



# UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOSTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES



## ESTACIÓN METEOROLÓGICA LA PALMA

CÓDIGO: EMM-09

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	20.0	18.0	16.6	2.2	0.2	814.0	98.0	96.8	92.0	24.4	490.0	155.6	1.1
2	18.8	17.3	15.7	1.8	0.1	815.6	98.0	96.8	91.0	33.6	550.0	186.0	1.3
3	20.8	17.7	15.6	1.3	0.1	815.8	98.0	96.9	89.0	4.4	420.0	220.0	1.6
4	22.0	17.9	15.4	1.8	0.2	815.5	98.0	96.0	84.0	23.4	1032.0	279.1	2.0
5	24.9	19.6	16.5	2.7	0.2	814.5	98.0	88.7	66.0	0.0	1141.0	432.7	3.4
6	24.3	19.4	16.9	1.8	0.2	814.2	98.0	92.0	74.0	6.6	1257.0	303.5	2.3
7	22.7	18.6	17.1	1.8	0.2	814.7	97.0	95.7	82.0	0.2	918.0	219.2	1.7
8	24.4	20.0	16.6	2.2	0.2	813.7	98.0	89.7	73.0	0.0	1146.0	387.8	3.0
9	26.8	21.0	17.6	2.7	0.2	812.5	97.0	87.2	66.0	0.0	1190.0	383.9	3.1
10	26.7	21.3	17.9	2.2	0.3	811.0	96.0	86.2	64.0	0.0	1181.0	450.9	3.6
11	27.4	21.5	17.9	2.2	0.3	809.5	97.0	84.8	57.0	0.0	928.0	497.1	3.9
12	27.7	22.0	18.4	3.1	0.2	808.6	96.0	82.0	55.0	0.0	1150.0	520.1	4.3
13	27.4	21.9	18.0	2.7	0.3	809.3	97.0	82.8	59.0	0.0	1209.0	510.0	4.0
14	22.9	20.0	17.7	1.8	0.1	810.8	96.0	88.9	73.0	0.0	717.0	244.8	2.0
15	24.1	20.1	16.5	3.6	0.2	811.5	95.0	85.4	65.0	0.0	1088.0	375.9	3.0
16	22.2	19.2	16.9	2.7	0.1	812.5	98.0	93.1	82.0	0.0	1013.0	234.9	1.8
17	22.2	19.1	17.2	1.8	0.1	813.4	97.0	93.8	81.0	0.0	717.0	228.0	1.7
18	23.0	19.3	16.8	1.8	0.2	814.3	98.0	92.3	77.0	0.0	1213.0	252.8	2.0
19	21.9	18.7	16.6	2.2	0.1	813.9	97.0	93.6	82.0	1.8	703.0	198.5	1.5
20	22.4	18.5	15.7	2.2	0.2	813.4	97.0	91.9	79.0	1.2	1046.0	302.4	2.4
21	25.2	20.0	15.4	3.1	0.4	812.2	95.0	84.5	60.0	0.0	1086.0	497.6	4.0
22	24.6	20.0	17.1	4.5	0.2	812.0	96.0	90.5	76.0	1.8	1074.0	301.7	2.3
23	21.9	18.5	17.3	1.8	0.1	813.1	98.0	96.2	83.0	4.0	1197.0	198.4	1.5
24	22.4	18.9	16.8	1.3	0.1	812.4	98.0	93.0	77.0	2.0	1048.0	289.5	2.1
25	19.7	17.4	15.7	1.8	0.1	814.3	98.0	96.2	89.0	5.2	531.0	171.0	1.3
26	22.4	18.6	15.8	1.8	0.2	813.8	98.0	94.3	82.0	1.0	1199.0	345.2	2.5
27	22.9	19.0	16.5	1.8	0.1	813.3	98.0	91.2	79.0	1.2	819.0	274.1	2.1
28	26.2	20.4	16.1	2.7	0.3	811.9	97.0	81.9	63.0	0.0	1129.0	507.0	4.1
29	23.3	19.6	16.7	2.2	0.1	811.6	97.0	89.6	76.0	0.0	854.0	275.3	2.2
30	22.4	18.1	16.5	3.1	0.2	812.6	97.0	93.8	78.0	5.6	1146.0	211.6	1.6
<b>Mensual</b>	<b>27.7</b>	<b>19.4</b>	<b>15.4</b>	<b>4.5</b>	<b>0.2</b>	<b>812.9</b>	<b>98.0</b>	<b>90.9</b>	<b>55.0</b>	<b>116.4</b>	<b>1257.0</b>	<b>315.2</b>	<b>73.1</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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## ESTACIÓN METEOROLÓGICA LA PALMA

