



# 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

JUNIO 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 <sup>2</sup> )		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	20.1	16.2	15.0	3.6	0.5	793.6	96.0	91.1	75.0	15.2	426.0	164.3	1.0
2	18.2	15.5	13.7	3.1	0.5	794.4	96.0	90.7	81.0	49.3	417.0	148.4	1.0
3	21.4	16.2	13.3	2.2	0.3	794.5	95.0	87.1	67.0	7.6	522.0	216.2	1.5
4	23.3	16.2	13.6	4.0	0.6	794.6	95.0	86.4	65.0	17.8	662.0	228.2	1.5
5	26.0	18.1	13.7	5.4	0.8	794.3	92.0	77.1	52.0	0.0	1114.0	368.9	3.3
6	23.4	17.9	14.7	4.0	0.5	794.5	95.0	81.6	57.0	2.0	1118.0	254.3	2.0
7	23.8	17.0	14.4	3.1	0.5	794.5	95.0	85.8	55.0	4.3	1099.0	243.6	1.5
8	26.9	18.9	13.6	4.0	0.5	794.2	92.0	74.9	46.0	0.0	1016.0	366.5	3.3
9	26.8	19.6	14.8	4.0	0.6	794.0	89.0	72.9	48.0	0.0	1036.0	357.4	3.3
10	28.3	20.0	15.1	4.5	0.7	793.2	90.0	72.4	43.0	0.0	1026.0	383.3	3.6
11	27.7	20.3	15.3	4.0	0.7	792.2	92.0	69.7	42.0	0.0	794.0	410.1	3.6
12	27.8	20.7	15.3	4.9	0.8	791.7	87.0	67.7	36.0	0.0	984.0	455.4	4.1
13	27.9	20.6	15.2	4.9	0.8	792.3	92.0	69.9	41.0	0.3	1076.0	458.1	4.1
14	24.2	18.1	14.9	3.6	0.4	792.7	88.0	78.4	54.0	0.5	821.0	200.4	1.8
15	26.1	18.8	14.1	4.0	0.6	792.6	86.0	70.5	50.0	0.0	1019.0	369.4	3.3
16	23.6	17.4	14.4	4.0	0.5	793.2	91.0	80.1	60.0	0.3	673.0	225.3	2.0
17	23.8	17.5	14.6	3.6	0.2	793.7	92.0	81.3	57.0	0.0	804.0	223.1	1.8
18	24.2	17.9	14.2	4.0	0.6	794.5	90.0	78.7	56.0	0.0	998.0	307.8	2.5
19	22.5	17.2	13.9	2.7	0.3	794.0	91.0	81.2	59.0	0.5	517.0	184.2	1.5
20	24.9	17.0	13.6	3.1	0.4	793.2	90.0	78.3	53.0	1.3	1137.0	282.8	2.3
21	26.6	19.0	12.4	4.0	0.7	792.9	88.0	69.1	42.0	0.3	1030.0	478.6	4.1
22	25.6	18.8	14.8	4.5	0.9	793.3	92.0	75.4	54.0	15.0	1145.0	349.2	3.0
23	23.4	16.9	15.0	2.7	0.3	793.3	94.0	86.6	61.0	2.8	1092.0	216.0	1.5
24	22.1	17.2	14.1	3.1	0.4	792.6	95.0	84.0	64.0	2.0	636.0	218.9	1.8
25	20.2	15.6	13.7	4.5	0.6	793.5	95.0	87.7	72.0	7.9	589.0	176.2	1.0
26	24.4	18.1	13.8	3.6	0.5	793.3	95.0	78.7	54.0	0.0	1182.0	395.5	3.0
27	24.6	17.6	13.9	3.1	0.7	793.5	95.0	78.8	52.0	2.0	1109.0	295.8	2.3
28	27.1	19.2	13.2	4.0	0.6	793.0	85.0	67.5	44.0	0.0	1038.0	483.5	4.3
29	25.1	17.8	13.7	4.0	0.4	792.8	89.0	76.4	51.0	0.0	1009.0	257.4	2.3
30	24.0	16.5	13.6	3.6	0.5	792.7	93.0	80.8	56.0	2.8	823.0	237.0	1.8
<b>Mensual</b>	<b>28.3</b>	<b>17.9</b>	<b>12.4</b>	<b>5.4</b>	<b>0.5</b>	<b>793.4</b>	<b>96.0</b>	<b>78.7</b>	<b>36.0</b>	<b>131.8</b>	<b>1182.0</b>	<b>298.5</b>	<b>74.2</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-06

