



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 EL CARMEN

CÓDIGO: EMM-06

OCTUBRE DE 2011

RESUMEN DIARIO Y MENSUAL DE VARIABLES METEOROLÓGICAS

Variables Día	Temperatura del Aire (°C)			V.V. (m/s)		P.B. (HPa)	Humedad Relativa (%)			Ll. (mm)	Radiación Solar (W/m ²)		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	23.4	16.5	13.4	3.6	0.4	793.3	92.0	84.6	60.0	15.0	1040.0	175.8	1.5
2	24.8	17.1	13.3	3.6	0.5	793.4	93.0	79.6	53.0	0.5	1304.0	370.7	2.8
3	25.9	17.7	13.9	4.0	0.7	793.6	95.0	80.2	51.0	6.6	1217.0	376.0	3.0
4	19.5	15.2	13.1	3.6	0.3	794.1	95.0	88.9	70.0	19.8	346.0	174.3	1.3
5	27.2	18.6	13.2	4.5	0.7	793.0	89.0	72.3	40.0	0.3	1184.0	630.9	4.8
6	25.7	18.2	13.7	4.9	1.0	792.7	95.0	76.6	44.0	13.0	1169.0	505.3	4.3
7	27.8	18.8	13.7	5.8	1.1	792.6	93.0	76.6	44.0	1.8	1179.0	477.8	3.8
8	21.2	16.0	13.8	3.6	0.7	793.0	95.0	88.5	70.0	9.7	598.0	181.0	1.3
9	23.4	17.2	13.6	4.0	0.6	792.9	94.0	80.7	60.0	0.3	921.0	298.2	2.0
10	21.2	16.6	13.4	3.6	0.6	793.7	95.0	84.6	64.0	36.1	1113.0	263.4	2.0
11	23.2	16.6	13.7	6.3	0.7	793.8	96.0	84.5	59.0	32.8	898.0	261.0	2.0
12	22.4	15.5	13.1	3.6	0.8	794.4	96.0	87.3	62.0	23.1	706.0	268.8	1.8
13	24.7	17.5	12.4	5.4	0.9	793.1	95.0	75.7	47.0	0.8	1032.0	557.7	4.3
14	25.4	16.0	12.8	5.8	0.9	793.2	95.0	82.9	50.0	40.1	1152.0	483.0	3.1
15	21.4	15.9	12.6	4.5	0.7	793.5	95.0	81.9	59.0	29.5	660.0	312.2	2.3
16	22.6	15.1	12.1	5.8	0.8	793.7	96.0	85.7	56.0	40.6	1124.0	261.6	2.0
17	21.4	14.0	12.5	4.0	0.6	793.8	96.0	91.3	65.0	32.8	1338.0	211.5	1.3
18	20.8	14.2	11.9	4.0	0.8	794.4	96.0	88.8	64.0	7.4	1209.0	294.0	1.8
19	24.5	16.2	11.6	3.6	0.8	795.3	86.0	67.2	33.0	0.5	1163.0	476.4	3.8
20	21.8	16.2	13.0	3.1	0.5	795.6	80.0	59.4	35.0	0.0	660.0	272.5	2.5
21	23.9	16.4	12.5	4.9	0.7	794.5	85.0	67.8	35.0	0.0	1190.0	422.4	3.6
22	25.4	17.2	13.0	4.5	0.8	793.4	92.0	66.9	33.0	0.0	1083.0	440.4	3.8
23	26.3	17.7	11.9	4.0	0.6	793.2	92.0	70.1	43.0	25.6	1124.0	420.4	3.6
24	25.4	17.8	14.0	4.0	0.8	793.6	95.0	76.9	40.0	0.0	1057.0	461.7	3.6
25	23.9	17.5	13.3	4.5	0.8	792.9	95.0	79.1	52.0	11.2	1242.0	405.1	3.3
26	22.6	17.3	13.4	3.1	0.5	791.4	95.0	80.2	62.0	1.5	1223.0	285.9	2.0
27	26.1	18.4	12.9	3.6	0.7	790.9	92.0	74.7	49.0	2.0	1087.0	493.4	4.1
28	20.4	16.0	13.8	2.7	0.4	792.0	95.0	88.5	71.0	46.0	666.0	204.5	1.0
29	22.3	15.1	13.6	2.2	0.2	792.6	96.0	90.2	64.0	13.7	1063.0	170.0	1.3
30	16.4	14.1	12.1	3.6	0.4	793.0	96.0	91.4	84.0	25.4	329.0	119.2	0.8
31	22.8	16.0	11.3	3.6	0.6	792.5	94.0	78.1	60.0	0.0	1173.0	405.7	3.1
Mensual	27.8	16.5	11.3	6.3	0.7	793.3	96.0	80.0	33.0	435.9	1338.0	344.5	81.8

Convenciones: V.V.: Velocidad del Viento P.B.: Presión Barométrica Ll.: Lluvia diaria ET.: Evapotranspiración. Nota: Datos resaltados en rojo están incompletos.



