.7	98.0	84.7	57.0	160.6	1364.0	278.9	70.7

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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CÓDIGO: EMM-13

JULIO DE 2011



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%	2%	1%	0%	0%	0%	8%	1%	1%	0%	6%	5%	13%	26%	19%	14%
2	0%	0%	0%	1%	3%	3%	1%	2%	6%	7%	19%	6%	9%	28%	8%	6%
3	5%	0%	1%	0%	4%	1%	11%	1%	0%	1%	0%	7%	22%	18%	17%	13%
4	9%	7%	1%	0%	3%	7%	13%	2%	2%	0%	1%	1%	10%	15%	12%	17%
5	2%	1%	0%	0%	0%	0%	5%	5%	1%	1%	3%	3%	18%	33%	17%	12%
6	4%	1%	0%	3%	2%	5%	8%	6%	6%	7%	3%	1%	18%	19%	11%	6%
7	3%	1%	0%	1%	0%	7%	7%	1%	10%	1%	1%	6%	9%	31%	14%	8%
8	8%	4%	0%	8%	0%	0%	0%	0%	0%	1%	2%	6%	12%	33%	14%	11%
9	6%	1%	0%	1%	0%	7%	3%	1%	1%	1%	3%	4%	16%	32%	15%	9%
10	9%	8%	1%	3%	0%	6%	3%	3%	1%	1%	0%	1%	24%	22%	11%	8%
11	6%	1%	1%	1%	0%	1%	4%	3%	1%	0%	2%	6%	24%	18%	18%	14%
12	0%	1%	1%	0%	0%	0%	1%	3%	10%	11%	6%	4%	13%	35%	10%	4%
13	1%	0%	0%	1%	1%	2%	0%	1%	13%	5%	1%	3%	11%	31%	22%	9%
14	0%	1%	1%	0%	0%	1%	13%	0%	1%	3%	8%	6%	14%	21%	28%	4%
15	7%	10%	6%	2%	1%	0%	0%	0%	0%	0%	1%	1%	13%	31%	14%	15%
16	10%	1%	1%	0%	0%	15%	0%	3%	0%	1%	1%	3%	8%	32%	15%	10%
17	3%	3%	3%	3%	5%	1%	0%	0%	0%	0%	1%	3%	20%	25%	21%	12%
18	3%	1%	1%	0%	1%	0%	3%	4%	1%	1%	3%	3%	22%	13%	30%	13%
19	24%	0%	1%	0%	0%	0%	0%	0%	0%	1%	4%	6%	14%	21%	20%	10%
20	5%	1%	0%	0%	0%	3%	14%	5%	7%	1%	0%	6%	18%	22%	10%	9%
21	6%	0%	0%	0%	0%	3%	1%	4%	0%	1%	4%	5%	17%	24%	24%	11%
22	6%	0%	1%	0%	0%	10%	0%	0%	2%	2%	1%	9%	15%	29%	17%	8%
23	6%	3%	3%	1%	1%	1%	1%	0%	0%	2%	7%	3%	16%	21%	24%	11%
24	11%	6%	3%	0%	3%	9%	10%	8%	1%	2%	1%	1%	8%	17%	13%	7%
25	3%	1%	1%	0%	0%	0%	7%	3%	6%	1%	4%	6%	15%	30%	17%	6%
26	5%	0%	0%	0%	0%	0%	0%	0%	13%	1%	0%	6%	16%	21%	30%	8%
27	5%	1%	3%	3%	13%	2%	6%	5%	2%	3%	4%	5%	8%	16%	17%	9%
28	0%	0%	1%	1%	0%	7%	8%	6%	3%	5%	10%	13%	17%	16%	7%	5%
29	2%	0%	0%	0%	0%	1%	1%	8%	3%	10%	15%	8%	15%	23%	10%	3%
30	0%	0%	0%	0%	0%	4%	8%	3%	1%	0%	0%	13%	12%	49%	10%	0%
31	3%	0%	0%	11%	0%	0%	8%	1%	3%	6%	13%	6%	17%	19%	10%	4%
Mensual	5%	2%	1%	1%	1%	3%	5%	3%	3%	2%	4%	5%	15%	25%	16%	9%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ONO	NO	O	NNO	N	OSO	SE	SO	S	ESE	SSE	SSO	NNE	ENE	E	NE
F. R.	25%	16%	15%	9%	5%	5%	5%	4%	3%	3%	3%	2%	2%	1%	1%	1%