JUNIO 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%	0%	0%	0%	8%	17%	3%	0%	25%	1%	19%	13%	13%	1%	0%
2	6%	16%	1%	6%	3%	6%	0%	0%	0%	4%	1%	11%	8%	22%	12%	4%
3	6%	1%	1%	3%	1%	11%	0%	6%	0%	0%	18%	9%	17%	19%	6%	3%
4	0%	13%	0%	0%	0%	13%	3%	1%	0%	1%	3%	17%	20%	20%	8%	1%
5	3%	1%	1%	0%	21%	0%	0%	0%	0%	0%	0%	5%	17%	32%	16%	6%
6	0%	0%	0%	0%	0%	0%	2%	2%	1%	1%	10%	48%	16%	15%	4%	1%
7	1%	1%	1%	1%	0%	0%	0%	0%	0%	2%	13%	21%	32%	21%	7%	1%
8	0%	0%	0%	1%	15%	1%	3%	0%	1%	3%	13%	19%	19%	17%	6%	2%
9	1%	0%	8%	0%	1%	0%	0%	0%	1%	3%	10%	25%	19%	15%	9%	8%
10	0%	0%	0%	0%	0%	4%	8%	5%	1%	4%	15%	23%	19%	20%	1%	0%
11	0%	0%	0%	7%	8%	0%	0%	0%	1%	3%	16%	15%	24%	17%	9%	0%
12	2%	0%	7%	0%	1%	5%	1%	1%	1%	7%	3%	15%	24%	22%	10%	3%
13	2%	1%	0%	3%	1%	1%	0%	0%	2%	5%	6%	23%	19%	21%	10%	7%
14	2%	10%	1%	1%	1%	1%	0%	0%	3%	6%	3%	24%	22%	14%	10%	1%
15	1%	0%	0%	0%	10%	0%	0%	0%	1%	1%	14%	33%	16%	19%	2%	2%
16	0%	0%	0%	0%	0%	0%	0%	0%	1%	22%	6%	26%	34%	10%	1%	0%
17	0%	0%	0%	0%	0%	0%	5%	2%	0%	1%	6%	28%	44%	8%	4%	2%
18	0%	0%	0%	0%	0%	8%	5%	1%	0%	0%	7%	23%	34%	15%	6%	1%
19	8%	10%	2%	0%	2%	1%	7%	0%	7%	1%	6%	13%	23%	17%	3%	0%
20	3%	1%	0%	1%	1%	15%	2%	0%	6%	1%	1%	3%	42%	17%	8%	1%
21	5%	1%	1%	0%	1%	0%	0%	0%	0%	1%	10%	24%	24%	27%	3%	2%
22	1%	0%	0%	0%	0%	6%	1%	4%	8%	3%	9%	17%	17%	24%	9%	0%
23	0%	0%	0%	0%	0%	0%	11%	0%	1%	2%	15%	34%	10%	22%	5%	0%
24	0%	0%	0%	4%	4%	6%	1%	0%	0%	1%	6%	32%	15%	22%	5%	3%
25	1%	11%	0%	0%	0%	2%	1%	9%	0%	0%	8%	23%	20%	20%	3%	3%
26	0%	12%	0%	4%	0%	0%	1%	8%	1%	1%	11%	19%	13%	22%	8%	0%
27	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	8%	16%	13%	47%	9%	5%
28	0%	0%	0%	7%	1%	6%	1%	0%	0%	3%	14%	26%	17%	17%	7%	1%
29	1%	1%	0%	0%	2%	13%	6%	1%	1%	4%	8%	10%	23%	23%	7%	1%
30	1%	1%	2%	3%	11%	15%	2%	0%	5%	1%	5%	6%	17%	18%	8%	5%
Mensual	1%	3%	1%	1%	3%	4%	3%	1%	1%	4%	8%	20%	21%	20%	7%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	O	OSO	ONO	SO	NO	ESE	SSO	E	NNE	SE	NNO	N	SSE	ENE	S	NE
F. R.	21%	20%	20%	8%	7%	4%	4%	3%	3%	3%	2%	1%	1%	1%	1%	1%

