



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

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	19.2	15.6	14.2	3.1	0.2	787.5	92.0	87.9	73.0	16.5	564.0	156.7	1.0
2	18.1	14.8	12.9	4.0	0.5	788.3	93.0	87.9	77.0	47.5	426.0	146.1	1.0
3	20.5	15.5	12.7	2.2	0.1	788.5	92.0	84.3	66.0	6.6	470.0	187.5	1.3
4	23.1	15.8	12.7	4.5	0.4	788.7	92.0	82.8	55.0	19.6	1074.0	241.1	1.8
5	25.1	17.5	13.4	2.7	0.2	788.5	90.0	74.3	54.0	0.0	1053.0	374.8	2.8
6	23.3	17.1	14.0	3.1	0.1	788.7	92.0	80.4	57.0	3.8	1002.0	238.5	1.8
7	21.7	16.3	14.0	1.8	0.1	788.7	92.0	83.7	59.0	3.3	686.0	206.6	1.3
8	25.6	18.1	13.6	3.1	0.2	788.5	89.0	74.4	52.0	0.0	1082.0	361.4	2.8
9	25.2	18.8	14.5	3.1	0.1	788.3	91.0	74.0	50.0	0.0	1142.0	331.4	2.8
10	26.9	19.1	14.6	2.7	0.1	787.5	90.0	72.8	44.0	0.0	1094.0	339.0	2.8
11	27.4	19.4	14.8	3.6	0.1	786.4	90.0	71.0	43.0	0.0	786.0	412.2	3.3
12	28.0	19.8	15.1	3.1	0.2	786.0	89.0	67.9	40.0	0.0	1065.0	476.3	3.8
13	27.9	19.7	15.1	2.7	0.1	786.5	89.0	68.9	41.0	0.3	1014.0	456.4	3.6
14	22.7	17.4	14.8	2.2	0.0	786.8	86.0	75.3	54.0	0.5	844.0	186.3	1.5
15	25.7	18.0	14.0	2.7	0.1	786.8	86.0	69.9	49.0	0.0	1072.0	315.0	2.5
16	22.1	16.7	14.0	1.8	0.0	787.4	90.0	79.9	61.0	0.0	537.0	202.6	1.3
17	23.2	16.7	13.9	2.2	0.0	787.8	90.0	79.9	56.0	0.0	783.0	200.1	1.3
18	22.7	17.0	13.8	3.1	0.1	788.6	90.0	78.6	55.0	0.0	1157.0	256.0	1.8
19	20.7	16.2	13.4	2.7	0.1	788.1	90.0	80.4	63.0	1.0	498.0	153.4	1.3
20	23.2	16.4	13.1	4.5	0.4	787.4	89.0	75.4	58.0	1.5	1071.0	265.3	2.0
21	25.4	18.4	12.4	3.1	0.1	787.2	85.0	67.3	43.0	0.3	1095.0	492.7	3.8
22	24.1	17.9	13.8	2.7	0.1	787.5	91.0	76.4	55.0	18.6	1084.0	298.1	2.3
23	24.1	16.1	14.4	2.7	0.1	787.4	91.0	84.4	57.0	4.1	1192.0	207.9	1.5
24	22.8	16.5	13.9	3.1	0.1	786.8	92.0	81.0	56.0	2.5	986.0	246.2	1.5
25	18.9	14.8	12.8	3.1	0.1	787.6	91.0	84.2	69.0	8.1	807.0	165.0	1.0
26	23.6	17.0	12.9	3.6	0.1	787.6	91.0	77.5	55.0	0.3	1197.0	364.2	2.8
27	22.7	16.8	13.2	2.7	0.2	787.7	92.0	76.8	55.0	2.0	1123.0	263.0	1.8
28	27.3	18.9	13.6	4.5	0.2	787.1	82.0	63.8	43.0	0.0	1016.0	464.6	3.8
29	25.4	17.1	13.8	2.2	0.1	787.0	88.0	76.0	47.0	0.0	1102.0	247.4	1.8
