



# 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 LA PALMA

CÓDIGO: EMM-09

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	25.8	21.3	17.6	2.2	0.2	812.2	86.0	69.4	47.0	0.0	958.0	480.1	4.0
2	24.8	19.9	16.5	2.2	0.2	813.5	90.0	76.2	48.0	0.0	1250.0	437.8	3.6
3	21.6	18.2	16.6	1.3	0.1	814.9	93.0	88.3	70.0	1.2	896.0	225.4	1.6
4	23.2	18.6	15.2	1.8	0.1	814.5	97.0	84.9	64.0	1.2	795.0	276.1	2.1
5	25.8	20.1	15.3	2.7	0.3	813.1	94.0	79.0	56.0	0.0	1230.0	527.8	4.1
6	23.4	19.7	16.3	4.0	0.3	812.7	94.0	83.6	69.0	0.0	1250.0	332.6	2.6
7	23.6	18.9	16.4	2.7	0.2	813.5	98.0	90.8	73.0	2.8	1116.0	291.5	2.1
8	20.9	17.1	15.1	4.9	0.4	816.1	98.0	95.8	84.0	41.8	768.0	215.7	1.6
9	24.1	17.8	14.8	6.3	0.5	815.5	98.0	90.7	75.0	9.6	1095.0	382.2	2.8
10	24.9	18.4	15.3	4.9	0.4	813.9	98.0	89.9	69.0	20.8	1280.0	522.8	3.7
11	22.1	18.1	14.9	1.8	0.1	815.7	98.0	92.7	81.0	2.0	1345.0	365.8	2.6
12	24.3	19.5	16.2	1.8	0.2	815.6	98.0	86.7	64.0	15.4	1223.0	328.6	2.5
13	26.0	20.7	17.2	2.2	0.2	813.8	88.0	75.4	54.0	0.0	1197.0	427.7	3.6
14	25.5	20.2	16.9	2.7	0.3	812.2	97.0	83.5	67.0	0.6	1148.0	439.8	3.4
15	24.6	19.9	16.3	1.8	0.1	812.9	97.0	85.3	62.0	0.6	1252.0	344.8	2.7
16	21.1	18.3	16.3	1.3	0.1	814.0	98.0	93.7	85.0	5.6	673.0	215.9	1.5
17	21.4	18.3	15.8	2.2	0.2	814.1	98.0	93.6	88.0	5.8	960.0	235.8	1.8
18	21.0	17.3	15.7	2.7	0.2	815.8	98.0	95.9	79.0	33.6	606.0	256.3	1.7
19	22.4	18.1	15.0	2.2	0.2	814.6	98.0	94.5	74.0	19.4	800.0	286.7	2.2
20	23.5	18.6	15.8	1.3	0.1	814.1	98.0	91.1	71.0	16.8	1350.0	312.4	2.2
21	24.6	19.9	15.9	2.2	0.1	813.0	97.0	87.4	67.0	0.0	1155.0	387.1	3.0
22	22.6	19.3	16.6	2.7	0.2	813.1	98.0	89.8	75.0	0.8	1332.0	334.8	2.5
23	24.6	19.9	16.7	4.9	0.4	812.9	96.0	87.2	72.0	0.4	1160.0	362.5	2.7
24	22.2	18.8	16.6	4.5	0.4	812.9	98.0	91.4	77.0	1.6	1195.0	256.6	2.0
25	20.6	18.4	16.7	1.8	0.1	813.6	97.0	93.2	84.0	3.6	856.0	207.6	1.4
26	23.9	19.2	16.5	2.2	0.1	814.2	97.0	90.6	72.0	7.8	1352.0	308.6	2.3
27	26.1	20.4	16.2	3.1	0.3	813.8	95.0	78.8	51.0	0.0	1144.0	570.1	4.5
28	24.1	20.2	16.7	2.7	0.2	812.5	94.0	83.2	64.0	0.0	1150.0	344.3	2.7
29	22.7	19.2	16.7	4.9	0.4	812.0	97.0	88.7	73.0	0.6	1063.0	290.7	2.1
30	23.8	19.7	15.8	2.7	0.2	812.1	96.0	86.8	67.0	0.0	1146.0	381.9	2.9
<b>Mensual</b>	<b>26.1</b>	<b>19.1</b>	<b>14.8</b>	<b>6.3</b>	<b>0.2</b>	<b>813.8</b>	<b>98.0</b>	<b>87.3</b>	<b>47.0</b>	<b>192.0</b>	<b>1352.0</b>	<b>345.0</b>	<b>78.4</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-09

