



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 POSGRADOS

CÓDIGO: EMM-02

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	24.2	16.5	12.6	4.0	0.7	793.3	100.0	91.4	67.0	3.0	1216.0	411.5	2.8
2	21.6	16.0	12.9	2.7	0.7	793.5	100.0	91.5	71.0	1.5	962.0	205.1	1.5
3	26.2	17.9	12.1	4.9	0.9	792.9	100.0	85.1	55.0	0.0	1304.0	359.1	2.8
4	23.7	17.1	13.5	3.1	0.8	793.2	100.0	89.1	66.0	0.3	1192.0	304.5	2.0
5	25.0	17.7	12.5	3.6	1.0	793.4	99.0	85.2	60.0	0.0	1212.0	337.1	2.5
6	20.6	15.9	12.8	3.1	0.6	793.8	100.0	94.6	78.0	11.7	669.0	184.9	1.3
7	25.9	17.5	12.1	3.6	1.2	793.5	100.0	82.5	54.0	0.3	1195.0	330.9	2.8
8	27.6	18.7	13.4	4.0	1.0	792.7	100.0	81.6	46.0	0.0	1215.0	429.3	3.6
9	24.7	17.9	13.2	3.1	1.1	792.7	96.0	84.4	60.0	0.0	1120.0	290.7	2.3
10	26.4	17.8	14.0	3.6	0.7	792.9	100.0	87.1	55.0	0.5	1170.0	308.3	2.3
11	24.3	18.2	13.7	3.6	0.8	793.9	100.0	84.8	57.0	0.0	1110.0	309.1	2.5
12	22.0	16.8	13.8	3.6	0.5	794.6	100.0	90.6	71.0	5.6	1048.0	315.9	2.3
13	17.5	14.5	13.1	1.8	0.3	794.7	100.0	99.5	94.0	9.4	565.0	178.2	0.8
14	22.6	15.1	12.5	2.2	0.3	794.8	100.0	95.9	69.0	29.7	1231.0	256.5	1.8
15	21.7	15.0	11.9	3.6	0.5	795.3	100.0	94.2	73.0	32.3	1247.0	298.5	2.0
16	25.2	17.0	12.6	3.1	0.6	794.2	100.0	89.6	59.0	1.0	1264.0	466.7	3.3
17	24.6	16.9	13.3	3.1	0.6	794.2	100.0	91.9	66.0	2.0	1279.0	300.3	2.3
18	24.7	17.4	14.1	3.6	0.6	794.1	100.0	89.6	59.0	3.0	1327.0	376.9	2.8
19	25.1	17.9	12.7	3.6	0.7	793.9	100.0	89.0	59.0	0.5	1233.0	441.7	3.6
20	24.6	17.9	14.0	4.5	0.9	793.8	98.0	83.7	55.0	0.0	1160.0	304.0	2.3
21	26.0	18.6	13.1	3.6	1.0	793.2	97.0	79.2	47.0	0.0	1052.0	413.5	3.6
22	27.8	18.5	13.9	3.6	0.8	793.0	98.0	82.1	48.0	0.0	1211.0	360.1	3.1
23	24.1	18.3	15.0	3.6	0.8	793.6	97.0	83.8	61.0	0.3	1053.0	293.9	2.3
24	25.7	18.0	14.1	3.6	1.3	793.8	95.0	78.4	53.0	0.0	1130.0	333.6	2.5
25	27.6	18.6	13.5	4.0	1.2	793.0	94.0	78.0	47.0	0.5	1205.0	378.2	3.0
26	26.6	18.2	14.4	3.1	0.7	792.6	97.0	84.9	57.0	0.0	1167.0	335.5	2.5
27	25.6	17.4	13.8	3.6	0.9	792.9	98.0	86.4	58.0	0.0	1096.0	280.8	2.0
28	22.1	16.1	13.6	2.7	0.4	793.5	100.0	93.9	71.0	9.9	862.0	229.8	1.5
29	19.8	14.1	12.6	3.1	0.4	793.9	100.0	99.1	87.0	23.4	995.0	212.7	1.3
30	20.8	15.1	11.9	6.3	0.5	794.1	100.0	97.7	81.0	9.9	647.0	298.6	2.0
31	23.2	16.1	12.3	3.1	0.5	794.0	100.0	91.2	67.0	0.5	1231.0	342.3	2.5
Mensual	27.8	17.0	11.9	6.3	0.7	793.7	100.0	88.3	46.0	145.3	1327.0	319.0	73.9