CÓDIGO: EMM-09

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

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	OSO	O	NNO	SO	N	ONO	NO	S	SSO	SSE	E	NNE	SE	NE	ESE	ENE
F. R.	11%	10%	9%	9%	8%	8%	8%	8%	6%	5%	4%	3%	3%	3%	2%	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	30%	0%	1%	0%	7%	6%	15%	18%	6%	9%	8%	0%	1%	0%	0%	0%
2	0%	0%	0%	1%	5%	21%	11%	13%	5%	16%	3%	4%	17%	0%	1%	4%
3	0%	0%	0%	0%	0%	0%	10%	30%	8%	13%	10%	19%	9%	0%	0%	0%
4	0%	1%	0%	0%	6%	26%	2%	19%	21%	1%	1%	15%	8%	0%	0%	0%
5	11%	0%	0%	1%	0%	0%	3%	37%	8%	6%	13%	11%	9%	0%	1%	0%
6	0%	0%	0%	0%	0%	0%	6%	17%	8%	10%	15%	40%	3%	0%	0%	1%
7	0%	0%	0%	0%	0%	0%	1%	27%	2%	28%	8%	10%	24%	0%	0%	0%
8	0%	0%	0%	0%	0%	19%	0%	28%	0%	0%	3%	0%	50%	0%	0%	0%
9	0%	0%	0%	0%	0%	0%	0%	11%	12%	0%	0%	0%	50%	27%	0%	0%
10	7%	0%	0%	0%	0%	0%	0%	21%	25%	0%	8%	3%	23%	6%	7%	0%
11	3%	0%	0%	0%	0%	1%	25%	14%	38%	14%	3%	0%	2%	0%	0%	0%
12	0%	0%	0%	0%	0%	0%	0%	54%	13%	2%	1%	2%	28%	0%	0%	0%
13	0%	0%	0%	0%	1%	0%	3%	3%	55%	0%	28%	3%	1%	3%	3%	0%
14	0%	0%	50%	1%	45%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
15	0%	0%	19%	0%	0%	1%	22%	1%	0%	0%	0%	8%	49%	0%	0%	0%
16	0%	0%	0%	0%	0%	0%	0%	13%	27%	6%	0%	4%	17%	0%	33%	0%
17	0%	0%	0%	0%	0%	0%	36%	47%	13%	3%	1%	0%	0%	0%	0%	0%
18	0%	0%	0%	0%	0%	10%	5%	4%	1%	1%	23%	52%	1%	3%	0%	0%
19	0%	0%	38%	0%	0%	0%	0%	0%	33%	1%	15%	9%	4%	0%	1%	0%
20	0%	0%	0%	0%	0%	1%	6%	27%	1%	1%	42%	22%	0%	0%	0%	0%
21	0%	0%	0%	0%	0%	13%	12%	3%	1%	1%	13%	48%	9%	0%	0%	0%
22	0%	0%	0%	1%	1%	0%	2%	15%	53%	3%	3%	4%	7%	0%	10%	0%
23	0%	0%	0%	0%	0%	0%	0%	3%	0%	50%	1%	21%	24%	0%	0%	0%
24	0%	0%	0%	0%	7%	1%	12%	0%	17%	7%	47%	5%	0%	4%	1%	0%
25	0%	0%	0%	0%	20%	9%	3%	24%	19%	6%	7%	10%	1%	1%	1%	0%
26	0%	0%	0%	0%	0%	0%	0%	1%	19%	1%	18%	56%	5%	0%	0%	0%
27	0%	0%	0%	0%	15%	0%	0%	15%	20%	0%	14%	28%	0%	2%	1%	5%
28	0%	0%	0%	0%	0%	0%	0%	37%	29%	0%	0%	0%	3%	7%	24%	0%
29	0%	0%	0%	0%	0%	0%	0%	0%	79%	0%	0%	21%	0%	0%	0%	0%
30	0%	0%	0%	0%	0%	11%	15%	13%	26%	3%	7%	6%	12%	8%	0%	0%
Mensual	2%	0%	4%	0%	4%	4%	6%	16%	18%	6%	10%	13%	12%	2%	3%	0%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	S	SSE	OSO	O	SO	SE	SSO	ESE	NE	E	NO	ONO	N	NNO	ENE	NNE
F. R.	18%	16%	13%	12%	10%	6%	6%	4%	4%	4%	3%	2%	2%	0%	0%	0%

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