



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 ENEA

CÓDIGO: EMM-04

JULIO 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 ²)		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	21.1	15.7	12.3	4.0	0.8	801.1	100.0	90.5	73.0	2.8	1125.0	546.3	3.6
2	19.0	15.2	12.4	5.4	0.5	801.3	99.0	90.2	76.0	1.0	1223.0	205.6	1.8
3	22.4	16.3	11.2	7.2	1.1	800.7	97.0	82.8	55.0	0.0	1140.0	493.8	3.8
4	20.9	16.1	12.9	4.0	0.8	801.1	96.0	87.0	66.0	1.0	1245.0	369.3	2.5
5	21.7	16.5	12.1	4.9	1.1	801.2	93.0	82.1	63.0	0.0	1105.0	395.9	3.3
6	19.8	15.4	12.6	4.5	0.8	801.6	97.0	89.7	75.0	3.3	1264.0	283.1	2.3
7	21.5	16.2	11.9	4.0	0.8	801.3	97.0	82.5	58.0	1.0	1131.0	387.9	3.1
8	22.1	16.8	12.4	5.8	1.3	800.5	92.0	80.1	59.0	0.0	1040.0	389.3	3.5
9	22.0	16.9	12.4	4.9	1.2	800.5	92.0	80.8	64.0	0.0	1144.0	365.2	3.0
10	21.8	17.0	13.2	4.9	0.8	800.7	93.0	83.0	67.0	0.0	1195.0	426.3	3.3
11	22.4	17.3	12.8	4.9	0.7	801.7	96.0	80.7	56.0	0.0	1099.0	438.6	3.8
12	19.9	16.2	13.1	4.9	0.7	802.4	100.0	88.5	70.0	2.5	1049.0	319.7	2.5
13	17.6	14.5	12.5	3.6	0.3	802.4	100.0	97.4	82.0	5.8	821.0	220.5	1.3
14	18.6	14.4	12.3	3.1	0.4	802.4	100.0	93.5	74.0	8.9	723.0	217.5	1.3
15	17.6	14.4	12.4	5.4	0.4	803.0	100.0	98.4	91.0	17.0	1067.0	296.5	2.0
16	22.1	15.6	12.1	4.5	0.8	802.0	100.0	89.3	69.0	11.4	1080.0	487.5	3.6
17	20.2	15.6	12.3	4.9	0.6	801.9	99.0	88.5	68.0	1.0	1010.0	313.0	2.0
18	20.7	16.0	13.1	4.0	0.8	801.8	100.0	90.5	64.0	2.8	1236.0	365.5	2.5
19	22.0	16.7	12.6	5.8	0.8	801.8	99.0	86.0	65.0	1.0	1271.0	518.4	3.8
20	21.8	16.6	13.2	4.5	0.9	801.7	92.0	82.7	64.0	0.0	1181.0	414.4	3.0
21	23.0	16.5	12.0	5.4	0.9	801.0	93.0	78.6	53.0	0.0	951.0	393.8	3.3
22	23.5	17.3	13.0	4.0	0.7	800.9	92.0	79.2	53.0	0.0	1089.0	406.3	3.3
23	22.4	16.9	13.0	3.6	0.3	801.5	93.0	81.9	60.0	2.5	876.0	302.0	2.6
24	22.1	16.6	13.0	5.4	0.6	801.7	90.0	77.2	56.0	0.0	1245.0	349.8	2.8
25	22.2	16.7	12.8	4.5	0.6	800.8	91.0	78.1	58.0	1.0	1131.0	352.7	2.8
26	21.8	16.7	12.4	4.5	0.9	800.4	95.0	82.9	65.0	0.0	1083.0	333.4	2.5
27	21.9	16.6	13.1	4.9	0.6	800.7	94.0	83.3	62.0	0.0	1064.0	321.8	2.5
28	20.2	15.3	13.0	5.4	0.5	801.1	100.0	90.6	68.0	4.1	957.0	241.7	1.5
29	15.4	13.0	10.8	4.9	0.5	801.5	100.0	98.8	90.0	24.4	1134.0	223.3	1.3
30	19.1	14.1	10.7	3.1	0.3	801.8	100.0	94.4	63.0	7.9	644.0	288.0	1.8
31	19.4	15.1	12.1	4.5	0.4	801.7	100.0	91.9	71.0	1.5	1183.0	335.9	2.5
Mensual	23.5	15.9	10.7	7.2	0.7	801.4	100.0	86.5	53.0	101.1	1271.0	354.9	83.1

