



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

NOVIEMBRE 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	23.2	18.0	14.3	4.9	1.5	804.4	89.0	77.0	59.0	0.0	1079.0	395.6	3.4
2	23.8	19.0	15.2	4.9	1.0	803.4	91.0	80.6	59.0	0.0	1178.0	478.0	3.9
3	20.9	17.7	15.7	4.0	1.0	803.9	96.0	88.2	77.0	0.0	601.0	234.2	1.8
4	23.3	18.1	14.9	5.4	1.4	804.0	94.0	83.0	64.0	56.8	1090.0	404.6	3.2
5	23.4	18.1	14.6	4.5	1.6	803.6	95.0	82.9	67.0	0.8	1202.0	464.2	3.8
6	20.8	17.5	15.1	4.5	1.3	803.9	97.0	86.4	75.0	24.0	1187.0	257.4	2.1
7	21.5	17.4	15.4	6.7	1.2	804.0	95.0	85.9	77.0	6.6	1081.0	346.4	2.6
8	16.9	15.5	14.2	3.6	0.4	805.5	98.0	94.1	89.0	29.6	329.0	137.3	0.9
9	21.3	16.6	14.2	3.6	0.6	805.8	97.0	90.1	69.0	2.6	861.0	265.1	1.9
10	20.1	16.5	14.8	4.0	1.0	805.0	98.0	91.7	81.0	30.4	1253.0	252.4	1.9
11	17.1	15.5	14.6	3.1	0.5	805.7	97.0	93.8	87.0	11.8	397.0	110.8	0.8
12	15.5	14.5	13.6	3.1	0.4	807.4	100.0	96.6	88.0	33.8	265.0	83.5	0.5
13	18.4	15.8	13.3	4.0	0.7	807.0	96.0	90.2	72.0	0.8	800.0	229.8	1.7
14	22.4	17.6	14.4	5.4	0.9	804.8	93.0	84.1	70.0	0.0	1174.0	462.0	3.4
15	21.8	17.1	14.6	4.5	1.3	803.8	95.0	85.3	67.0	1.0	1179.0	331.5	2.5
16	20.3	16.1	13.7	4.0	0.9	804.7	97.0	90.2	78.0	4.0	1071.0	337.2	2.4
17	20.1	16.1	13.2	3.6	1.0	805.0	97.0	90.6	77.0	14.4	1093.0	368.0	2.5
18	20.3	15.8	13.8	5.8	1.1	806.0	97.0	91.4	77.0	46.0	1215.0	389.1	2.8
19	21.3	16.5	13.4	4.0	1.0	806.4	95.0	86.0	61.0	34.0	1194.0	427.1	3.3
20	18.0	15.5	13.9	3.6	0.7	806.0	98.0	93.0	83.0	51.4	1336.0	193.5	1.4
21	21.1	16.3	13.3	4.0	1.0	806.2	98.0	89.0	71.0	11.2	1179.0	371.2	2.7
22	19.9	15.9	13.8	4.0	1.1	806.4	98.0	91.7	82.0	68.2	1118.0	281.2	2.0
23	22.0	17.0	14.6	4.9	1.4	806.6	92.0	85.1	67.0	0.0	1099.0	304.7	2.5
24	17.8	15.3	14.1	3.6	0.9	807.4	98.0	94.0	87.0	30.2	580.0	145.3	1.0
25	20.8	16.9	13.9	4.0	1.3	806.1	93.0	85.3	70.0	0.0	1187.0	298.2	2.3
26	21.0	17.2	14.8	4.5	1.7	804.5	92.0	82.4	70.0	0.0	606.0	224.1	1.9
27	21.1	16.9	14.7	4.0	1.6	803.1	95.0	85.3	77.0	4.0	1146.0	310.0	2.5
28	19.4	16.3	14.1	4.0	1.2	804.0	96.0	88.3	79.0	31.6	872.0	288.8	2.1
29	17.8	15.2	14.1	4.9	0.7	806.0	98.0	93.6	85.0	8.0	749.0	170.3	1.2
30	20.1	16.2	14.2	3.6	0.8	805.5	98.0	92.1	81.0	46.8	1137.0	333.7	2.3
31													
Mensual	23.8	16.6	13.2	6.7	1.0	805.2	100.0	88.3	59.0	548.0	1336.0	296.5	67.0

