



# 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 EMAS

CÓDIGO: EMM-01

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 (%)			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	20.7	17.2	15.1	2.2	0.3	802.9	100.0	95.4	79.0	15.2	831.0	149.4	1.0
2	21.7	17.7	14.7	3.1	0.4	803.7	98.0	90.1	72.0	1.6	912.0	252.2	1.9
3	22.8	18.2	15.6	2.2	0.3	803.1	100.0	90.4	68.0	5.6	1181.0	328.5	2.3
4	18.9	16.4	14.5	4.5	0.2	804.6	100.0	97.2	82.0	9.4	336.0	161.6	1.1
5	24.4	18.7	14.8	4.0	0.3	802.9	98.0	85.3	56.0	0.0	1252.0	517.6	3.8
6	23.8	18.7	15.3	4.5	0.5	801.7	100.0	87.8	55.0	9.0	1179.0	465.1	3.4
7	24.3	19.3	15.3	3.6	0.4	801.2	97.0	86.3	60.0	0.4	1245.0	400.0	3.0
8	20.4	17.3	15.8	4.0	0.4	802.5	100.0	94.2	80.0	8.8	707.0	166.4	1.2
9	21.7	17.8	16.0	3.1	0.4	802.8	99.0	90.9	75.0	1.4	1002.0	248.4	1.8
10	20.7	17.4	15.2	2.2	0.3	804.1	100.0	93.7	75.0	39.2	1130.0	250.2	1.8
11	20.4	17.5	15.4	2.2	0.2	803.9	99.0	94.6	81.0	20.0	833.0	208.3	1.4
12	20.7	16.6	14.8	3.6	0.5	805.2	100.0	94.7	75.0	18.2	798.0	261.5	1.6
13	23.4	18.0	14.3	3.1	0.6	803.0	100.0	84.7	58.0	0.8	1172.0	546.6	3.7
14	22.4	16.7	14.2	3.6	0.6	803.0	99.0	91.3	71.0	26.0	1185.0	340.7	2.2
15	20.4	16.8	13.8	5.4	0.3	804.5	100.0	91.6	73.0	31.0	712.0	281.2	2.0
16	20.6	16.1	13.6	3.6	0.4	805.0	100.0	95.1	72.0	30.4	1114.0	228.0	1.6
17	19.3	15.5	14.4	3.1	0.2	805.4	100.0	97.6	81.0	22.4	870.0	191.3	1.3
18	18.6	15.4	13.9	3.1	0.3	806.6	100.0	96.0	78.0	12.0	1127.0	216.3	1.4
19	21.9	16.6	12.7	4.0	0.7	807.3	93.0	76.7	45.0	0.6	1250.0	411.2	3.2
20	20.3	16.5	13.3	3.1	0.5	807.5	90.0	69.5	46.0	0.0	784.0	260.1	2.2
21	22.3	16.8	13.4	3.1	0.5	805.9	95.0	78.7	47.0	0.0	1190.0	387.5	2.9
22	23.1	17.5	14.1	4.0	0.7	803.8	94.0	75.7	41.0	0.0	1148.0	461.3	3.5
23	22.8	17.7	12.6	2.7	0.4	803.4	98.0	82.2	59.0	1.2	988.0	286.2	2.1
24	23.1	18.3	15.7	3.1	0.3	803.2	99.0	85.8	54.0	0.6	1081.0	359.2	2.7
25	21.2	17.7	15.0	2.2	0.2	802.7	99.0	89.8	68.0	11.6	1164.0	282.8	2.1
26	21.7	17.6	15.4	2.2	0.3	800.7	100.0	93.6	71.0	1.2	888.0	211.7	1.6
27	23.5	18.6	14.7	2.7	0.5	799.6	98.0	87.8	64.0	1.4	1097.0	357.0	2.6
28	19.4	17.3	15.5	2.7	0.2	801.4	100.0	95.1	76.0	27.0	617.0	175.4	1.2
29	18.8	16.4	15.5	2.2	0.2	803.1	100.0	97.3	88.0	5.4	642.0	136.1	1.0
30	17.6	15.6	13.7	2.2	0.2	804.2	100.0	98.0	93.0	27.0	327.0	122.9	0.8
31	21.3	16.4	12.9	2.7	0.6	803.7	99.0	89.2	69.0	0.0	1213.0	379.8	2.8
<b>Mensual</b>	<b>24.4</b>	<b>17.2</b>	<b>12.6</b>	<b>5.4</b>	<b>0.4</b>	<b>803.6</b>	<b>100.0</b>	<b>89.5</b>	<b>41.0</b>	<b>327.4</b>	<b>1252.0</b>	<b>291.8</b>	<b>65.4</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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**ESTACIÓN METEOROLÓGICA EMAS**