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

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	NO	NNO	ONO	N	OSO	O	E	SO	SSO	S	NNE	ENE	NE	ESE	SSE	SE
F. R.	12%	10%	10%	9%	9%	8%	7%	6%	6%	6%	4%	4%	3%	3%	2%	2%

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	4%	4%	9%	7%	36%	10%	3%	1%	3%	1%	13%	1%	1%	1%	1%	3%
2	0%	0%	4%	12%	53%	18%	3%	8%	0%	1%	0%	1%	0%	0%	0%	0%
3	0%	0%	1%	12%	41%	19%	4%	4%	3%	3%	1%	9%	1%	1%	1%	1%
4	3%	3%	6%	13%	46%	10%	6%	2%	3%	0%	0%	3%	1%	1%	1%	2%
5	1%	1%	4%	8%	65%	19%	3%	0%	0%	0%	0%	0%	0%	0%	1%	0%
6	10%	4%	7%	6%	36%	4%	2%	0%	3%	9%	5%	3%	3%	2%	4%	1%
7	0%	0%	0%	6%	60%	25%	6%	1%	0%	1%	0%	2%	0%	0%	0%	0%
8	0%	0%	0%	14%	57%	22%	4%	0%	0%	0%	2%	0%	0%	0%	1%	0%
9	5%	1%	3%	10%	47%	12%	6%	0%	0%	0%	0%	0%	0%	8%	5%	3%
10	0%	1%	4%	11%	45%	22%	6%	1%	5%	0%	1%	0%	2%	1%	0%	0%
11	11%	6%	8%	10%	21%	9%	4%	3%	1%	2%	1%	1%	3%	3%	13%	5%
12	6%	2%	5%	8%	12%	8%	7%	6%	3%	7%	0%	6%	4%	7%	7%	13%
13	2%	3%	13%	3%	9%	5%	0%	1%	1%	3%	17%	15%	8%	9%	7%	2%
14	0%	0%	1%	17%	27%	6%	8%	0%	11%	10%	8%	2%	3%	4%	2%	1%
15	2%	3%	1%	0%	6%	2%	14%	3%	4%	9%	9%	13%	15%	7%	10%	2%
16	0%	12%	5%	13%	52%	10%	5%	2%	1%	0%	0%	0%	0%	0%	0%	0%
17	3%	1%	8%	15%	26%	11%	8%	1%	1%	2%	6%	6%	3%	2%	2%	4%
18	0%	3%	13%	16%	23%	13%	4%	0%	2%	17%	1%	3%	2%	0%	1%	1%
19	0%	1%	6%	8%	49%	16%	6%	1%	3%	8%	0%	1%	0%	0%	0%	1%
20	0%	1%	7%	7%	56%	21%	6%	1%	2%	0%	0%	0%	0%	0%	0%	1%
21	0%	0%	2%	13%	51%	22%	5%	0%	0%	0%	1%	0%	3%	1%	1%	0%
22	0%	1%	3%	8%	53%	22%	6%	0%	0%	0%	0%	1%	4%	1%	1%	0%
23	2%	2%	2%	13%	50%	21%	3%	8%	0%	0%	0%	0%	0%	0%	0%	0%
24	0%	0%	0%	3%	76%	15%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%
25	0%	1%	3%	10%	56%	23%	3%	0%	0%	0%	0%	0%	0%	0%	5%	0%
26	0%	0%	2%	10%	56%	16%	1%	0%	0%	0%	0%	0%	5%	8%	1%	0%
27	2%	3%	6%	12%	58%	10%	3%	1%	6%	0%	0%	0%	0%	0%	0%	0%
28	0%	0%	3%	8%	22%	5%	2%	5%	8%	15%	14%	11%	5%	1%	1%	0%
29	0%	1%	1%	10%	26%	8%	3%	1%	8%	15%	13%	10%	2%	0%	0%	3%
30	7%	8%	6%	10%	24%	15%	2%	0%	15%	1%	2%	3%	1%	1%	3%	1%
31	0%	1%	5%	24%	41%	2%	2%	0%	0%	1%	10%	10%	3%	1%	1%	0%
Mensual	2%	2%	4%	10%	41%	14%	5%	2%	3%	3%	3%	3%	2%	2%	2%	1%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	E	ESE	ENE	SE	NE	SSO	SO	OSO	S	O	NO	NNE	ONO	N	SSE	NNO
F. R.	41%	14%	10%	5%	4%	3%	3%	3%	3%	2%	2%	2%	2%	2%	2%	1%

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