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

NOVIEMBRE 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	3%	1%	0%	0%	0%	1%	3%	3%	12%	1%	2%	8%	13%	26%	8%	20%
2	6%	1%	1%	0%	0%	0%	5%	4%	3%	3%	4%	7%	15%	27%	15%	9%
3	3%	3%	3%	3%	1%	1%	1%	2%	3%	1%	6%	4%	28%	22%	6%	12%
4	5%	3%	1%	0%	0%	3%	4%	1%	1%	1%	6%	6%	22%	23%	19%	6%
5	13%	3%	1%	1%	0%	1%	3%	6%	3%	1%	12%	6%	19%	12%	10%	10%
6	6%	1%	1%	0%	1%	1%	4%	3%	3%	1%	1%	3%	11%	31%	23%	8%
7	10%	1%	0%	0%	1%	1%	10%	7%	3%	2%	2%	8%	21%	16%	12%	6%
8	1%	0%	0%	0%	6%	2%	0%	2%	12%	13%	8%	11%	3%	33%	8%	2%
9	6%	0%	1%	0%	0%	0%	9%	1%	1%	2%	1%	6%	21%	24%	19%	8%
10	1%	1%	1%	6%	3%	1%	0%	1%	8%	1%	1%	13%	15%	27%	14%	10%
11	0%	0%	1%	1%	0%	13%	1%	13%	6%	0%	0%	2%	6%	26%	26%	6%
12	0%	0%	0%	0%	0%	0%	0%	1%	1%	4%	15%	24%	9%	30%	14%	1%
13	2%	0%	1%	0%	2%	7%	8%	1%	4%	0%	2%	3%	15%	33%	17%	6%
14	5%	3%	1%	2%	0%	0%	1%	14%	3%	0%	1%	8%	17%	26%	8%	9%
15	3%	0%	0%	1%	1%	6%	9%	6%	6%	3%	10%	14%	11%	14%	12%	4%
16	0%	0%	0%	0%	1%	2%	7%	14%	6%	8%	1%	12%	13%	22%	12%	2%
17	2%	1%	3%	0%	0%	2%	11%	2%	4%	8%	3%	3%	19%	26%	10%	4%
18	1%	3%	1%	3%	1%	2%	6%	6%	5%	4%	3%	7%	18%	26%	11%	4%
19	8%	4%	0%	0%	6%	8%	1%	0%	0%	0%	1%	4%	18%	17%	20%	13%
20	6%	1%	3%	2%	3%	3%	3%	4%	8%	9%	1%	6%	10%	18%	13%	10%
21	6%	2%	0%	1%	0%	1%	11%	3%	0%	0%	3%	2%	14%	27%	17%	13%
22	6%	1%	0%	0%	1%	1%	1%	3%	6%	2%	6%	7%	19%	23%	17%	6%
23	4%	2%	0%	0%	0%	1%	8%	8%	5%	4%	1%	6%	17%	25%	10%	8%
24	1%	0%	0%	0%	0%	14%	0%	0%	0%	2%	3%	2%	10%	43%	20%	5%
25	3%	0%	0%	1%	0%	1%	13%	6%	0%	1%	3%	9%	10%	36%	13%	4%
26	5%	0%	1%	0%	1%	1%	7%	14%	5%	6%	8%	10%	11%	22%	6%	4%
27	6%	3%	1%	1%	1%	18%	11%	6%	3%	2%	1%	4%	9%	18%	7%	8%
28	3%	0%	1%	0%	0%	0%	5%	6%	10%	3%	5%	3%	13%	27%	17%	8%
29	1%	1%	1%	0%	0%	0%	0%	0%	4%	7%	15%	2%	27%	23%	9%	10%
30	3%	0%	0%	0%	0%	0%	2%	0%	7%	3%	16%	10%	24%	23%	8%	6%
31																
Mensual	4%	1%	1%	1%	1%	3%	5%	5%	4%	3%	5%	7%	15%	25%	13%	7%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ONO	O	NO	NNO	OSO	SE	SO	SSE	S	N	ESE	SSO	NNE	E	ENE	NE