CÓDIGO: EMM-01

**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	10%	0%	13%	6%	5%	17%	6%	5%	1%	9%	10%	3%	1%	9%	5%	0%
2	10%	1%	0%	21%	0%	7%	7%	2%	8%	14%	11%	2%	1%	1%	13%	3%
3	3%	0%	0%	1%	0%	0%	0%	0%	6%	30%	16%	3%	4%	6%	11%	1%
4	0%	0%	1%	1%	3%	3%	0%	3%	3%	6%	31%	17%	11%	3%	2%	5%
5	1%	2%	1%	20%	1%	0%	1%	1%	2%	9%	13%	4%	4%	8%	19%	13%
6	1%	6%	12%	1%	0%	9%	0%	0%	2%	16%	8%	6%	2%	15%	17%	6%
7	1%	1%	1%	17%	1%	0%	0%	0%	2%	19%	14%	8%	7%	6%	22%	2%
8	0%	0%	2%	6%	5%	6%	0%	1%	3%	0%	19%	6%	5%	10%	18%	21%
9	1%	0%	6%	10%	22%	0%	1%	0%	2%	6%	19%	5%	1%	3%	20%	5%
10	26%	0%	0%	0%	2%	3%	0%	1%	12%	1%	2%	5%	4%	8%	32%	3%
11	0%	0%	0%	22%	1%	8%	1%	3%	8%	10%	10%	6%	3%	7%	17%	4%
12	0%	0%	0%	1%	1%	9%	0%	0%	11%	17%	15%	4%	3%	11%	18%	1%
13	0%	0%	4%	4%	3%	7%	0%	0%	5%	15%	10%	1%	1%	5%	36%	2%
14	0%	7%	0%	3%	0%	3%	1%	6%	5%	26%	12%	3%	1%	6%	15%	1%
15	0%	0%	4%	19%	0%	0%	0%	1%	1%	9%	16%	2%	13%	14%	17%	4%
16	1%	0%	0%	49%	0%	0%	0%	0%	3%	14%	12%	1%	2%	3%	10%	5%
17	0%	0%	0%	0%	17%	0%	0%	8%	9%	20%	33%	6%	1%	3%	2%	0%
18	0%	9%	0%	0%	17%	0%	0%	0%	17%	11%	21%	4%	2%	13%	6%	0%
19	0%	0%	3%	22%	0%	0%	0%	1%	5%	8%	21%	6%	15%	3%	14%	3%
20	0%	0%	2%	27%	0%	0%	0%	2%	3%	15%	17%	8%	10%	3%	10%	3%
21	1%	0%	0%	22%	9%	3%	1%	3%	3%	16%	13%	8%	1%	6%	10%	4%
22	2%	0%	1%	3%	12%	11%	1%	1%	4%	13%	17%	6%	3%	7%	10%	3%
23	3%	6%	16%	10%	1%	0%	1%	0%	6%	8%	11%	12%	6%	5%	11%	6%
24	4%	3%	0%	0%	14%	1%	1%	1%	4%	25%	21%	3%	8%	2%	5%	9%
25	2%	1%	3%	0%	13%	6%	0%	0%	8%	16%	19%	3%	3%	6%	15%	6%
26	3%	1%	9%	0%	0%	0%	0%	0%	1%	17%	12%	9%	10%	12%	24%	1%
27	1%	1%	1%	22%	9%	0%	0%	0%	0%	6%	15%	3%	8%	8%	23%	3%
28	0%	0%	0%	24%	1%	0%	1%	1%	22%	13%	10%	2%	1%	6%	8%	12%
29	0%	1%	0%	28%	20%	1%	7%	2%	0%	2%	3%	2%	15%	15%	3%	1%
30	0%	31%	0%	0%	4%	8%	1%	4%	1%	2%	8%	4%	17%	16%	4%	0%
31	0%	0%	0%	16%	11%	6%	0%	1%	4%	10%	13%	3%	4%	7%	22%	2%
Mensual	2%	2%	3%	12%	6%	3%	1%	1%	5%	13%	15%	5%	6%	7%	15%	4%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SO	NO	SSO	ENE	ONO	E	O	S	OSO	NNO	ESE	NE	N	NNE	SSE	SE
F. R.	15%	15%	13%	12%	7%	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.



