



# 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 HOSPITAL DE CALDAS

CÓDIGO: EMM-10

SEPTIEMBRE DE 2011

### RESUMEN DIARIO Y MENSUAL DE VARIABLES METEOROLÓGICAS

Variables Dia	Temperatura del Aire (°C)			V.V. (m/s)		P.B. (hPa)	Humedad Relativa (%)			LI. (mm)	Radiación Solar (W/m <sup>2</sup> )		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	22.2	18.1	14.8	5.4	1.1	794.5	86.0	68.4	47.0	0.0	1014.0	419.5	3.6
2	20.3	16.9	13.6	5.4	0.9	795.6	86.0	73.7	53.0	0.0	1303.0	429.7	3.4
3	18.4	15.8	13.7	4.0	0.6	796.6	89.0	82.9	75.0	0.6	990.0	231.5	1.8
4	20.2	16.2	13.1	4.9	1.1	796.5	91.0	79.6	62.0	0.4	1243.0	293.7	2.3
5	21.9	17.3	13.2	5.8	1.3	795.4	88.0	73.9	52.0	0.0	1257.0	503.6	4.1
6	20.7	17.0	13.9	4.9	0.8	794.7	89.0	80.5	61.0	0.0	1345.0	363.6	2.9
7	19.6	16.3	14.5	4.5	0.5	795.3	95.0	85.9	76.0	2.2	1223.0	250.6	1.8
8	17.3	14.8	12.4	8.5	0.8	797.6	98.0	91.8	80.0	36.2	1312.0	254.3	1.8
9	20.6	15.7	12.7	5.4	1.0	797.4	97.0	83.8	66.0	22.2	974.0	377.3	2.8
10	21.3	15.9	13.1	7.6	1.0	795.9	98.0	86.6	72.0	40.2	1248.0	444.8	3.2
11	20.1	15.6	13.1	4.9	0.4	797.6	96.0	89.3	69.0	2.4	1255.0	282.0	2.1
12	19.9	16.7	14.1	4.9	0.8	797.9	97.0	83.2	68.0	7.6	1104.0	272.8	2.0
13	21.8	17.8	14.9	5.4	1.2	796.2	85.0	72.3	47.0	0.0	1324.0	411.1	3.6
14	20.7	17.3	14.6	6.3	1.0	794.3	93.0	80.2	68.0	0.0	1239.0	344.8	2.7
15	20.9	17.2	14.4	4.0	0.6	795.0	92.0	79.0	58.0	0.0	1311.0	295.4	2.4
16	17.9	16.0	14.4	4.5	0.6	795.5	96.0	88.1	78.0	4.8	1396.0	212.5	1.5
17	18.7	16.1	13.9	2.7	0.4	795.9	96.0	87.6	75.0	7.8	1313.0	271.1	1.9
18	17.3	15.0	13.8	3.1	0.4	797.3	98.0	94.3	84.0	45.8	905.0	240.8	1.6
19	19.8	16.0	13.4	4.0	0.4	796.4	96.0	89.8	75.0	0.8	1329.0	293.2	2.0
20	19.7	16.0	13.6	4.0	0.6	796.0	99.0	89.6	66.0	13.6	1296.0	241.1	1.8
21	20.2	17.1	14.2	5.8	0.8	795.5	97.0	85.0	69.0	0.0	1304.0	317.7	2.4
22	20.9	16.9	14.6	4.5	0.6	794.8	98.0	87.9	67.0	1.6	1049.0	286.0	2.1
23	20.9	16.8	14.3	6.3	1.0	794.9	94.0	87.3	72.0	19.2	1218.0	316.1	2.1
24	19.1	16.0	14.4	4.9	1.0	795.1	98.0	88.9	80.0	17.0	1315.0	266.3	2.0
25	18.3	15.9	14.4	4.5	0.5	795.9	96.0	89.9	80.0	6.0	904.0	194.6	1.4
26	20.6	16.6	14.5	4.0	0.6	796.3	97.0	87.3	65.0	0.0	1141.0	268.3	2.1
27	21.8	17.8	13.9	5.8	1.0	796.0	92.0	74.7	56.0	0.0	1223.0	593.9	4.5
28	20.8	17.5	14.7	4.5	0.6	794.5	89.0	81.7	68.0	0.0	1178.0	318.6	2.5
29	19.8	16.6	14.7	5.8	0.7	794.0	96.0	84.4	72.0	5.4	1046.0	243.9	1.9
30	20.6	17.3	14.2	4.0	0.6	794.0	90.0	82.2	68.0	0.0	1129.0	346.0	2.6
<b>Mensual</b>	<b>22.2</b>	<b>16.5</b>	<b>12.4</b>	<b>8.5</b>	<b>0.8</b>	<b>795.8</b>	<b>99.0</b>	<b>83.7</b>	<b>47.0</b>	<b>233.8</b>	<b>1396.0</b>	<b>319.5</b>	<b>72.9</b>