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OCTUBRE 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	1%	1%	0%	1%	0%	5%	10%	4%	7%	3%	11%	14%	17%	19%	5%	3%
2	2%	0%	1%	16%	1%	0%	0%	7%	1%	6%	13%	12%	17%	18%	6%	2%
3	22%	0%	0%	0%	0%	0%	0%	0%	3%	3%	12%	21%	24%	9%	6%	1%
4	0%	18%	0%	0%	0%	0%	0%	0%	0%	2%	13%	31%	17%	13%	4%	2%
5	0%	0%	0%	0%	13%	4%	0%	1%	1%	3%	13%	18%	20%	19%	7%	1%
6	5%	3%	4%	5%	1%	0%	1%	0%	1%	2%	4%	24%	19%	22%	8%	2%
7	1%	0%	6%	1%	10%	1%	0%	0%	0%	5%	7%	13%	29%	24%	3%	2%
8	0%	0%	3%	4%	8%	4%	1%	1%	0%	1%	10%	7%	28%	17%	8%	8%
9	2%	3%	11%	7%	3%	2%	2%	0%	0%	18%	9%	6%	13%	14%	9%	1%
10	1%	20%	0%	0%	0%	1%	7%	1%	7%	8%	4%	14%	9%	13%	7%	7%
11	5%	0%	12%	1%	0%	0%	2%	1%	6%	8%	16%	12%	21%	10%	2%	4%
12	13%	0%	0%	0%	0%	0%	0%	0%	0%	1%	15%	25%	21%	23%	3%	0%
13	1%	0%	0%	13%	2%	9%	1%	0%	1%	2%	1%	11%	16%	28%	10%	5%
14	0%	0%	0%	0%	9%	1%	1%	1%	5%	5%	8%	11%	27%	20%	10%	1%
15	0%	1%	0%	1%	19%	0%	1%	0%	1%	1%	1%	8%	31%	24%	10%	1%
16	0%	0%	0%	0%	0%	40%	6%	0%	0%	1%	6%	10%	16%	15%	6%	0%
17	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	22%	48%	15%	8%	2%	0%
18	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	10%	26%	31%	19%	9%	1%
19	0%	0%	0%	0%	17%	6%	0%	0%	0%	3%	9%	6%	20%	31%	8%	1%
20	0%	0%	0%	0%	0%	19%	3%	8%	1%	3%	6%	22%	23%	12%	1%	0%
21	1%	0%	0%	0%	0%	17%	0%	0%	0%	1%	27%	17%	16%	15%	6%	2%
22	0%	0%	0%	0%	3%	6%	6%	1%	1%	1%	22%	19%	22%	16%	3%	0%
23	8%	3%	1%	5%	15%	1%	1%	3%	4%	6%	15%	13%	13%	8%	3%	3%
24	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	33%	19%	19%	17%	6%	0%
25	1%	0%	0%	0%	0%	1%	3%	1%	2%	21%	15%	23%	17%	13%	6%	0%
26	0%	0%	0%	0%	12%	1%	0%	3%	3%	14%	13%	19%	22%	10%	4%	0%
27	1%	0%	0%	1%	1%	3%	3%	1%	1%	3%	4%	15%	23%	38%	6%	1%
28	22%	0%	0%	0%	0%	0%	0%	1%	3%	8%	12%	25%	13%	12%	3%	1%
29	0%	0%	8%	5%	6%	10%	0%	0%	1%	0%	3%	35%	11%	22%	0%	0%
30	13%	16%	4%	0%	1%	9%	7%	1%	2%	0%	5%	13%	10%	8%	6%	6%
31	3%	0%	0%	0%	3%	10%	10%	3%	3%	8%	8%	15%	19%	11%	6%	3%
Mensual	3%	2%	2%	2%	4%	5%	2%	1%	2%	5%	11%	18%	19%	17%	6%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	O	OSO	ONO	SO	NO	SSO	ESE	E	N	SE	NNE	ENE	NNO	S	NE	SSE
F. R.	19%	18%	17%	11%	6%	5%	5%	4%	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.



