



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 ARANJUEZ

CÓDIGO: EMM-07

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	23.4	17.3	13.8	4.5	0.8	813.3	96.0	83.3	63.0	2.0	1187.0	426.9	3.4
2	21.8	16.8	13.6	3.1	0.7	813.4	92.0	82.5	65.0	2.0	788.0	204.6	1.8
3	23.8	17.8	12.6	4.0	1.1	812.6	91.0	76.0	55.0	0.0	1213.0	412.4	3.5
4	22.4	17.7	14.6	4.0	0.9	812.3	95.0	80.0	62.0	0.4	1266.0	293.2	2.4
5	23.9	18.1	13.6	4.5	1.0	812.7	86.0	74.9	55.0	0.0	1041.0	367.1	3.1
6	20.7	16.9	13.9	2.7	0.7	813.3	94.0	83.7	67.0	15.6	701.0	237.0	1.9
7	24.6	17.9	12.9	3.1	0.9	813.5	92.0	74.7	51.0	0.2	1172.0	407.7	3.4
8	25.3	18.5	13.9	3.6	1.1	811.5	85.0	72.6	47.0	0.0	1280.0	448.4	3.8
9	23.6	18.6	13.9	4.0	1.0	811.3	85.0	73.6	57.0	0.0	1185.0	325.8	3.0
10	23.8	18.5	14.7	4.5	1.1	811.3	88.0	76.0	56.0	0.0	1202.0	372.5	3.2
11	25.1	19.1	14.6	4.9	0.9	812.6	90.0	73.5	46.0	0.0	1095.0	376.2	3.3
12	22.4	17.8	15.3	3.1	0.5	813.8	94.0	82.4	62.0	5.0	742.0	282.2	2.3
13	19.2	15.9	14.6	2.2	0.3	815.4	97.0	91.3	74.0	4.6	680.0	183.8	1.2
14	21.2	16.2	13.8	3.1	0.4	816.0	97.0	85.6	58.0	15.2	807.0	259.3	1.9
15	20.4	16.2	13.6	4.0	0.4	816.4	98.0	86.0	68.0	28.0	1090.0	280.4	2.1
16	24.0	17.3	13.6	4.9	0.9	814.4	93.0	81.7	57.0	0.8	1129.0	406.3	3.3
17	22.2	17.6	14.2	2.7	0.6	813.8	95.0	80.9	58.0	1.4	1030.0	292.9	2.3
18	23.0	17.7	15.3	4.5	0.7	813.6	96.0	85.3	56.0	6.4	1260.0	330.6	2.6
19	24.6	18.4	13.9	4.9	0.9	813.2	96.0	78.9	53.0	0.2	1181.0	463.2	3.7
20	24.4	18.4	14.8	4.5	1.2	812.6	88.0	74.5	57.0	0.0	1153.0	342.7	3.1
21	24.7	18.5	13.6	4.0	1.1	812.1	88.0	71.8	45.0	0.0	998.0	378.3	3.3
22	25.3	18.9	14.1	4.5	1.1	811.5	86.0	72.0	48.0	0.0	1007.0	384.9	3.4
23	23.9	18.9	15.8	3.1	0.8	811.9	86.0	75.4	52.0	1.0	926.0	304.8	2.7
24	24.6	18.4	14.9	4.0	1.3	812.8	85.0	71.1	49.0	0.0	1129.0	310.8	2.8
25	24.4	18.8	14.3	4.0	1.1	811.6	86.0	70.6	48.0	0.4	1148.0	358.4	3.3
26	24.0	18.6	15.4	3.1	0.9	811.0	88.0	75.5	54.0	0.0	1116.0	354.8	3.0
27	23.9	18.3	15.2	4.0	0.8	811.7	88.0	75.7	52.0	0.0	1215.0	264.3	2.4
28	22.4	17.2	15.4	3.1	0.5	812.9	95.0	83.5	61.0	3.2	1053.0	237.3	1.9
29	18.7	15.3	13.9	4.5	0.4	814.9	98.0	92.6	75.0	26.2	849.0	189.8	1.4
30	20.0	15.9	13.6	3.1	0.5	815.3	96.0	89.0	75.0	10.4	603.0	264.0	1.9
31	22.2	16.6	13.4	4.0	0.5	814.5	93.0	83.9	67.0	0.0	1280.0	305.3	2.2
Mensual	25.3	17.7	12.6	4.9	0.8	813.1	98.0	79.3	45.0	123.0	1280.0	324.7	83.4