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	29%	4%	8%	1%	0%	1%	6%	7%	0%	0%	0%	1%	4%	12%	7%	19%
2	16%	2%	6%	1%	1%	2%	0%	10%	1%	10%	6%	7%	3%	3%	12%	20%
3	4%	2%	1%	5%	2%	5%	19%	1%	6%	5%	3%	21%	3%	0%	10%	13%
4	11%	21%	2%	5%	14%	8%	10%	2%	1%	2%	5%	1%	4%	0%	2%	13%
5	8%	0%	1%	0%	0%	0%	0%	1%	0%	4%	14%	27%	18%	10%	10%	8%
6	5%	1%	1%	3%	2%	0%	1%	6%	9%	11%	9%	24%	8%	10%	5%	4%
7	10%	1%	7%	1%	8%	0%	2%	3%	8%	19%	12%	10%	6%	1%	4%	7%
8	5%	0%	0%	0%	2%	4%	3%	8%	10%	4%	12%	20%	13%	8%	7%	3%
9	3%	6%	2%	1%	6%	0%	0%	17%	0%	1%	1%	16%	17%	7%	10%	13%
10	11%	3%	0%	1%	1%	1%	1%	8%	12%	1%	3%	4%	17%	12%	8%	16%
11	25%	6%	17%	1%	2%	1%	0%	0%	0%	0%	0%	3%	4%	8%	15%	17%
12	10%	12%	12%	6%	15%	13%	1%	0%	0%	13%	1%	2%	2%	2%	2%	9%
13	18%	6%	1%	2%	1%	5%	1%	12%	11%	1%	1%	1%	5%	4%	7%	23%
14	8%	1%	3%	0%	1%	0%	8%	8%	6%	3%	21%	12%	6%	10%	6%	8%
15	16%	1%	2%	11%	1%	8%	0%	0%	0%	0%	1%	17%	14%	4%	14%	12%
16	3%	1%	0%	1%	24%	2%	3%	1%	1%	2%	6%	26%	8%	2%	9%	13%
17	1%	0%	8%	0%	0%	1%	12%	22%	1%	2%	31%	3%	2%	2%	8%	6%
18	3%	2%	5%	1%	2%	0%	12%	2%	10%	4%	19%	12%	10%	10%	6%	2%
19	8%	4%	0%	0%	3%	2%	37%	1%	3%	0%	1%	17%	10%	1%	11%	2%
20	18%	6%	10%	8%	12%	8%	0%	0%	1%	1%	3%	7%	9%	3%	8%	7%
21	17%	1%	2%	0%	0%	0%	0%	0%	17%	5%	19%	3%	3%	14%	19%	6%
22	9%	0%	1%	0%	10%	2%	3%	7%	8%	6%	17%	4%	13%	6%	8%	6%
23	10%	0%	1%	1%	6%	3%	6%	7%	2%	6%	3%	15%	13%	8%	6%	14%
24	4%	1%	1%	0%	1%	2%	6%	19%	7%	10%	4%	6%	24%	6%	3%	6%
25	6%	13%	0%	4%	28%	12%	4%	3%	0%	1%	3%	4%	2%	8%	1%	11%
26	4%	6%	2%	2%	1%	0%	8%	1%	1%	1%	17%	18%	15%	11%	10%	2%
27	10%	0%	1%	1%	1%	0%	0%	14%	9%	4%	6%	11%	13%	14%	9%	8%
28	26%	1%	1%	1%	0%	4%	7%	6%	3%	3%	9%	6%	7%	4%	10%	9%
29	4%	15%	1%	1%	1%	8%	6%	5%	8%	17%	12%	8%	7%	3%	3%	3%
30	12%	6%	2%	4%	8%	18%	0%	2%	1%	3%	8%	4%	8%	7%	9%	9%
Mensual	11%	4%	3%	2%	5%	4%	5%	6%	4%	5%	8%	11%	9%	6%	8%	10%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	OSO	N	NNO	O	NO	SO	ONO	SSE	SE	SSO	E	NNE	S	ESE	NE	ENE
