



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

NOVIEMBRE 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	27.1	18.2	12.4	4.0	0.5	792.3	88.0	69.2	40.0	0.0	1089.0	428.5	3.6
2	27.2	19.7	13.9	4.5	0.8	792.7	89.0	70.3	44.0	0.3	1106.0	500.4	4.3
3	23.9	17.8	15.0	3.6	0.7	793.1	92.0	80.4	60.0	0.0	598.0	257.8	2.3
4	25.9	18.4	13.2	4.5	0.9	792.9	94.0	73.9	44.0	64.0	1082.0	410.0	3.3
5	28.2	18.4	13.3	4.0	0.9	792.5	93.0	74.7	43.0	1.3	1135.0	486.6	4.1
6	24.7	17.6	14.2	3.6	0.5	792.8	93.0	79.0	54.0	27.7	1196.0	349.7	2.8
7	24.4	17.5	13.9	3.6	0.6	792.6	94.0	78.5	56.0	19.8	1081.0	414.0	2.8
8	18.1	15.3	14.1	2.2	0.2	793.1	95.0	90.2	78.0	26.9	281.0	144.4	1.0
9	23.7	17.0	13.0	3.6	0.6	793.0	96.0	83.1	55.0	2.8	863.0	349.3	2.6
10	22.3	16.6	13.8	3.1	0.7	792.9	95.0	85.9	66.0	32.5	1266.0	319.4	2.0
11	17.6	15.1	13.7	2.2	0.3	793.0	95.0	90.0	81.0	12.2	382.0	118.5	0.8
12	15.5	14.0	12.8	3.6	0.6	793.6	97.0	93.9	88.0	43.2	224.0	103.6	0.5
13	23.8	16.1	12.4	3.1	0.4	793.2	96.0	83.3	60.0	1.0	1160.0	292.3	2.3
14	25.6	17.7	12.3	4.0	0.6	792.5	91.0	76.9	50.0	0.0	1048.0	372.6	3.1
15	24.1	17.1	13.2	4.9	0.7	792.4	94.0	78.3	54.0	1.5	1074.0	375.8	3.0
16	23.2	16.1	12.8	4.0	0.6	792.5	95.0	84.2	60.0	2.8	979.0	299.4	2.0
17	22.7	16.3	12.1	4.5	0.8	792.5	95.0	83.7	59.0	20.3	1022.0	414.4	3.1
18	23.2	16.0	13.0	4.9	0.7	793.2	96.0	84.8	58.0	48.3	1118.0	411.8	2.8
19	24.6	17.2	11.9	7.6	0.9	793.4	94.0	78.0	46.0	29.5	1132.0	517.1	4.1
20	23.2	15.4	13.3	3.1	0.5	793.4	95.0	87.9	61.0	56.1	1359.0	197.9	1.5
21	24.1	16.9	11.7	4.5	0.8	793.2	95.0	80.7	53.0	16.0	1075.0	461.1	3.3
22	21.3	15.5	13.3	3.6	0.7	793.7	95.0	87.5	68.0	57.9	1106.0	276.9	1.8
23	26.1	17.0	12.6	4.0	0.6	793.9	90.0	78.8	47.0	0.0	1044.0	362.1	2.8
24	19.6	15.1	13.1	3.1	0.3	794.5	95.0	89.9	73.0	37.4	423.0	155.1	1.0
25	24.5	16.8	11.7	3.6	0.4	793.2	94.0	78.9	50.0	0.0	1230.0	337.1	2.8
26	23.2	17.0	12.9	4.0	0.4	792.5	88.0	75.8	58.0	0.3	965.0	286.0	2.3
27	25.6	16.7	13.2	4.9	0.7	791.6	93.0	78.4	52.0	1.8	1075.0	412.5	3.1
28	22.4	16.4	12.9	4.5	0.8	792.0	95.0	81.4	61.0	38.9	825.0	330.4	2.5
29	21.6	15.0	13.6	4.9	0.5	793.1	96.0	89.5	65.0	8.9	935.0	211.5	1.3
30	23.7	16.4	13.4	4.5	0.9	792.7	96.0	85.5	59.0	40.6	1100.0	383.5	2.3
31													
Mensual	28.2	16.7	11.7	7.6	0.6	792.9	97.0	81.8	40.0	591.9	1359.0	332.7	75.0

