



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 INGEOMINAS

CÓDIGO: EMM-03

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 (%)			Ll. (mm)	Radiación Solar (W/m ²)		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	22.8	15.7	13.4	3.6	0.7	787.5	89.0	83.1	60.0	9.7	1011.0	161.2	1.3
2	23.9	16.7	13.1	3.1	0.8	787.6	89.0	76.0	51.0	0.5	1280.0	363.7	2.5
3	24.6	17.0	13.4	3.1	0.6	787.8	91.0	78.4	51.0	11.7	939.0	287.0	2.3
4	18.4	14.6	12.9	3.1	0.6	788.2	92.0	86.1	66.0	27.4	345.0	165.6	1.0
5	28.1	17.8	12.9	4.0	0.8	787.3	85.0	70.8	37.0	0.0	1188.0	555.5	4.1
6	25.9	17.5	13.0	8.0	1.5	787.1	91.0	75.3	44.0	12.2	1274.0	491.8	3.8
7	26.7	17.8	13.7	4.9	1.1	786.9	90.0	75.3	43.0	2.0	1170.0	381.9	2.8
8	21.1	15.4	13.2	8.0	1.2	787.2	91.0	84.6	65.0	10.4	643.0	172.1	1.3
9	24.6	16.4	13.2	4.9	0.8	787.2	90.0	78.8	55.0	3.8	1073.0	263.7	1.8
10	23.1	15.9	12.7	4.0	0.8	788.0	92.0	82.3	60.0	45.0	1077.0	247.5	1.8
11	21.3	15.7	13.2	4.0	0.7	788.0	92.0	83.1	66.0	31.0	689.0	223.0	1.3
12	22.9	14.9	12.3	7.2	1.4	788.6	92.0	84.1	56.0	21.8	675.0	240.4	1.5
13	25.1	17.0	11.8	6.7	1.6	787.4	91.0	72.0	44.0	0.8	1268.0	549.7	4.1
14	22.4	15.1	12.3	5.8	1.3	787.3	92.0	81.4	56.0	43.4	1130.0	299.1	1.8
15	21.8	15.5	12.6	8.0	0.9	787.6	92.0	77.2	55.0	27.2	598.0	282.5	2.3
16	22.1	14.5	11.8	8.0	0.8	787.7	92.0	82.8	55.0	43.7	930.0	220.0	1.3
17	19.2	13.3	11.8	3.6	1.0	787.8	92.0	88.9	68.0	29.0	889.0	168.6	1.0
18	19.8	13.7	11.2	4.9	0.9	788.4	93.0	85.8	64.0	7.4	1056.0	265.3	1.5
19	25.2	16.0	11.0	5.4	1.6	789.3	77.0	61.8	33.0	0.8	1312.0	490.9	3.6
20	22.1	15.8	12.8	4.5	0.8	789.6	76.0	56.7	35.0	0.0	652.0	275.6	2.3
21	25.5	15.9	11.9	4.0	0.6	788.6	79.0	64.3	33.0	0.0	1123.0	407.3	3.6
22	24.8	16.6	12.0	4.9	1.2	787.6	91.0	64.5	32.0	0.0	1132.0	437.2	3.6
23	24.8	17.1	11.8	4.9	0.8	787.5	90.0	67.3	45.0	30.2	1129.0	436.3	3.6
24	25.5	17.3	13.5	3.6	0.7	787.9	91.0	74.0	41.0	0.3	1026.0	475.2	3.3
25	25.5	17.0	12.6	3.6	0.8	787.1	90.0	75.9	46.0	13.7	1322.0	444.6	3.3
26	21.3	16.6	12.7	2.2	0.6	785.6	91.0	79.1	57.0	2.0	863.0	235.6	1.8
27	26.5	17.9	13.1	3.1	0.9	785.3	90.0	73.5	46.0	1.0	1107.0	445.7	3.3
28	19.8	15.3	13.0	3.6	0.5	786.2	92.0	85.9	71.0	64.5	584.0	182.4	1.0
29	20.6	14.4	12.9	4.0	0.6	786.7	93.0	87.1	66.0	13.2	1031.0	138.3	1.0
30	16.3	13.5	11.9	2.7	0.6	787.0	92.0	88.5	81.0	30.0	443.0	127.4	0.8
31	23.6	16.0	11.6	4.9	1.0	786.7	89.0	72.3	53.0	0.0	1158.0	377.0	2.8
Mensual	28.1	15.9	11.0	8.0	0.9	787.5	93.0	77.3	32.0	482.6	1322.0	316.5	71.2

Convenciones: V.V.: Velocidad del Viento P.B.: Presión Barométrica Ll.: Lluvia diaria ET.: Evapotranspiración. Nota: Datos resaltados en rojo están incompletos.