30	24.7	15.9	13.4	4.5	0.4	786.8	90.0	78.8	52.0	3.3	1053.0	229.9	1.8
Mensual	28.0	17.2	12.4	4.5	0.2	787.6	93.0	77.2	40.0	139.7	1197.0	282.9	63.8

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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JUNIO 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	0%	0%	0%	0%	1%	2%	3%	8%	14%	8%	17%	27%	10%	10%	0%	0%
2	2%	9%	7%	6%	10%	3%	1%	0%	1%	0%	1%	6%	13%	10%	24%	7%
3	2%	3%	3%	0%	0%	0%	0%	0%	0%	11%	8%	40%	24%	3%	3%	2%
4	1%	1%	1%	0%	3%	10%	3%	8%	8%	4%	4%	8%	18%	16%	8%	7%
5	3%	3%	2%	0%	0%	0%	0%	0%	0%	8%	3%	20%	14%	18%	16%	13%
6	1%	0%	3%	3%	1%	0%	0%	1%	3%	8%	24%	10%	13%	22%	8%	3%
7	1%	2%	2%	1%	0%	0%	0%	1%	2%	2%	16%	33%	21%	10%	6%	3%
8	1%	0%	7%	6%	4%	3%	1%	3%	1%	1%	7%	24%	24%	13%	3%	2%
9	1%	0%	0%	0%	1%	3%	2%	4%	1%	4%	5%	27%	21%	19%	10%	3%
10	1%	1%	0%	0%	0%	1%	1%	3%	7%	6%	13%	23%	22%	12%	7%	2%
11	1%	6%	0%	0%	7%	3%	1%	0%	3%	3%	4%	21%	21%	18%	6%	5%
12	1%	1%	1%	0%	0%	1%	0%	9%	6%	3%	2%	16%	20%	21%	13%	8%
13	1%	1%	0%	3%	1%	2%	2%	3%	6%	2%	3%	19%	17%	24%	13%	1%
14	0%	10%	4%	4%	1%	1%	1%	1%	0%	2%	16%	18%	19%	13%	5%	5%
15	3%	1%	0%	1%	1%	0%	5%	1%	2%	3%	13%	24%	22%	14%	9%	1%
16	2%	1%	2%	1%	0%	0%	0%	0%	2%	1%	19%	32%	27%	9%	3%	1%
17	2%	9%	1%	3%	3%	10%	5%	1%	5%	3%	10%	17%	17%	8%	5%	1%
18	1%	3%	8%	0%	3%	0%	0%	1%	2%	4%	10%	24%	18%	21%	3%	1%
19	1%	8%	7%	4%	1%	11%	2%	2%	14%	3%	5%	15%	12%	15%	0%	0%
20	2%	3%	1%	5%	3%	10%	10%	6%	6%	4%	6%	13%	21%	8%	2%	2%
21	3%	1%	1%	6%	1%	2%	8%	1%	7%	7%	10%	17%	21%	10%	3%	3%
22	0%	2%	6%	3%	0%	0%	0%	0%	3%	3%	6%	26%	19%	21%	6%	3%
23	0%	0%	0%	0%	0%	0%	0%	0%	5%	16%	24%	28%	14%	11%	2%	1%
24	4%	3%	3%	10%	14%	1%	1%	0%	1%	10%	1%	4%	17%	14%	8%	8%
25	1%	1%	17%	3%	0%	4%	2%	1%	8%	6%	5%	15%	16%	12%	6%	3%
26	1%	1%	8%	0%	1%	0%	6%	1%	8%	4%	7%	29%	19%	10%	3%	1%
27	2%	0%	1%	0%	1%	0%	0%	0%	1%	1%	3%	35%	17%	17%	6%	15%
28	1%	0%	0%	3%	1%	1%	10%	2%	4%	6%	7%	11%	28%	15%	7%	1%
29	0%	0%	9%	0%	3%	10%	10%	3%	0%	3%	6%	24%	17%	13%	3%	0%
30	0%	4%	1%	4%	1%	5%	13%	7%	3%	5%	7%	9%	14%	15%	7%	4%
Mensual	1%	2%	3%	2%	2%	3%	3%	2%	4%	5%	9%	21%	19%	14%	7%	4%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	OSO	O	ONO	SO	NO	SSO	S	NNO	NE	SE	ESE	NNE	SSE	ENE	E	N