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-06

NOVIEMBRE 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%	0%	0%	0%	7%	13%	6%	0%	1%	1%	6%	24%	16%	24%	2%	1%
2	1%	0%	0%	6%	1%	3%	0%	1%	3%	3%	3%	16%	31%	20%	10%	1%
3	1%	0%	1%	1%	7%	4%	1%	2%	6%	7%	8%	17%	18%	20%	2%	4%
4	1%	1%	1%	0%	3%	1%	6%	2%	0%	6%	19%	14%	19%	22%	4%	1%
5	2%	5%	1%	0%	0%	2%	15%	2%	1%	1%	1%	13%	22%	24%	10%	2%
6	3%	1%	1%	0%	0%	3%	3%	1%	14%	2%	22%	15%	17%	15%	2%	1%
7	6%	1%	1%	1%	4%	1%	12%	6%	2%	7%	6%	13%	18%	13%	7%	2%
8	0%	0%	0%	34%	0%	0%	1%	1%	2%	10%	14%	24%	13%	0%	0%	0%
9	1%	0%	0%	0%	0%	20%	0%	3%	0%	1%	6%	6%	24%	25%	15%	1%
10	6%	0%	1%	1%	0%	0%	0%	0%	14%	3%	14%	13%	24%	17%	5%	4%
11	0%	0%	0%	0%	0%	17%	0%	0%	0%	4%	42%	8%	19%	8%	2%	0%
12	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	28%	53%	11%	2%	1%	0%
13	1%	0%	0%	7%	8%	4%	0%	1%	1%	1%	23%	11%	13%	13%	13%	4%
14	2%	3%	3%	3%	0%	0%	0%	19%	0%	2%	12%	9%	17%	19%	8%	2%
15	6%	5%	0%	1%	17%	3%	6%	1%	0%	8%	0%	8%	15%	15%	7%	10%
16	0%	0%	0%	0%	10%	1%	0%	0%	1%	1%	5%	20%	42%	14%	5%	1%
17	0%	0%	0%	0%	17%	0%	1%	1%	1%	1%	5%	5%	33%	30%	8%	0%
18	1%	1%	0%	1%	5%	6%	6%	1%	1%	4%	15%	17%	21%	16%	4%	1%
19	0%	0%	0%	0%	16%	0%	0%	0%	0%	1%	9%	11%	21%	26%	14%	1%
20	1%	1%	3%	3%	17%	3%	0%	0%	0%	0%	26%	6%	15%	15%	10%	1%
21	3%	0%	0%	0%	0%	2%	0%	15%	0%	1%	4%	10%	15%	24%	15%	11%
22	0%	0%	2%	0%	1%	8%	5%	0%	0%	1%	22%	19%	19%	18%	4%	0%
23	2%	0%	0%	0%	13%	1%	12%	1%	6%	0%	3%	16%	13%	21%	9%	4%
24	0%	0%	0%	0%	6%	0%	0%	0%	25%	0%	26%	32%	3%	8%	0%	0%
25	0%	0%	0%	13%	0%	0%	0%	0%	2%	3%	31%	21%	16%	10%	4%	1%
26	1%	0%	0%	21%	1%	16%	15%	3%	5%	2%	6%	2%	9%	12%	5%	3%
27	18%	0%	1%	0%	9%	11%	9%	1%	1%	1%	10%	11%	13%	7%	5%	3%
28	3%	0%	0%	0%	0%	0%	18%	0%	1%	5%	19%	18%	13%	21%	3%	0%
29	1%	0%	15%	0%	0%	0%	0%	1%	3%	10%	25%	20%	11%	8%	4%	1%
30	0%	0%	0%	0%	0%	0%	2%	3%	1%	1%	6%	20%	26%	36%	6%	0%
31																
Mensual	2%	1%	1%	3%	5%	4%	4%	2%	3%	3%	14%	16%	18%	17%	6%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	O	ONO	OSO	SO	NO	E	ESE	SE	ENE	S	SSO	SSE	N	NNO	NE	NNE
F. R.	18%	17%	16%	14%	6%	5%	4%	4%	3%	3%	3%	2%	2%	2%	1%	1%

