



# 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

AGOSTO 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	22.0	17.7	13.3	4.9	0.8	803.5	98.0	87.9	67.0	0.0	1201.0	410.0	3.2
2	23.1	17.4	14.8	4.9	0.9	802.8	98.0	88.6	71.0	6.4	1201.0	281.1	2.2
3	22.6	17.6	14.9	2.7	0.7	802.9	97.0	89.2	73.0	1.2	1176.0	273.5	2.1
4	23.8	18.4	13.3	3.1	0.7	802.9	98.0	86.6	61.0	0.0	1229.0	443.1	3.3
5	25.9	19.5	15.5	4.9	1.2	802.7	98.0	76.6	45.0	1.0	1213.0	491.1	4.1
6	24.8	18.8	14.0	4.0	1.1	802.8	93.0	75.6	44.0	0.0	1160.0	459.8	3.8
7	24.8	19.0	15.0	4.0	1.1	803.3	96.0	77.9	46.0	0.0	1216.0	402.5	3.3
8	24.4	18.6	13.6	5.8	1.3	803.6	94.0	74.8	46.0	0.0	1116.0	470.5	3.8
9	23.4	18.4	15.1	3.1	0.8	803.2	96.0	81.5	45.0	0.0	1125.0	237.4	2.0
10	25.2	19.0	15.0	2.7	0.9	802.2	98.0	80.9	46.0	0.0	1208.0	395.8	3.4
11	23.4	18.2	14.7	4.5	0.8	802.3	96.0	83.8	57.0	0.0	1204.0	273.8	2.2
12	20.2	17.4	16.2	2.2	0.3	802.6	97.0	92.3	73.0	1.4	691.0	161.0	1.2
13	22.8	17.8	14.8	3.1	0.6	802.5	97.0	88.7	58.0	1.4	1148.0	299.1	2.3
14	21.7	18.1	15.2	2.7	0.5	801.6	98.0	88.7	66.0	2.0	1100.0	253.2	1.9
15	21.4	17.4	15.2	2.2	0.4	802.7	100.0	93.7	70.0	3.6	1288.0	205.0	1.5
16	22.8	17.8	15.4	3.1	0.5	803.7	98.0	87.4	64.0	0.2	988.0	309.6	2.3
17	23.2	17.8	15.0	3.1	0.7	803.8	98.0	85.8	51.0	0.0	1076.0	284.0	2.2
18	24.1	18.7	14.8	5.4	0.8	802.7	99.0	83.0	55.0	8.0	1296.0	505.3	3.9
19	22.4	18.0	14.7	3.6	0.5	802.4	99.0	86.3	65.0	15.2	1364.0	418.9	3.1
20	19.4	16.8	14.1	2.2	0.4	803.7	99.0	95.5	82.0	8.6	656.0	196.7	1.4
21	20.1	16.9	13.9	2.7	0.5	804.3	99.0	91.6	78.0	0.8	1023.0	275.0	2.1
22	22.6	18.3	14.6	3.1	0.5	803.6	97.0	86.7	61.0	0.0	1232.0	337.5	2.5
23	23.7	17.8	15.8	5.4	0.5	803.1	99.0	91.9	68.0	18.6	1269.0	311.1	2.3
24	20.9	17.1	14.8	2.2	0.4	804.6	98.0	91.3	74.0	1.4	724.0	249.8	1.8
25	22.7	17.9	13.8	3.6	0.7	804.6	98.0	86.3	63.0	0.0	1253.0	378.6	2.9
26	23.7	17.7	14.8	3.6	0.8	805.0	96.0	86.3	52.0	14.2	1195.0	366.7	2.7
27	23.9	18.5	14.3	4.0	0.7	804.1	98.0	85.3	61.0	7.8	1137.0	280.2	2.3
28	23.1	17.7	15.2	4.0	0.6	803.5	100.0	90.0	65.0	4.0	1227.0	433.2	3.0
29	23.8	18.2	14.8	3.1	0.7	803.3	96.0	86.2	59.0	0.0	1257.0	332.2	2.5
30	25.2	18.9	14.1	4.0	0.9	802.3	98.0	79.6	45.0	0.0	1223.0	513.5	4.1
31	24.8	19.3	15.4	4.9	0.9	802.3	96.0	78.0	48.0	0.0	1252.0	380.2	3.2
<b>Mensual</b>	<b>25.9</b>	<b>18.1</b>	<b>13.3</b>	<b>5.8</b>	<b>0.7</b>	<b>803.2</b>	<b>100.0</b>	<b>85.7</b>	<b>44.0</b>	<b>95.8</b>	<b>1364.0</b>	<b>342.9</b>	<b>82.6</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