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-07

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

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SSO	SO	ONO	NO	O	ESE	NE	OSO	S	E	SE	ENE	NNE	NNO	N	SSE
F. R.	15%	14%	14%	9%	8%	6%	6%	6%	4%	4%	3%	3%	3%	2%	2%	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	1%	2%	17%	9%	28%	32%	5%	1%	2%	3%	1%	0%	0%	0%	0%	0%
2	1%	1%	10%	13%	31%	31%	11%	1%	0%	0%	0%	0%	0%	0%	0%	0%
3	0%	4%	16%	13%	30%	22%	5%	2%	0%	1%	7%	0%	0%	0%	0%	0%
4	3%	4%	22%	10%	23%	26%	8%	0%	0%	0%	0%	0%	1%	3%	1%	0%
5	2%	4%	24%	24%	14%	24%	4%	0%	1%	3%	0%	0%	0%	0%	0%	0%
6	0%	2%	31%	15%	18%	19%	13%	1%	0%	0%	0%	0%	0%	0%	1%	0%
7	1%	8%	19%	17%	26%	22%	3%	1%	0%	0%	0%	0%	0%	0%	3%	0%
8	0%	6%	11%	18%	31%	29%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%
9	3%	3%	21%	19%	17%	13%	3%	0%	0%	2%	1%	0%	1%	15%	2%	0%
10	1%	4%	18%	13%	20%	26%	13%	2%	0%	4%	0%	0%	0%	0%	0%	0%
11	1%	3%	16%	6%	7%	10%	12%	0%	1%	1%	8%	1%	2%	1%	26%	4%
12	0%	6%	3%	0%	7%	5%	7%	0%	1%	2%	1%	1%	1%	24%	41%	1%
13	0%	0%	0%	3%	24%	15%	1%	0%	2%	0%	29%	0%	0%	7%	19%	0%
14	6%	0%	20%	11%	9%	6%	13%	0%	0%	2%	10%	1%	1%	0%	22%	0%
15	10%	1%	15%	3%	1%	6%	1%	0%	0%	0%	4%	0%	1%	20%	38%	1%
16	0%	1%	13%	16%	40%	25%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%
17	1%	3%	19%	6%	9%	10%	3%	19%	0%	1%	0%	0%	20%	1%	2%	5%
18	0%	0%	8%	12%	10%	19%	11%	0%	0%	3%	0%	0%	0%	0%	37%	0%
19	0%	2%	24%	24%	16%	18%	8%	3%	1%	4%	0%	0%	0%	0%	0%	0%
20	1%	3%	23%	13%	11%	34%	14%	0%	0%	0%	0%	0%	0%	0%	0%	1%
21	0%	5%	14%	12%	25%	30%	8%	0%	0%	0%	0%	0%	0%	0%	6%	1%
22	0%	3%	15%	19%	19%	29%	8%	0%	0%	0%	4%	0%	1%	0%	1%	1%
23	0%	3%	14%	23%	22%	28%	5%	1%	0%	1%	0%	3%	0%	0%	0%	0%
24	1%	3%	23%	18%	26%	24%	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%
25	1%	3%	16%	19%	21%	28%	5%	0%	0%	0%	0%	0%	0%	6%	0%	0%
26	1%	3%	22%	10%	17%	28%	6%	1%	0%	0%	7%	1%	1%	0%	3%	0%
27	3%	4%	18%	16%	8%	33%	8%	1%	0%	8%	0%	0%	0%	0%	0%	0%
28	4%	3%	10%	3%	16%	21%	2%	1%	0%	0%	1%	8%	1%	0%	13%	17%
29	3%	26%	4%	3%	4%	19%	15%	0%	0%	1%	1%	1%	1%	7%	12%	0%
30	1%	0%	31%	15%	4%	13%	3%	4%	1%	2%	1%	0%	4%	19%	0%	0%
31	0%	1%	9%	14%	20%	24%	9%	2%	0%	0%	3%	1%	14%	2%	0%	0%
Mensual	1%	4%	16%	13%	18%	22%	7%	1%	0%	1%	3%	0%	2%	3%	7%	1%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ESE	E	NE	ENE	NO	SE	NNE	ONO	SO	O	N	SSE	SSO	NNO	OSO	S
F. R.	22%	18%	16%	13%	7%	7%	4%	3%	3%	2%	1%	1%	1%	1%	0%	0%

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