F. R.	11%	11%	10%	9%	8%	8%	6%	6%	5%	5%	5%	4%	4%	4%	3%	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	0%	0%	0%	0%	0%	0%	1%	49%	19%	0%	2%	15%	1%	0%	0%	13%
2	0%	0%	0%	0%	0%	0%	0%	49%	24%	13%	14%	0%	0%	0%	0%	0%
3	0%	0%	0%	0%	0%	0%	22%	25%	28%	8%	2%	15%	0%	0%	0%	0%
4	0%	0%	0%	0%	0%	0%	1%	57%	22%	6%	0%	0%	0%	0%	0%	13%
5	0%	0%	0%	0%	0%	0%	0%	38%	3%	3%	49%	6%	0%	0%	0%	0%
6	0%	0%	0%	0%	0%	1%	0%	48%	12%	31%	5%	3%	0%	0%	0%	0%
7	0%	0%	0%	0%	0%	0%	0%	15%	38%	23%	17%	6%	2%	0%	0%	0%
8	0%	0%	0%	0%	0%	5%	8%	35%	3%	4%	6%	13%	25%	0%	0%	0%
9	0%	0%	0%	0%	1%	3%	19%	66%	6%	0%	1%	1%	1%	3%	0%	0%
10	0%	0%	0%	0%	0%	5%	13%	19%	10%	3%	5%	3%	43%	0%	0%	0%
11	0%	0%	3%	0%	0%	12%	27%	3%	0%	0%	0%	5%	0%	0%	0%	50%
12	0%	0%	0%	0%	29%	0%	2%	21%	1%	0%	2%	1%	4%	0%	0%	40%
13	0%	0%	0%	0%	0%	12%	1%	60%	19%	3%	5%	0%	0%	0%	0%	0%
14	0%	0%	0%	0%	3%	1%	2%	7%	29%	28%	17%	1%	11%	1%	0%	0%
15	0%	0%	0%	19%	1%	0%	9%	6%	8%	11%	24%	20%	2%	0%	0%	0%
16	0%	0%	0%	0%	43%	8%	13%	6%	5%	3%	17%	3%	0%	0%	0%	0%
17	0%	0%	0%	0%	0%	1%	0%	16%	2%	11%	63%	6%	1%	0%	0%	0%
18	0%	0%	1%	1%	8%	11%	10%	38%	5%	3%	1%	18%	0%	2%	1%	0%
19	0%	0%	0%	0%	0%	0%	50%	0%	1%	1%	2%	45%	1%	0%	0%	0%
20	19%	0%	1%	0%	0%	1%	6%	0%	6%	1%	4%	0%	8%	0%	52%	1%
21	0%	0%	0%	0%	0%	0%	0%	40%	0%	22%	4%	3%	22%	3%	5%	1%
22	1%	0%	0%	0%	1%	8%	3%	6%	15%	18%	35%	14%	0%	0%	1%	0%
23	1%	0%	0%	0%	0%	12%	3%	44%	25%	0%	6%	8%	1%	1%	0%	0%
24	0%	0%	0%	0%	0%	12%	18%	25%	10%	19%	13%	3%	0%	0%	0%	0%
25	1%	50%	0%	0%	0%	10%	0%	34%	0%	0%	6%	0%	0%	0%	0%	0%
26	0%	16%	0%	0%	0%	0%	0%	10%	6%	9%	45%	1%	12%	1%	0%	0%
27	0%	0%	0%	0%	0%	0%	1%	48%	19%	0%	3%	19%	11%	0%	0%	0%
28	19%	0%	0%	0%	10%	1%	0%	31%	35%	1%	2%	1%	0%	0%	0%	0%
29	0%	0%	0%	0%	1%	1%	1%	7%	35%	9%	24%	22%	0%	0%	0%	0%
30	0%	0%	0%	0%	1%	38%	0%	16%	3%	0%	17%	7%	19%	0%	0%	0%
Mensual	1%	2%	0%	1%	3%	5%	7%	27%	13%	8%	13%	8%	5%	0%	2%	4%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SSE	SO	S	OSO	SSO	SE	O	ESE	NNO	E	NNE	NO	N	ENE	ONO	NE
F. R.	27%	13%	13%	8%	8%	7%	5%	5%	4%	3%	2%	2%	1%	1%	0%	0%

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