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**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%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2	2%	0%	2%	44%	14%	12%	2%	2%	15%	6%	1%	0%	0%	0%	0%	0%
3	0%	1%	1%	26%	6%	0%	0%	2%	1%	8%	3%	1%	1%	3%	0%	0%
4	0%	0%	3%	45%	1%	0%	2%	0%	0%	0%	1%	0%	3%	0%	1%	1%
5	0%	2%	17%	73%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%
6	1%	0%	24%	47%	7%	10%	3%	3%	5%	1%	0%	0%	0%	0%	0%	0%
7	7%	3%	24%	24%	22%	4%	0%	1%	1%	0%	1%	0%	0%	0%	13%	0%
8	0%	6%	13%	31%	8%	10%	9%	3%	3%	6%	3%	0%	0%	0%	7%	1%
9	0%	0%	1%	73%	13%	10%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%
10	25%	2%	22%	10%	32%	1%	0%	0%	0%	0%	1%	0%	0%	0%	6%	1%
11	0%	0%	0%	58%	13%	6%	0%	6%	3%	1%	4%	1%	5%	1%	1%	0%
12	0%	0%	0%	10%	20%	35%	1%	5%	4%	15%	0%	1%	3%	1%	0%	0%
13	0%	1%	18%	31%	19%	3%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%
14	0%	0%	17%	24%	17%	16%	0%	1%	3%	0%	0%	0%	0%	0%	0%	0%
15	3%	0%	0%	42%	11%	3%	0%	19%	3%	1%	7%	4%	0%	0%	3%	2%
16	2%	4%	8%	19%	12%	3%	2%	0%	3%	10%	4%	11%	15%	0%	5%	1%
17	0%	10%	0%	0%	40%	2%	0%	0%	32%	12%	0%	5%	0%	0%	0%	0%
18	0%	0%	0%	1%	58%	5%	1%	6%	3%	8%	15%	3%	0%	0%	1%	0%
19	0%	0%	31%	53%	10%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
20	1%	1%	34%	40%	15%	4%	0%	0%	0%	0%	0%	0%	0%	0%	4%	1%
21	0%	0%	0%	52%	16%	13%	0%	1%	6%	2%	0%	0%	0%	0%	6%	0%
22	0%	0%	12%	51%	15%	6%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
23	0%	0%	12%	72%	16%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
24	2%	5%	3%	21%	38%	0%	1%	0%	0%	21%	8%	0%	1%	0%	0%	0%
25	0%	3%	59%	22%	6%	2%	0%	0%	1%	3%	0%	0%	0%	1%	0%	3%
26	6%	0%	49%	17%	0%	0%	0%	0%	0%	0%	0%	1%	8%	1%	17%	0%
27	0%	0%	14%	75%	8%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
28	0%	0%	0%	17%	14%	1%	0%	1%	48%	5%	12%	0%	0%	0%	1%	0%
29	0%	0%	0%	6%	68%	16%	1%	1%	9%	0%	0%	0%	0%	0%	0%	0%
30	0%	0%	1%	46%	50%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%
31	0%	0%	35%	65%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mensual	2%	1%	15%	40%	19%	6%	1%	2%	5%	4%	2%	1%	1%	0%	2%	0%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ENE	E	NE	ESE	S	SSO	NO	SO	SSE	N	NNE	O	OSO	SE	NNO	ONO
F. R.	40%	19%	15%	6%	5%	4%	2%	2%	2%	2%	1%	1%	1%	1%	0%	0%

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