



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

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 ²)		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	19.4	17.9	17.0	2.2	0.2	803.1	99.0	95.6	87.0	22.0	380.0	146.2	1.0
2	18.7	17.1	15.7	2.2	0.3	804.7	99.0	95.7	88.0	37.2	745.0	189.2	1.3
3	20.8	17.4	15.3	1.8	0.3	805.2	98.0	94.0	76.0	7.0	527.0	236.3	1.7
4	22.0	17.5	15.2	2.2	0.4	805.2	99.0	91.9	75.0	9.0	1164.0	316.7	2.4
5	24.2	18.8	15.2	5.4	0.6	804.5	98.0	85.9	61.0	0.0	1259.0	449.1	3.5
6	22.9	19.0	16.8	3.6	0.2	804.0	98.0	88.8	67.0	17.2	1048.0	254.7	2.1
7	21.8	18.0	15.5	2.7	0.4	804.3	99.0	93.6	67.0	1.2	1011.0	247.5	1.8
8	24.1	18.9	14.7	3.1	0.8	803.9	98.0	86.7	57.0	0.0	1281.0	394.3	3.2
9	24.0	19.4	16.1	2.7	0.6	803.0	98.0	86.9	64.0	0.0	1176.0	303.0	2.6
10	25.2	19.9	16.4	3.6	0.7	801.7	98.0	84.9	54.0	0.0	1181.0	412.5	3.2
11	25.7	20.3	16.3	2.7	0.6	800.0	97.0	81.2	52.0	0.0	868.0	460.3	3.8
12	26.0	20.6	16.6	5.4	0.9	799.2	98.0	79.4	49.0	0.0	1144.0	533.7	4.3
13	26.2	20.4	15.9	3.6	0.8	800.0	98.0	81.3	52.0	0.0	1116.0	403.4	3.4
14	21.8	18.7	15.2	2.2	0.7	801.1	96.0	88.3	67.0	1.2	1051.0	244.4	1.9
15	23.1	18.7	14.4	3.1	0.6	802.0	97.0	84.9	58.0	0.0	1143.0	354.0	2.7
16	21.6	18.4	15.8	2.2	0.2	802.5	98.0	90.0	72.0	0.0	555.0	192.3	1.5
17	21.7	18.3	16.3	4.5	0.4	803.2	97.0	90.4	71.0	0.0	861.0	207.9	1.6
18	22.6	18.5	15.5	2.2	0.4	804.2	98.0	89.6	70.0	0.0	809.0	218.1	1.6
19	21.8	17.9	15.0	2.7	0.5	803.6	97.0	90.7	73.0	1.2	944.0	223.7	1.6
20	21.7	17.6	14.4	2.7	0.6	803.4	98.0	89.5	73.0	1.2	1169.0	301.0	2.3
21	24.4	18.5	13.3	4.0	0.9	802.6	97.0	82.6	53.0	0.8	1151.0	435.3	3.5
22	22.9	19.0	15.7	4.5	0.5	802.2	98.0	88.5	74.0	1.2	1174.0	242.5	2.1
23	20.8	17.9	16.4	1.8	0.2	802.8	98.0	94.7	80.0	3.6	803.0	152.7	1.2
24	21.9	18.1	15.9	2.7	0.4	802.3	98.0	91.6	72.0	2.8	1021.0	241.6	1.9
25	18.6	16.8	15.5	2.2	0.3	803.9	99.0	94.5	82.0	6.6	468.0	146.7	1.1
26	22.4	18.2	15.4	2.7	0.4	803.3	99.0	90.2	71.0	0.4	1222.0	383.3	2.9
27	22.0	18.2	15.2	2.7	0.5	803.1	98.0	88.6	72.0	0.0	893.0	297.1	2.3
28	24.1	18.3	13.7	4.5	1.0	802.6	98.0	83.4	59.0	0.0	1153.0	409.3	3.5
29	22.1	17.9	14.7	2.7	0.5	802.2	98.0	91.1	69.0	2.4	793.0	234.5	1.8
30	21.3	17.2	14.9	3.6	0.6	802.6	98.0	91.9	74.0	10.4	1021.0	198.0	1.6
Mensual	26.2	18.4	13.3	5.4	0.5	802.9	99.0	88.9	49.0	125.4	1281.0	294.3	69.1

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

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	NO	SO	ENE	ONO	SSO	OSO	O	NE	NNO	E	S	SSE	ESE	N	SE	NNE
F. R.	21%	14%	9%	8%	8%	8%	7%	7%	5%	3%	3%	3%	2%	1%	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)

DIA	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	0%	0%	0%	0%	7%	19%	5%	4%	9%	6%	17%	3%	0%	0%	0%	0%
2	0%	0%	0%	27%	2%	6%	0%	3%	15%	6%	10%	0%	0%	0%	0%	0%
3	0%	6%	6%	35%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	15%	4%
4	0%	2%	19%	57%	15%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5	0%	11%	18%	33%	7%	22%	0%	0%	0%	1%	1%	3%	0%	0%	4%	1%
6	21%	5%	2%	8%	11%	3%	1%	0%	0%	0%	19%	4%	0%	0%	6%	19%
7	0%	0%	39%	32%	6%	0%	17%	0%	1%	0%	0%	6%	0%	0%	0%	0%
8	0%	0%	63%	35%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
9	0%	1%	19%	72%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%
10	2%	0%	41%	53%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%
11	1%	10%	29%	44%	1%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	10%
12	2%	3%	32%	57%	4%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
13	4%	6%	41%	35%	4%	3%	0%	0%	0%	3%	0%	0%	0%	0%	1%	3%
14	1%	2%	64%	29%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
15	0%	1%	40%	58%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
16	0%	15%	7%	49%	11%	0%	0%	0%	0%	0%	0%	0%	15%	4%	0%	0%
17	0%	0%	35%	44%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
18	0%	1%	13%	65%	6%	0%	0%	1%	4%	0%	0%	0%	0%	0%	10%	0%
19	0%	0%	6%	75%	14%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
20	0%	2%	35%	55%	5%	1%	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%
21	0%	1%	52%	37%	8%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
22	5%	2%	32%	32%	8%	8%	1%	3%	3%	1%	2%	1%	0%	1%	1%	0%
23	0%	0%	14%	42%	24%	0%	15%	0%	0%	0%	6%	0%	0%	0%	0%	0%
24	3%	0%	33%	60%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
25	15%	11%	17%	40%	1%	0%	0%	0%	0%	1%	12%	0%	0%	0%	2%	1%
26	1%	0%	7%	81%	3%	6%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%
27	4%	3%	34%	31%	6%	1%	0%	0%	0%	0%	2%	1%	3%	1%	9%	6%
28	0%	1%	62%	36%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
29	0%	0%	42%	55%	1%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
30	0%	0%	44%	42%	6%	3%	1%	0%	0%	0%	0%	0%	0%	0%	4%	0%
Mensual	2%	3%	29%	45%	6%	3%	1%	0%	1%	1%	2%	1%	1%	0%	2%	2%

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R. V.	ENE	NE	E	ESE	NNE	SO	NO	N	NNO	SE	S	OSO	SSO	O	SSE	ONO
F. R.	45%	29%	6%	3%	3%	2%	2%	2%	2%	1%	1%	1%	1%	1%	0%	0%

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