



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 BOSQUES DEL NORTE

CÓDIGO: EMM-08

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	22.7	17.3	14.0	5.8	0.7	791.1	98.0	91.8	76.0	3.8	1093.0	322.9	2.4
2	19.8	16.6	13.9	3.6	0.5	791.9	98.0	93.5	83.0	4.6	563.0	167.1	1.3
3	22.6	17.8	13.4	5.4	0.6	790.3	98.0	89.1	68.0	0.0	904.0	280.8	2.2
4	20.8	17.3	14.8	4.0	0.5	790.8	98.0	93.4	82.0	1.0	666.0	175.0	1.3
5	22.9	17.9	13.8	3.1	0.5	790.7	98.0	89.8	69.0	0.0	1018.0	232.8	1.9
6	20.5	17.2	14.4	6.3	0.5	792.0	98.0	93.4	81.0	10.8	803.0	188.8	1.4
7	23.3	17.8	13.2	4.9	0.5	791.3	98.0	85.8	66.0	0.2	1048.0	366.8	2.9
8	23.6	18.3	14.6	5.4	0.7	790.3	98.0	86.7	64.0	0.0	1162.0	307.4	2.6
9	22.8	18.3	14.1	5.4	0.5	790.2	97.0	87.7	68.0	0.0	633.0	219.3	1.8
10	22.6	18.2	15.3	4.9	0.5	790.3	97.0	89.7	71.0	0.0	1069.0	232.4	1.9
11	23.1	18.6	15.1	4.0	0.5	791.6	97.0	87.6	63.0	0.0	1136.0	255.1	2.1
12	20.2	17.5	14.8	3.6	0.4	792.8	98.0	91.1	69.0	2.0	689.0	183.9	1.3
13	18.2	15.9	14.9	3.1	0.4	794.2	98.0	95.8	89.0	7.0	466.0	144.0	1.0
14	19.1	15.9	14.5	3.1	0.4	794.8	98.0	94.2	75.0	13.0	628.0	139.3	1.0
15	19.1	16.1	13.6	4.0	0.6	795.2	98.0	93.2	81.0	24.2	1027.0	225.3	1.7
16	21.9	17.4	14.2	4.5	0.6	793.0	98.0	92.4	79.0	0.2	1176.0	351.8	2.7
17	21.9	17.7	15.1	4.5	0.5	792.5	98.0	92.0	69.0	2.0	1065.0	287.2	2.2
18	22.2	17.8	15.6	4.5	0.5	792.5	98.0	90.9	68.0	1.0	1278.0	266.6	2.1
19	23.1	18.1	13.8	4.5	0.5	792.0	98.0	89.1	68.0	0.4	1011.0	242.1	1.9
20	23.1	18.3	15.3	4.0	0.5	791.4	97.0	86.7	63.0	0.0	1178.0	261.0	2.2
21	23.6	18.5	13.9	5.8	0.7	790.9	96.0	83.7	58.0	0.0	1000.0	374.2	3.1
22	23.8	18.7	14.8	4.5	0.6	790.3	97.0	85.3	60.0	0.0	1206.0	286.5	2.4
23	22.6	18.6	15.7	4.0	0.5	790.9	96.0	86.6	66.0	0.8	1067.0	279.2	2.2
24	23.3	18.2	14.7	4.5	0.5	791.8	96.0	82.4	61.0	0.0	863.0	293.5	2.4
25	24.2	18.4	14.4	2.7	0.5	790.5	95.0	84.3	61.0	1.0	1158.0	316.9	2.5
26	22.3	18.3	15.5	2.7	0.4	790.0	96.0	88.5	73.0	0.0	1069.0	207.4	1.6
27	22.7	17.8	15.2	4.9	0.4	790.6	98.0	90.6	72.0	3.0	1028.0	213.1	1.7
28	20.8	17.1	15.3	4.5	0.6	791.7	97.0	93.1	78.0	12.0	705.0	198.6	1.4
29	17.8	15.3	14.2	3.6	0.6	793.7	98.0	96.1	87.0	26.6	1037.0	156.3	1.1
30	20.6	16.0	13.7	4.0	0.6	793.9	98.0	92.9	72.0	11.0	677.0	257.5	1.9
31	21.1	16.7	13.4	4.5	0.5	793.1	97.0	91.5	77.0	0.8	1274.0	292.1	2.2
Mensual	24.2	17.5	13.2	6.3	0.5	791.8	98.0	90.0	58.0	125.4	1278.0	249.2	60.2

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

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	NNE	N	NNO	NO	SSO	SO	NE	S	ONO	O	OSO	SSE	SE	ESE	E	ENE
F. R.	17%	12%	11%	11%	7%	7%	6%	6%	5%	5%	5%	3%	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	3%	59%	14%	0%	0%	0%	0%	1%	0%	1%	1%	1%	2%	13%	3%	3%
2	17%	79%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	2%	1%
3	27%	39%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	1%	1%	8%	22%
4	22%	49%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	22%
5	6%	52%	5%	1%	0%	0%	0%	1%	0%	3%	0%	0%	0%	1%	22%	10%
6	8%	22%	1%	13%	3%	0%	0%	0%	1%	0%	0%	4%	1%	0%	5%	44%
7	7%	6%	22%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%	1%	11%	50%
8	15%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	37%	10%
9	58%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	14%
10	15%	4%	0%	0%	0%	0%	0%	0%	0%	24%	0%	0%	9%	0%	19%	29%
11	36%	22%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	14%	3%	7%	15%
12	24%	2%	2%	0%	0%	0%	0%	1%	1%	40%	15%	0%	8%	2%	1%	3%
13	0%	0%	0%	0%	0%	0%	0%	0%	6%	57%	5%	33%	0%	0%	0%	0%
14	13%	0%	0%	0%	0%	0%	35%	0%	13%	10%	6%	1%	1%	0%	0%	22%
15	0%	0%	7%	0%	0%	10%	13%	5%	10%	33%	2%	0%	0%	1%	12%	7%
16	32%	10%	33%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%
17	17%	31%	12%	1%	0%	0%	1%	0%	15%	0%	14%	0%	0%	1%	6%	3%
18	9%	28%	1%	1%	0%	0%	0%	0%	52%	0%	1%	0%	6%	1%	0%	0%
19	42%	18%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	35%	0%
20	55%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	26%
21	11%	5%	13%	1%	0%	1%	0%	0%	0%	0%	0%	1%	0%	0%	6%	63%
22	8%	13%	36%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	1%	3%	38%
23	8%	56%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	27%	9%
24	34%	28%	10%	0%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	16%
25	22%	74%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
26	1%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	13%	0%	1%	48%
27	17%	55%	1%	0%	0%	0%	0%	0%	21%	0%	0%	4%	1%	1%	1%	0%
28	21%	0%	0%	0%	0%	0%	1%	6%	17%	13%	14%	1%	0%	0%	9%	20%
29	0%	24%	0%	5%	1%	0%	0%	1%	44%	19%	4%	1%	1%	0%	0%	0%
30	19%	44%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	8%	6%	7%
31	44%	7%	0%	22%	0%	0%	0%	14%	1%	0%	5%	0%	0%	2%	5%	1%
Mensual	19%	27%	5%	1%	1%	0%	2%	1%	6%	7%	2%	2%	2%	1%	8%	16%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	NNE	N	NNO	NO	SSO	S	NE	O	SO	OSO	SE	ONO	ENE	SSE	E	ESE
F. R.	27%	19%	16%	8%	7%	6%	5%	2%	2%	2%	2%	1%	1%	1%	1%	0%

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