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-10



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

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	OSO	O	SO	ONO	ESE	NNO	NO	E	SE	N	SSO	SSE	NE	NNE	S	ENE
F. R.	16%	11%	10%	10%	7%	7%	7%	5%	5%	4%	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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SEPTIEMBRE DE 2011

### JORNADA NOCTURNA - DIRECCIÓN DEL VIENTO SEGÚN LA ROSA DE LOS VIENTOS (Frecuencia relativa)

DIA	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	4%	2%	1%	3%	26%	31%	12%	6%	0%	0%	0%	0%	0%	10%	2%	2%
2	0%	0%	10%	2%	38%	21%	19%	2%	0%	0%	0%	0%	7%	0%	0%	0%
3	2%	0%	6%	0%	16%	43%	26%	2%	0%	1%	0%	3%	0%	0%	0%	0%
4	0%	3%	5%	3%	29%	51%	8%	1%	0%	0%	0%	0%	0%	0%	0%	1%
5	0%	0%	0%	3%	17%	43%	24%	5%	0%	1%	1%	1%	5%	1%	1%	0%
6	4%	1%	0%	7%	16%	34%	22%	4%	0%	3%	2%	3%	4%	0%	0%	0%
7	3%	0%	4%	15%	3%	24%	13%	3%	13%	0%	11%	8%	1%	1%	0%	0%
8	0%	0%	0%	1%	0%	6%	11%	31%	11%	1%	1%	33%	5%	1%	0%	0%
9	0%	1%	23%	1%	11%	29%	13%	5%	1%	2%	2%	1%	1%	0%	0%	0%
10	1%	13%	7%	17%	4%	15%	21%	8%	1%	1%	1%	3%	4%	3%	0%	0%
11	1%	3%	6%	8%	45%	17%	9%	6%	3%	0%	0%	0%	0%	0%	1%	1%
12	0%	0%	0%	18%	15%	47%	12%	1%	0%	0%	0%	3%	1%	3%	0%	0%
13	0%	0%	0%	2%	25%	60%	12%	1%	0%	0%	0%	0%	0%	0%	0%	0%
14	5%	1%	3%	10%	24%	29%	15%	8%	1%	1%	0%	2%	1%	1%	0%	0%
15	0%	1%	0%	2%	11%	42%	26%	10%	0%	0%	1%	0%	6%	0%	0%	0%
16	0%	0%	0%	1%	15%	35%	3%	0%	0%	1%	8%	7%	8%	16%	0%	6%
17	0%	0%	0%	9%	25%	18%	5%	7%	10%	5%	3%	2%	16%	0%	0%	0%
18	1%	4%	5%	4%	41%	11%	10%	1%	0%	0%	2%	17%	1%	0%	0%	3%
19	0%	0%	0%	0%	10%	39%	7%	4%	7%	0%	3%	29%	1%	0%	0%	0%
20	17%	7%	1%	0%	18%	19%	5%	1%	7%	3%	9%	0%	13%	2%	0%	0%
21	0%	5%	13%	3%	7%	39%	3%	1%	0%	1%	1%	1%	14%	9%	2%	1%
22	0%	0%	0%	1%	11%	21%	18%	15%	17%	3%	9%	3%	1%	2%	0%	0%
23	0%	3%	6%	1%	28%	44%	6%	3%	0%	0%	1%	0%	0%	6%	0%	3%
24	0%	0%	10%	7%	14%	38%	17%	9%	1%	3%	0%	0%	0%	1%	0%	0%
25	0%	1%	30%	10%	17%	37%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%
26	1%	1%	8%	1%	30%	31%	10%	1%	0%	0%	0%	13%	1%	3%	0%	0%
27	0%	0%	7%	2%	36%	33%	13%	3%	0%	0%	0%	0%	6%	0%	0%	0%
28	0%	1%	2%	20%	19%	24%	15%	8%	3%	0%	0%	5%	1%	1%	0%	0%
29	0%	0%	0%	0%	22%	40%	4%	2%	0%	0%	4%	1%	26%	0%	0%	0%
30	0%	0%	1%	10%	15%	45%	20%	1%	0%	0%	0%	2%	6%	0%	0%	1%
Mensual	1%	2%	5%	5%	20%	32%	13%	5%	3%	1%	2%	5%	4%	2%	0%	1%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ESE	E	SE	SSE	ENE	NE	OSO	O	S	SO	ONO	NNE	N	SSO	NNO	NO
F. R.	32%	20%	13%	5%	5%	5%	5%	4%	3%	2%	2%	2%	1%	1%	1%	0%

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