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)

DIA	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	0%	0%	0%	7%	0%	0%	19%	1%	1%	3%	29%	34%	6%	0%	0%	0%
2	0%	1%	5%	9%	3%	7%	6%	4%	0%	8%	24%	26%	6%	1%	0%	0%
3	1%	0%	6%	5%	3%	10%	13%	0%	0%	0%	0%	50%	0%	9%	2%	1%
4	13%	11%	5%	3%	42%	4%	1%	1%	0%	0%	1%	3%	0%	0%	16%	1%
5	2%	0%	0%	0%	50%	0%	6%	2%	8%	0%	1%	3%	6%	17%	5%	1%
6	3%	16%	0%	1%	13%	8%	3%	0%	0%	3%	7%	22%	13%	3%	1%	7%
7	0%	0%	0%	0%	3%	28%	0%	0%	0%	0%	1%	21%	44%	3%	0%	0%
8	0%	0%	0%	0%	41%	0%	6%	3%	0%	0%	0%	1%	38%	11%	1%	0%
9	1%	0%	0%	1%	40%	5%	31%	1%	0%	0%	0%	0%	1%	15%	6%	1%
10	3%	0%	0%	31%	8%	0%	0%	11%	0%	0%	0%	0%	1%	16%	11%	19%
11	1%	0%	0%	17%	7%	15%	0%	3%	8%	0%	2%	0%	17%	20%	7%	3%
12	11%	1%	10%	28%	0%	0%	0%	0%	0%	32%	7%	0%	1%	2%	4%	3%
13	3%	1%	0%	10%	0%	17%	1%	1%	1%	20%	1%	0%	10%	28%	3%	3%
14	0%	33%	0%	26%	6%	0%	0%	0%	0%	0%	0%	0%	36%	0%	0%	0%
15	0%	0%	0%	10%	47%	7%	13%	0%	7%	0%	0%	4%	1%	2%	9%	0%
16	0%	0%	0%	1%	1%	0%	6%	8%	2%	34%	0%	5%	40%	3%	0%	0%
17	0%	0%	0%	0%	6%	0%	0%	6%	38%	0%	0%	0%	50%	0%	0%	0%
18	0%	0%	9%	0%	1%	6%	0%	33%	1%	0%	0%	3%	30%	16%	1%	0%
19	1%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92%	1%	0%	0%
20	0%	1%	4%	3%	23%	16%	0%	1%	2%	1%	0%	0%	50%	0%	0%	0%
21	18%	0%	0%	0%	28%	13%	1%	0%	9%	1%	0%	3%	19%	6%	2%	0%
22	1%	0%	0%	0%	2%	50%	15%	1%	1%	1%	3%	8%	2%	7%	6%	3%
23	0%	0%	0%	0%	0%	0%	16%	0%	0%	0%	0%	57%	0%	1%	26%	0%
24	1%	0%	0%	0%	4%	15%	0%	0%	0%	0%	0%	50%	0%	3%	24%	3%
25	1%	24%	4%	1%	0%	13%	37%	0%	0%	0%	1%	13%	1%	3%	1%	0%
26	31%	3%	0%	0%	0%	20%	16%	0%	0%	10%	6%	6%	0%	9%	0%	0%
27	1%	0%	0%	0%	1%	35%	1%	1%	0%	16%	1%	15%	3%	12%	8%	6%
28	0%	0%	0%	1%	38%	21%	14%	0%	0%	0%	18%	9%	0%	0%	0%	0%
29	0%	0%	0%	0%	35%	28%	0%	0%	3%	0%	0%	0%	13%	21%	0%	0%
30	0%	6%	1%	8%	30%	13%	3%	19%	0%	0%	0%	1%	1%	1%	8%	10%
Mensual	3%	3%	1%	5%	14%	11%	7%	3%	3%	4%	3%	11%	16%	7%	5%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	O	E	OSO	ESE	SE	ONO	ENE	NO	SSO	NNE	SO	SSE	N	S	NNO	NE
F. R.	16%	14%	11%	11%	7%	7%	5%	5%	4%	3%	3%	3%	3%	3%	2%	1%

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