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 INGEOMINAS

CÓDIGO: EMM-03



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

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ONO	O	NO	OSO	SO	SSO	NNO	SSE	S	ESE	N	SE	E	NNE	ENE	NE
F. R.	17%	16%	11%	10%	8%	5%	4%	4%	4%	4%	4%	4%	3%	2%	1%	1%

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



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 INGEOMINAS

CÓDIGO: EMM-03

OCTUBRE 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	6%	3%	6%	1%	8%	10%	7%	3%	15%	12%	6%	8%	6%	8%	3%	0%
2	0%	0%	0%	1%	6%	4%	14%	8%	5%	16%	15%	11%	8%	10%	3%	0%
3	8%	3%	5%	10%	7%	8%	0%	0%	13%	3%	4%	1%	8%	15%	10%	5%
4	11%	6%	8%	1%	1%	6%	27%	22%	4%	7%	1%	0%	0%	3%	2%	1%
5	1%	24%	0%	1%	5%	11%	11%	4%	9%	1%	0%	3%	0%	24%	5%	1%
6	3%	0%	3%	0%	5%	11%	10%	10%	6%	10%	5%	3%	4%	18%	8%	3%
7	8%	0%	0%	0%	11%	20%	7%	8%	8%	4%	2%	3%	6%	20%	3%	0%
8	3%	1%	1%	1%	8%	10%	10%	17%	7%	2%	1%	4%	12%	15%	4%	3%
9	5%	1%	0%	0%	13%	8%	8%	7%	12%	9%	6%	0%	15%	13%	2%	0%
10	12%	17%	10%	10%	4%	3%	15%	11%	0%	1%	4%	0%	3%	4%	0%	6%
11	0%	0%	0%	6%	8%	2%	31%	0%	3%	2%	5%	10%	22%	3%	9%	0%
12	0%	0%	0%	1%	6%	25%	22%	7%	13%	4%	11%	8%	1%	1%	1%	0%
13	8%	0%	1%	1%	15%	28%	4%	6%	1%	2%	1%	5%	8%	3%	8%	7%
14	6%	5%	3%	2%	3%	10%	19%	4%	3%	2%	1%	1%	12%	25%	3%	1%
15	1%	2%	0%	1%	1%	41%	2%	8%	3%	17%	9%	2%	1%	1%	8%	2%
16	1%	1%	0%	0%	2%	6%	6%	29%	3%	1%	9%	5%	11%	15%	8%	3%
17	0%	0%	0%	0%	10%	19%	3%	16%	9%	22%	10%	8%	0%	1%	1%	0%
18	0%	1%	1%	0%	1%	6%	21%	11%	8%	16%	16%	5%	9%	4%	1%	1%
19	0%	0%	3%	9%	10%	45%	20%	3%	2%	0%	1%	3%	1%	2%	0%	0%
20	0%	0%	0%	0%	1%	10%	30%	23%	0%	3%	0%	3%	0%	25%	4%	1%
21	0%	0%	0%	0%	0%	0%	0%	34%	6%	17%	8%	14%	19%	2%	1%	0%
22	7%	3%	3%	3%	17%	3%	10%	14%	7%	1%	8%	5%	6%	9%	3%	2%
23	0%	0%	0%	0%	4%	6%	13%	13%	10%	6%	0%	14%	1%	28%	3%	1%
24	5%	6%	7%	3%	8%	0%	1%	1%	0%	1%	2%	26%	17%	8%	14%	1%
25	4%	3%	3%	4%	3%	2%	2%	9%	5%	2%	3%	12%	36%	8%	3%	1%
26	4%	2%	1%	3%	2%	6%	5%	5%	10%	27%	10%	8%	2%	11%	1%	1%
27	5%	1%	0%	0%	0%	7%	2%	8%	22%	7%	8%	19%	5%	6%	5%	6%
28	6%	1%	1%	3%	2%	0%	0%	1%	1%	13%	24%	33%	12%	1%	1%	1%
29	3%	1%	0%	1%	0%	0%	4%	22%	21%	19%	9%	19%	0%	0%	0%	0%
30	8%	8%	10%	5%	0%	6%	0%	10%	3%	20%	0%	6%	0%	0%	3%	18%
31	8%	0%	8%	1%	1%	12%	31%	17%	22%	0%	0%	0%	0%	0%	0%	0%
Mensual	4%	3%	2%	2%	5%	11%	11%	11%	7%	8%	6%	8%	7%	9%	4%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SE	SSE	ESE	ONO	SSO	OSO	S	O	SO	E	N	NO	NNE	NE	ENE	NNO
F. R.	11%	11%	11%	9%	8%	8%	7%	7%	6%	5%	4%	4%	3%	2%	2%	2%

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