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



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CÓDIGO: EMM-06

NOVIEMBRE 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%	28%	42%	3%	0%	0%	0%	15%	6%	6%	0%	0%	0%
2	0%	3%	0%	0%	6%	12%	45%	19%	3%	1%	0%	7%	2%	2%	0%	0%
3	4%	3%	3%	8%	10%	11%	6%	20%	1%	1%	0%	0%	19%	9%	3%	2%
4	1%	2%	2%	3%	33%	8%	18%	3%	0%	0%	0%	6%	1%	22%	1%	1%
5	1%	15%	3%	15%	24%	13%	8%	1%	1%	0%	0%	0%	8%	0%	9%	3%
6	1%	0%	0%	0%	17%	43%	24%	0%	1%	0%	11%	0%	0%	2%	1%	0%
7	0%	0%	0%	0%	49%	7%	0%	11%	0%	1%	18%	0%	1%	3%	10%	0%
8	0%	0%	0%	28%	0%	0%	0%	0%	0%	0%	3%	10%	35%	1%	15%	7%
9	0%	0%	0%	0%	0%	8%	2%	0%	0%	0%	0%	13%	40%	35%	0%	2%
10	0%	2%	12%	14%	12%	1%	0%	0%	8%	0%	0%	8%	4%	39%	0%	0%
11	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	39%	0%	0%	0%	11%	0%
12	0%	0%	0%	0%	5%	8%	3%	0%	0%	13%	32%	21%	2%	0%	17%	0%
13	0%	0%	1%	3%	1%	2%	1%	0%	32%	0%	43%	17%	0%	1%	0%	0%
14	0%	0%	13%	0%	0%	19%	3%	42%	8%	0%	15%	0%	0%	0%	0%	0%
15	1%	3%	8%	10%	1%	19%	0%	0%	13%	0%	8%	3%	0%	1%	0%	34%
16	1%	0%	0%	28%	4%	3%	1%	0%	7%	7%	1%	11%	32%	1%	3%	0%
17	0%	0%	0%	1%	29%	1%	21%	1%	0%	17%	5%	2%	15%	8%	0%	0%
18	0%	1%	6%	0%	4%	3%	5%	10%	17%	0%	1%	50%	1%	0%	0%	3%
19	0%	1%	1%	1%	10%	7%	8%	3%	2%	3%	44%	8%	4%	6%	0%	0%
20	3%	2%	0%	7%	0%	0%	0%	0%	0%	0%	22%	22%	10%	0%	21%	13%
21	0%	0%	0%	0%	26%	1%	0%	14%	0%	0%	1%	8%	0%	50%	0%	0%
22	0%	0%	0%	0%	47%	3%	0%	0%	0%	0%	10%	2%	0%	38%	0%	0%
23	0%	0%	0%	0%	50%	0%	34%	16%	0%	0%	0%	0%	0%	0%	0%	0%
24	6%	0%	0%	0%	6%	11%	1%	2%	0%	0%	2%	53%	9%	3%	2%	6%
25	0%	0%	0%	17%	0%	11%	7%	0%	0%	0%	32%	33%	0%	0%	0%	0%
26	0%	0%	35%	1%	19%	27%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%
27	8%	6%	0%	0%	22%	28%	17%	1%	1%	12%	0%	0%	0%	0%	0%	4%
28	6%	10%	6%	10%	26%	3%	1%	4%	1%	0%	0%	3%	0%	5%	15%	10%
29	0%	0%	50%	0%	0%	0%	0%	0%	0%	13%	0%	0%	1%	33%	0%	3%
30	0%	1%	1%	0%	1%	7%	3%	0%	1%	0%	3%	1%	3%	57%	3%	21%
31																
Mensual	1%	2%	5%	5%	14%	12%	8%	5%	3%	2%	10%	9%	7%	11%	4%	4%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	E	ESE	ONO	SO	OSO	SE	O	SSE	ENE	NE	NO	NNO	S	SSO	NNE	N
F. R.	14%	12%	11%	10%	9%	8%	7%	5%	5%	5%	4%	4%	3%	2%	2%	1%

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