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



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JULIO 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%	0%	0%	1%	1%	4%	20%	17%	14%	1%	2%	1%	33%	7%	0%	0%
2	0%	0%	0%	0%	3%	6%	35%	36%	5%	1%	13%	1%	0%	0%	0%	0%
3	0%	0%	0%	0%	2%	15%	35%	19%	1%	0%	0%	0%	28%	0%	0%	0%
4	3%	3%	1%	1%	3%	14%	29%	22%	9%	1%	5%	3%	0%	0%	4%	2%
5	0%	0%	0%	0%	3%	1%	21%	34%	8%	11%	0%	0%	1%	20%	0%	0%
6	1%	8%	3%	1%	6%	1%	15%	13%	8%	6%	11%	4%	3%	6%	16%	1%
7	0%	0%	0%	0%	1%	1%	49%	34%	5%	0%	0%	1%	0%	9%	0%	0%
8	0%	0%	0%	6%	0%	1%	35%	37%	2%	1%	0%	0%	6%	13%	0%	0%
9	0%	0%	4%	0%	1%	4%	49%	23%	3%	1%	0%	0%	0%	0%	8%	6%
10	1%	0%	1%	6%	6%	5%	15%	31%	10%	13%	3%	2%	0%	4%	0%	3%
11	3%	17%	12%	0%	0%	4%	17%	11%	10%	0%	0%	1%	1%	0%	3%	20%
12	1%	1%	11%	0%	3%	2%	15%	7%	20%	4%	17%	2%	0%	3%	12%	2%
13	0%	0%	0%	0%	1%	0%	0%	0%	17%	2%	26%	42%	2%	7%	4%	0%
14	0%	0%	0%	0%	0%	1%	16%	19%	8%	7%	13%	8%	24%	5%	0%	0%
15	6%	0%	0%	0%	29%	10%	2%	4%	6%	5%	19%	18%	1%	0%	1%	0%
16	0%	0%	0%	0%	0%	19%	39%	11%	22%	8%	0%	0%	0%	1%	0%	0%
17	0%	0%	0%	0%	4%	1%	14%	8%	31%	1%	0%	0%	5%	3%	27%	7%
18	0%	0%	6%	0%	0%	3%	23%	28%	11%	7%	0%	1%	7%	0%	13%	1%
19	0%	1%	1%	0%	0%	11%	27%	19%	3%	3%	1%	8%	9%	3%	13%	0%
20	0%	5%	0%	5%	0%	4%	48%	31%	1%	1%	0%	0%	3%	2%	0%	0%
21	0%	0%	0%	0%	4%	3%	41%	35%	2%	0%	0%	0%	1%	13%	0%	0%
22	0%	0%	0%	0%	2%	13%	35%	22%	9%	2%	1%	0%	0%	16%	0%	0%
23	0%	0%	3%	1%	8%	6%	38%	19%	4%	2%	13%	1%	6%	0%	0%	0%
24	0%	0%	1%	6%	5%	12%	47%	27%	3%	0%	0%	0%	0%	0%	0%	0%
25	0%	12%	0%	0%	0%	0%	42%	31%	13%	0%	0%	0%	0%	1%	0%	0%
26	0%	0%	0%	0%	0%	0%	19%	42%	10%	7%	9%	0%	0%	0%	12%	0%
27	0%	0%	0%	0%	2%	2%	25%	38%	9%	6%	6%	13%	0%	0%	0%	0%
28	0%	0%	0%	0%	1%	2%	10%	5%	1%	6%	33%	8%	20%	13%	1%	0%
29	0%	0%	0%	0%	0%	1%	29%	17%	10%	8%	15%	9%	8%	2%	1%	0%
30	2%	1%	1%	3%	12%	14%	29%	17%	1%	0%	1%	1%	0%	15%	4%	1%
31	0%	0%	0%	0%	1%	0%	14%	30%	20%	13%	7%	1%	0%	8%	6%	1%
Mensual	1%	2%	1%	1%	3%	5%	27%	22%	9%	4%	6%	4%	4%	6%	4%	1%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SE	SSE	S	SO	ONO	ESE	O	OSO	NO	SSO	E	NNE	NE	NNO	ENE	N
F. R.	27%	22%	9%	6%	6%	5%	4%	4%	4%	4%	3%	2%	1%	1%	1%	1%

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