F. R.	21%	19%	14%	9%	7%	5%	4%	4%	3%	3%	3%	2%	2%	2%	2%	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%	0%	0%	1%	6%	15%	20%	29%	25%	3%	1%	1%	0%
2	0%	0%	3%	10%	11%	14%	1%	6%	5%	13%	23%	14%	0%	0%	1%	0%
3	0%	1%	0%	0%	0%	8%	11%	10%	28%	3%	1%	4%	28%	0%	5%	1%
4	6%	10%	4%	10%	8%	12%	9%	8%	3%	2%	2%	7%	16%	1%	1%	1%
5	1%	1%	0%	0%	1%	7%	13%	9%	12%	6%	3%	15%	1%	19%	13%	0%
6	2%	5%	0%	3%	3%	8%	2%	1%	23%	6%	7%	6%	15%	10%	2%	7%
7	0%	0%	0%	0%	0%	0%	26%	7%	12%	10%	2%	15%	27%	0%	0%	0%
8	1%	8%	5%	1%	0%	0%	0%	19%	21%	0%	0%	12%	3%	30%	0%	0%
9	9%	1%	0%	6%	0%	0%	29%	19%	1%	0%	0%	1%	4%	23%	3%	3%
10	0%	0%	0%	12%	1%	8%	0%	0%	0%	0%	1%	9%	44%	14%	3%	8%
11	3%	0%	0%	0%	2%	10%	6%	1%	2%	7%	6%	13%	33%	15%	0%	0%
12	1%	0%	0%	8%	1%	17%	3%	19%	4%	0%	19%	6%	1%	14%	6%	1%
13	1%	0%	4%	3%	7%	0%	10%	9%	8%	3%	13%	8%	6%	24%	2%	0%
14	0%	8%	6%	37%	0%	0%	1%	13%	8%	6%	13%	0%	8%	1%	0%	2%
15	0%	0%	0%	0%	0%	0%	33%	18%	4%	6%	1%	12%	8%	19%	0%	0%
16	0%	0%	0%	0%	0%	0%	0%	8%	19%	3%	6%	24%	40%	1%	0%	0%
17	0%	0%	0%	0%	0%	7%	6%	6%	3%	40%	1%	33%	3%	0%	0%	0%
18	0%	0%	1%	11%	3%	11%	13%	3%	1%	6%	11%	17%	15%	9%	0%	0%
19	1%	2%	6%	13%	0%	0%	10%	1%	20%	3%	20%	5%	1%	10%	0%	7%
20	0%	0%	1%	3%	35%	8%	13%	21%	16%	0%	0%	0%	0%	2%	0%	0%
21	0%	0%	1%	8%	1%	1%	10%	15%	8%	15%	6%	9%	22%	5%	0%	0%
22	3%	3%	1%	18%	0%	1%	3%	8%	18%	12%	6%	10%	10%	3%	3%	1%
23	1%	6%	0%	0%	0%	10%	0%	34%	5%	26%	0%	6%	0%	0%	0%	11%
24	0%	16%	0%	6%	4%	1%	1%	3%	21%	1%	0%	19%	19%	1%	6%	1%
25	1%	6%	6%	15%	6%	1%	19%	18%	13%	2%	1%	6%	6%	2%	0%	0%
26	3%	5%	1%	10%	0%	8%	47%	1%	8%	15%	1%	1%	0%	0%	0%	1%
27	0%	0%	0%	12%	0%	8%	16%	6%	6%	0%	4%	26%	9%	10%	1%	1%
28	0%	0%	0%	0%	1%	7%	43%	29%	5%	0%	0%	1%	7%	3%	4%	0%
29	2%	0%	3%	0%	0%	17%	30%	19%	10%	5%	0%	15%	0%	0%	0%	0%
30	4%	1%	1%	0%	18%	1%	8%	16%	31%	6%	1%	0%	3%	2%	2%	6%
Mensual	1%	2%	1%	6%	3%	5%	12%	11%	11%	7%	6%	11%	11%	7%	2%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SE	SSE	O	S	OSO	ONO	SSO	ENE	SO	ESE	E	NNE	NO	NNO	NE	N
F. R.	12%	11%	11%	11%	11%	7%	7%	6%	6%	5%	3%	2%	2%	2%	1%	1%

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