**AGOSTO 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%	19%	6%	0%	0%	0%	1%	2%	11%	39%	4%	1%	5%	8%	3%
2	0%	0%	3%	6%	19%	19%	3%	2%	10%	10%	5%	2%	1%	8%	10%	1%
3	2%	1%	19%	33%	4%	4%	0%	1%	3%	6%	7%	1%	5%	3%	6%	6%
4	6%	3%	15%	0%	0%	2%	0%	1%	2%	6%	9%	3%	1%	13%	23%	15%
5	0%	0%	1%	9%	1%	12%	2%	2%	7%	19%	15%	17%	2%	3%	5%	4%
6	0%	0%	26%	3%	1%	0%	0%	1%	6%	17%	8%	3%	6%	2%	24%	1%
7	1%	1%	4%	6%	2%	1%	1%	3%	10%	9%	7%	5%	3%	15%	24%	6%
8	1%	1%	10%	5%	1%	4%	0%	1%	3%	24%	28%	3%	1%	3%	10%	3%
9	0%	1%	16%	3%	0%	1%	1%	3%	5%	8%	13%	13%	7%	9%	21%	0%
10	5%	1%	0%	13%	1%	1%	0%	1%	6%	15%	15%	6%	3%	8%	18%	8%
11	1%	0%	3%	8%	6%	6%	2%	3%	3%	7%	4%	4%	16%	9%	21%	7%
12	0%	0%	23%	15%	0%	0%	0%	1%	0%	15%	15%	6%	4%	6%	15%	1%
13	1%	6%	26%	8%	5%	1%	1%	1%	7%	12%	9%	10%	3%	3%	6%	3%
14	0%	0%	0%	16%	0%	1%	1%	10%	2%	11%	15%	4%	7%	3%	27%	3%
15	0%	0%	3%	7%	1%	1%	0%	0%	3%	11%	47%	3%	2%	10%	1%	1%
16	1%	0%	1%	6%	4%	4%	0%	2%	3%	10%	14%	3%	15%	6%	19%	2%
17	0%	0%	1%	22%	9%	8%	3%	6%	11%	13%	6%	2%	0%	4%	10%	6%
18	1%	11%	5%	0%	0%	3%	0%	3%	3%	24%	22%	12%	4%	4%	7%	2%
19	3%	0%	2%	8%	1%	8%	0%	3%	3%	22%	20%	6%	5%	5%	14%	1%
20	0%	0%	21%	0%	8%	3%	1%	1%	22%	13%	6%	3%	3%	13%	6%	1%
21	0%	2%	17%	22%	1%	1%	0%	0%	1%	11%	26%	3%	0%	1%	13%	2%
22	13%	0%	7%	1%	5%	2%	1%	0%	3%	6%	9%	13%	10%	19%	9%	1%
23	0%	0%	0%	40%	2%	1%	0%	6%	3%	8%	13%	3%	2%	4%	13%	5%
24	1%	0%	0%	1%	22%	17%	0%	0%	3%	13%	10%	10%	8%	8%	6%	1%
25	1%	6%	26%	3%	0%	0%	0%	1%	1%	13%	7%	3%	3%	13%	21%	2%
26	1%	1%	10%	25%	1%	1%	0%	1%	4%	3%	8%	6%	7%	13%	14%	5%
27	6%	1%	15%	2%	3%	6%	1%	1%	1%	10%	13%	12%	3%	6%	17%	4%
28	22%	2%	2%	1%	10%	2%	0%	0%	1%	12%	13%	6%	3%	12%	13%	3%
29	1%	1%	0%	19%	0%	0%	0%	0%	3%	15%	10%	10%	6%	13%	20%	2%
30	1%	1%	19%	1%	0%	0%	2%	1%	4%	19%	22%	6%	3%	9%	8%	2%
31	1%	0%	20%	7%	0%	0%	0%	0%	4%	9%	10%	1%	8%	15%	15%	11%
Mensual	2%	1%	10%	10%	3%	4%	1%	2%	5%	12%	14%	6%	5%	8%	14%	4%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SO	NO	SSO	NE	ENE	ONO	OSO	O	S	NNO	ESE	E	N	SSE	NNE	SE
F. R.	14%	14%	12%	10%	10%	8%	6%	5%	5%	4%	4%	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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CÓDIGO: EMM-01

**AGOSTO 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%	35%	40%	21%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%
2	0%	1%	38%	60%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3	0%	0%	23%	72%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4	1%	1%	49%	43%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
5	1%	1%	22%	44%	8%	13%	0%	2%	3%	1%	5%	0%	0%	0%	0%	0%
6	0%	0%	83%	15%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
7	0%	0%	71%	24%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
8	0%	1%	79%	18%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
9	1%	1%	57%	37%	1%	1%	0%	0%	2%	0%	0%	0%	0%	0%	1%	0%
10	0%	1%	54%	43%	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
11	1%	0%	44%	47%	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	3%	1%
12	0%	0%	31%	63%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	3%	0%
13	0%	0%	31%	67%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
14	0%	2%	60%	24%	1%	0%	0%	1%	3%	0%	4%	5%	0%	0%	0%	0%
15	0%	0%	3%	38%	3%	1%	0%	0%	1%	5%	21%	24%	0%	0%	0%	0%
16	0%	0%	28%	40%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
17	0%	0%	10%	79%	6%	3%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
18	5%	1%	8%	44%	13%	12%	0%	0%	0%	0%	1%	1%	2%	1%	12%	1%
19	3%	4%	28%	24%	14%	15%	1%	0%	0%	2%	1%	0%	1%	1%	3%	3%
20	0%	0%	22%	69%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
21	0%	0%	17%	71%	11%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
22	3%	4%	25%	56%	6%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	5%
23	1%	0%	0%	48%	19%	10%	2%	4%	3%	6%	4%	1%	0%	0%	0%	1%
24	0%	0%	0%	64%	14%	1%	0%	0%	0%	1%	19%	0%	0%	0%	2%	0%
25	0%	0%	51%	49%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
26	0%	0%	41%	56%	3%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
27	6%	1%	37%	25%	13%	9%	0%	3%	0%	1%	5%	0%	0%	0%	0%	1%
28	20%	3%	19%	24%	9%	0%	1%	5%	1%	1%	4%	1%	1%	1%	6%	2%
29	0%	1%	47%	45%	5%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
30	0%	5%	60%	33%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
31	0%	0%	56%	44%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mensual	1%	1%	37%	46%	6%	2%	0%	1%	0%	1%	2%	1%	0%	0%	1%	1%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ENE	NE	E	ESE	SO	N	OSO	NO	NNE	SSO	NNO	SSE	S	SE	O	ONO
F. R.	46%	37%	6%	2%	2%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%

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