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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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	12%	1%	1%	0%	3%	10%	11%	1%	1%	0%	0%	0%	1%	3%	18%	37%
2	22%	0%	1%	6%	0%	5%	8%	1%	1%	3%	1%	4%	3%	1%	17%	26%
3	23%	0%	0%	1%	0%	6%	5%	4%	2%	1%	1%	2%	4%	3%	9%	40%
4	14%	8%	0%	1%	1%	5%	6%	5%	0%	0%	0%	4%	8%	4%	15%	29%
5	15%	1%	0%	1%	2%	6%	6%	1%	0%	1%	2%	7%	3%	5%	15%	33%
6	13%	2%	1%	3%	7%	10%	4%	2%	3%	6%	1%	5%	3%	3%	8%	29%
7	15%	0%	0%	1%	2%	10%	21%	2%	8%	1%	3%	3%	1%	6%	6%	20%
8	26%	1%	0%	1%	3%	2%	7%	3%	3%	1%	3%	1%	1%	2%	8%	38%
9	26%	0%	0%	0%	2%	3%	8%	1%	0%	1%	3%	1%	7%	3%	17%	28%
10	18%	0%	0%	1%	3%	4%	6%	4%	1%	0%	2%	6%	4%	7%	10%	35%
11	13%	0%	1%	1%	3%	4%	8%	1%	1%	0%	3%	8%	4%	7%	14%	33%
12	35%	2%	0%	3%	1%	8%	7%	1%	1%	0%	2%	3%	3%	1%	8%	25%
13	17%	0%	0%	1%	0%	0%	3%	0%	0%	3%	3%	16%	8%	1%	6%	42%
14	16%	0%	0%	1%	1%	15%	15%	0%	3%	1%	2%	1%	1%	2%	6%	35%
15	28%	1%	6%	0%	0%	0%	2%	12%	4%	3%	5%	3%	6%	5%	7%	19%
16	12%	0%	1%	1%	10%	13%	2%	3%	0%	1%	1%	3%	2%	3%	7%	42%
17	21%	0%	0%	1%	2%	1%	16%	2%	6%	0%	3%	3%	9%	2%	11%	24%
18	33%	0%	0%	3%	1%	3%	7%	1%	1%	0%	10%	3%	0%	4%	6%	29%
19	17%	0%	1%	1%	3%	3%	13%	1%	0%	1%	3%	0%	7%	3%	12%	36%
20	20%	1%	1%	1%	3%	6%	7%	4%	2%	3%	14%	3%	3%	3%	4%	24%
21	21%	0%	1%	2%	1%	5%	6%	8%	0%	1%	6%	7%	5%	3%	12%	22%
22	14%	0%	4%	1%	0%	9%	6%	0%	0%	0%	1%	4%	7%	5%	14%	36%
23	15%	0%	1%	0%	6%	1%	1%	3%	3%	4%	11%	8%	14%	8%	10%	16%
24	6%	0%	0%	2%	3%	15%	10%	1%	1%	5%	2%	6%	9%	6%	15%	18%
25	20%	3%	1%	3%	3%	7%	6%	6%	3%	1%	2%	5%	6%	1%	12%	22%
26	26%	0%	1%	1%	0%	2%	8%	0%	0%	1%	0%	5%	5%	8%	13%	31%
27	19%	2%	0%	1%	3%	4%	14%	1%	0%	2%	2%	5%	3%	1%	15%	27%
28	28%	3%	1%	1%	1%	9%	7%	1%	1%	1%	6%	1%	6%	4%	5%	25%
29	26%	1%	0%	34%	10%	3%	1%	0%	0%	0%	0%	0%	1%	0%	3%	22%
30	4%	0%	0%	0%	0%	24%	3%	0%	1%	2%	5%	6%	4%	5%	17%	29%
31	19%	10%	2%	1%	3%	7%	9%	1%	1%	5%	5%	0%	1%	1%	10%	26%
Mensual	19%	1%	1%	2%	2%	6%	8%	2%	2%	2%	3%	4%	5%	4%	11%	29%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	NNO	N	NO	SE	ESE	O	OSO	ONO	SO	E	ENE	SSE	SSO	S	NNE	NE