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OCTUBRE 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	0%	0%	0%	0%	0%	56%	1%	4%	0%	0%	1%	0%	39%	0%	0%	0%
2	0%	0%	19%	24%	1%	10%	0%	0%	6%	1%	19%	1%	8%	2%	8%	0%
3	40%	0%	0%	10%	0%	6%	13%	0%	1%	1%	10%	14%	1%	5%	0%	0%
4	1%	33%	1%	5%	1%	0%	0%	0%	0%	0%	8%	0%	50%	0%	1%	1%
5	0%	23%	1%	3%	22%	6%	0%	3%	0%	3%	0%	2%	39%	0%	0%	0%
6	0%	0%	0%	2%	9%	13%	8%	1%	6%	18%	3%	13%	12%	14%	0%	2%
7	6%	0%	1%	2%	4%	19%	9%	6%	19%	1%	0%	1%	8%	17%	6%	1%
8	2%	1%	3%	2%	4%	8%	8%	1%	1%	1%	11%	1%	10%	19%	25%	1%
9	0%	0%	0%	6%	5%	3%	17%	0%	0%	10%	8%	0%	42%	8%	1%	0%
10	3%	26%	11%	3%	0%	31%	0%	0%	0%	0%	6%	0%	17%	0%	3%	1%
11	0%	0%	35%	2%	0%	39%	6%	1%	2%	0%	1%	7%	8%	0%	0%	0%
12	1%	0%	0%	11%	32%	13%	6%	0%	0%	0%	29%	6%	2%	0%	0%	0%
13	0%	0%	6%	4%	15%	31%	10%	0%	1%	0%	8%	0%	8%	6%	2%	8%
14	17%	1%	0%	4%	23%	26%	7%	2%	0%	0%	1%	1%	10%	7%	1%	0%
15	2%	2%	2%	1%	56%	3%	1%	0%	1%	0%	24%	0%	0%	2%	6%	1%
16	0%	0%	0%	0%	6%	28%	3%	0%	0%	4%	6%	19%	8%	16%	6%	2%
17	0%	0%	0%	11%	9%	3%	1%	0%	0%	0%	28%	47%	1%	0%	0%	0%
18	0%	0%	0%	1%	6%	8%	19%	0%	0%	3%	11%	17%	1%	30%	2%	1%
19	0%	0%	0%	8%	13%	53%	21%	0%	0%	0%	0%	0%	4%	0%	0%	0%
20	0%	0%	0%	0%	2%	42%	8%	5%	0%	0%	0%	0%	35%	5%	3%	0%
21	2%	0%	0%	0%	0%	50%	0%	0%	0%	0%	23%	19%	3%	1%	1%	0%
22	6%	0%	0%	0%	1%	48%	1%	0%	0%	0%	33%	3%	0%	0%	0%	9%
23	22%	0%	0%	0%	41%	9%	0%	0%	0%	0%	19%	1%	1%	1%	1%	5%
24	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	5%	34%	11%	2%	9%
25	3%	3%	4%	13%	0%	0%	0%	0%	0%	3%	0%	3%	52%	13%	2%	3%
26	0%	0%	0%	0%	17%	6%	3%	6%	14%	0%	8%	15%	31%	0%	0%	0%
27	0%	0%	0%	0%	8%	8%	4%	10%	0%	0%	1%	1%	48%	19%	0%	0%
28	1%	2%	0%	0%	9%	0%	0%	1%	1%	6%	26%	51%	3%	0%	0%	0%
29	0%	0%	15%	35%	0%	0%	0%	0%	0%	29%	1%	20%	0%	0%	0%	0%
30	0%	50%	0%	48%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
31	17%	5%	2%	1%	76%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mensual	4%	5%	3%	6%	12%	17%	5%	1%	2%	3%	10%	8%	15%	6%	2%	1%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ESE	O	E	SO	OSO	ENE	ONO	SE	NNE	N	NE	SSO	NO	S	NNO	SSE
F. R.	17%	15%	12%	10%	8%	6%	6%	5%	5%	4%	3%	3%	2%	2%	1%	1%

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