F. R.	25%	15%	13%	7%	7%	5%	5%	5%	4%	4%	3%	3%	1%	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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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%	0%	0%	4%	44%	37%	1%	0%	0%	0%	0%	0%	0%	13%
2	0%	0%	1%	9%	1%	4%	30%	27%	9%	3%	0%	0%	3%	3%	8%	1%
3	0%	8%	7%	1%	11%	8%	13%	8%	21%	6%	1%	0%	1%	6%	2%	10%
4	0%	0%	0%	1%	4%	13%	33%	11%	4%	16%	1%	8%	1%	5%	2%	1%
5	0%	1%	8%	3%	6%	20%	29%	13%	10%	0%	0%	0%	0%	2%	5%	3%
6	0%	0%	0%	1%	1%	9%	37%	37%	1%	3%	3%	0%	0%	6%	2%	0%
7	0%	0%	0%	2%	17%	2%	19%	17%	24%	12%	8%	0%	0%	0%	0%	0%
8	7%	0%	0%	0%	26%	3%	0%	0%	13%	1%	2%	2%	17%	27%	0%	1%
9	16%	0%	0%	0%	0%	0%	34%	9%	31%	1%	1%	0%	6%	0%	2%	0%
10	0%	0%	0%	10%	1%	15%	25%	10%	20%	1%	0%	0%	1%	13%	3%	1%
11	0%	50%	0%	0%	0%	6%	9%	25%	1%	9%	0%	0%	0%	0%	0%	0%
12	0%	28%	0%	0%	13%	1%	3%	5%	10%	19%	0%	19%	3%	0%	0%	0%
13	0%	0%	0%	1%	2%	7%	2%	32%	1%	42%	0%	0%	4%	0%	10%	0%
14	0%	21%	3%	3%	6%	4%	25%	33%	1%	4%	0%	0%	0%	0%	0%	0%
15	1%	0%	1%	6%	6%	15%	22%	16%	3%	0%	9%	0%	1%	2%	17%	1%
16	0%	0%	0%	2%	10%	24%	12%	4%	2%	11%	8%	1%	0%	5%	17%	4%
17	7%	0%	0%	1%	4%	19%	10%	14%	13%	8%	5%	1%	3%	6%	8%	0%
18	1%	0%	0%	10%	6%	0%	17%	15%	18%	6%	9%	4%	0%	1%	11%	1%
19	0%	6%	2%	0%	1%	3%	18%	40%	8%	3%	3%	1%	1%	11%	3%	0%
20	9%	14%	0%	1%	21%	1%	3%	4%	15%	1%	22%	1%	6%	2%	0%	0%
21	0%	0%	0%	0%	1%	1%	31%	10%	1%	30%	1%	17%	2%	7%	0%	0%
22	0%	0%	0%	0%	0%	15%	28%	6%	1%	0%	10%	8%	17%	6%	8%	0%
23	0%	0%	0%	0%	0%	6%	48%	23%	1%	1%	22%	0%	0%	0%	0%	0%
24	16%	2%	5%	1%	2%	16%	33%	6%	5%	1%	1%	0%	0%	1%	0%	12%
25	0%	0%	0%	0%	3%	8%	33%	30%	3%	21%	0%	1%	0%	1%	0%	0%
26	0%	0%	0%	0%	0%	1%	50%	49%	1%	0%	0%	0%	0%	0%	0%	0%
27	0%	0%	1%	5%	1%	10%	36%	39%	1%	0%	0%	0%	0%	1%	0%	6%
28	1%	13%	2%	1%	4%	19%	17%	26%	6%	3%	3%	0%	0%	0%	1%	2%
29	0%	0%	3%	1%	2%	0%	2%	39%	15%	3%	8%	0%	9%	17%	0%	0%
30	4%	1%	1%	0%	10%	9%	18%	16%	4%	6%	17%	1%	0%	4%	9%	1%
31																
Mensual	2%	5%	1%	2%	5%	8%	23%	20%	8%	7%	4%	2%	2%	4%	4%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SE	SSE	S	ESE	SSO	E	NNE	SO	ONO	NO	O	OSO	N	ENE	NNO	NE
F. R.	23%	20%	8%	8%	7%	5%	5%	4%	4%	4%	2%	2%	2%	2%	2%	1%

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