F. R.	29%	19%	11%	8%	6%	5%	4%	4%	3%	2%	2%	2%	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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JULIO 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%	1%	12%	10%	28%	35%	6%	0%	1%	3%	0%	1%	3%	0%	0%
2	0%	0%	0%	6%	10%	38%	28%	5%	9%	0%	0%	0%	0%	1%	3%	0%
3	0%	0%	1%	6%	7%	25%	33%	17%	1%	0%	1%	0%	3%	4%	1%	1%
4	1%	0%	0%	11%	19%	27%	26%	8%	3%	0%	1%	0%	0%	0%	3%	0%
5	0%	0%	0%	7%	19%	42%	24%	5%	1%	0%	0%	0%	0%	2%	0%	0%
6	1%	6%	3%	7%	18%	32%	29%	3%	0%	1%	0%	0%	0%	0%	0%	0%
7	0%	0%	1%	5%	10%	36%	40%	7%	1%	0%	0%	0%	0%	0%	0%	0%
8	0%	0%	0%	4%	15%	33%	35%	10%	1%	0%	0%	0%	0%	0%	2%	0%
9	1%	0%	2%	13%	10%	28%	17%	8%	1%	1%	3%	2%	1%	3%	4%	7%
10	0%	2%	3%	9%	10%	27%	21%	18%	7%	0%	1%	1%	0%	0%	2%	0%
11	3%	1%	10%	3%	19%	15%	14%	12%	1%	0%	0%	3%	0%	0%	0%	18%
12	16%	3%	7%	1%	10%	11%	19%	8%	0%	0%	1%	1%	1%	1%	1%	19%
13	27%	13%	13%	1%	6%	11%	9%	1%	1%	1%	0%	6%	1%	1%	7%	2%
14	0%	0%	10%	7%	22%	31%	14%	12%	1%	0%	0%	0%	0%	0%	0%	3%
15	18%	1%	27%	5%	13%	16%	11%	1%	0%	0%	0%	4%	0%	0%	1%	3%
16	0%	0%	1%	4%	15%	34%	41%	4%	0%	1%	0%	0%	0%	0%	0%	0%
17	1%	1%	1%	16%	9%	24%	16%	10%	1%	8%	1%	3%	0%	0%	0%	10%
18	0%	0%	2%	4%	34%	20%	32%	5%	0%	0%	0%	0%	0%	3%	0%	0%
19	0%	0%	1%	6%	22%	32%	28%	3%	0%	1%	0%	0%	0%	0%	6%	0%
20	0%	0%	1%	5%	15%	26%	32%	14%	4%	2%	2%	0%	0%	0%	0%	0%
21	0%	0%	1%	4%	19%	31%	29%	9%	1%	1%	0%	0%	0%	0%	6%	0%
22	1%	0%	3%	6%	10%	26%	28%	13%	5%	2%	1%	0%	0%	2%	1%	2%
23	0%	0%	1%	10%	17%	28%	31%	8%	3%	0%	0%	0%	3%	0%	0%	0%
24	0%	0%	0%	4%	18%	26%	41%	7%	3%	0%	1%	0%	0%	0%	0%	0%
25	1%	0%	1%	3%	14%	33%	38%	4%	1%	1%	1%	0%	0%	0%	0%	4%
26	1%	1%	1%	5%	13%	34%	28%	4%	3%	0%	0%	0%	0%	1%	9%	0%
27	0%	0%	1%	9%	19%	38%	24%	1%	0%	0%	2%	0%	0%	0%	5%	0%
28	18%	1%	0%	6%	13%	19%	18%	1%	5%	10%	4%	2%	0%	2%	1%	1%
29	12%	25%	6%	1%	13%	35%	2%	0%	0%	0%	0%	0%	0%	0%	0%	7%
30	5%	0%	3%	0%	8%	24%	14%	0%	8%	0%	0%	2%	7%	0%	16%	14%
31	10%	3%	6%	4%	19%	29%	26%	0%	0%	0%	0%	0%	0%	0%	1%	2%
Mensual	4%	2%	3%	6%	15%	28%	25%	7%	2%	1%	1%	1%	1%	1%	2%	3%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ESE	SE	E	SSE	ENE	N	NE	NNO	NO	S	NNE	SSO	OSO	ONO	SO	O
F. R.	28%	25%	15%	7%	6%	4%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%

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