



# 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 ALCÁZARES

CÓDIGO: EMM-13

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	21.3	17.4	14.2	4.0	1.3	805.6	94.0	84.1	72.0	0.0	1238.0	355.1	3.0
2	21.2	17.3	14.9	5.4	2.0	804.4	93.0	82.0	73.0	4.2	1201.0	228.4	2.2
3	21.1	17.5	15.6	4.9	1.2	804.6	92.0	82.8	75.0	1.0	1229.0	219.0	2.0
4	23.3	18.1	14.6	4.0	1.5	804.6	90.0	81.5	72.0	0.2	1116.0	361.6	3.0
5	24.7	19.4	15.3	4.0	1.3	804.6	94.0	74.5	54.0	13.4	1169.0	467.8	3.9
6	23.8	19.7	16.3	4.9	1.8	803.8	79.0	65.3	48.0	0.0	1179.0	427.0	3.7
7	24.4	19.3	16.1	4.5	1.5	804.5	85.0	71.9	50.0	0.0	1065.0	351.7	3.2
8	24.9	19.7	15.9	4.9	1.8	804.5	79.0	66.2	50.0	0.0	1055.0	525.3	4.7
9	23.4	18.7	15.9	3.6	1.1	804.4	89.0	75.4	52.0	0.0	928.0	265.8	2.4
10	24.5	19.2	15.5	4.0	1.3	803.6	89.0	74.6	52.0	0.0	1202.0	400.4	3.6
11	21.9	18.2	15.6	4.0	1.3	803.6	90.0	78.1	62.0	0.0	1004.0	239.4	2.1
12	19.2	16.6	15.2	2.7	0.5	804.4	96.0	90.2	77.0	1.2	782.0	174.5	1.2
13	22.3	17.7	14.8	3.6	0.8	804.5	92.0	82.6	59.0	0.2	789.0	267.4	2.2
14	21.6	17.7	15.1	3.6	0.7	803.4	96.0	84.8	71.0	0.6	1078.0	291.9	2.2
15	21.0	16.7	15.1	3.1	0.7	804.8	97.0	92.4	72.0	6.6	1137.0	180.5	1.3
16	21.2	17.1	14.7	4.0	1.1	805.8	97.0	88.2	73.0	2.6	824.0	269.9	2.1
17	22.8	17.6	15.5	4.5	1.4	805.5	94.0	80.9	63.0	0.4	944.0	263.8	2.3
18	23.2	17.9	13.8	5.8	1.6	804.7	97.0	82.9	59.0	15.2	1227.0	486.7	3.9
19	20.9	17.1	14.3	6.3	1.2	804.5	94.0	84.9	69.0	5.8	1202.0	348.9	2.7
20	17.7	15.9	14.6	4.0	0.8	805.6	97.0	92.6	87.0	21.0	492.0	146.5	1.0
21	18.8	16.5	13.9	3.6	1.3	806.5	93.0	87.5	74.0	0.6	1280.0	252.8	2.0
22	21.4	17.7	15.1	4.9	1.1	805.6	90.0	83.4	71.0	0.0	1190.0	312.7	2.5
23	20.9	16.6	14.4	5.4	0.9	805.2	97.0	89.4	76.0	29.6	984.0	179.3	1.4
24	20.2	16.3	13.9	2.7	0.7	806.9	95.0	88.2	73.0	1.6	714.0	258.0	1.9
25	22.2	18.1	15.2	4.0	1.5	806.6	90.0	80.0	67.0	0.6	1229.0	404.9	3.4
26	22.2	18.4	16.1	4.9	2.0	806.4	87.0	75.8	57.0	0.6	882.0	323.1	2.8
27	23.0	18.6	15.1	4.9	1.2	805.3	94.0	79.6	62.0	1.4	1269.0	367.9	3.2
28	21.1	16.8	14.2	4.5	1.2	805.4	97.0	88.5	73.0	26.8	1288.0	278.1	2.1
29	22.7	18.1	15.2	4.5	1.5	805.2	94.0	81.1	64.0	0.2	1250.0	292.0	2.6
30	24.8	19.5	15.7	4.9	2.1	803.8	84.0	70.6	48.0	0.0	1099.0	498.7	4.5
31	24.5	19.8	16.2	4.9	1.4	803.5	89.0	71.5	51.0	0.0	1281.0	380.2	3.4
<b>Mensual</b>	<b>24.9</b>	<b>17.9</b>	<b>13.8</b>	<b>6.3</b>	<b>1.3</b>	<b>804.9</b>	<b>97.0</b>	<b>81.0</b>	<b>48.0</b>	<b>133.8</b>	<b>1288.0</b>	<b>316.8</b>	<b>82.5</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 ALCÁZARES

CÓDIGO: EMM-13

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	5%	0%	1%	1%	0%	6%	6%	2%	0%	1%	1%	7%	26%	18%	22%	6%
2	2%	3%	1%	3%	4%	7%	10%	8%	9%	3%	3%	3%	11%	17%	9%	8%
3	4%	7%	5%	4%	3%	0%	3%	15%	1%	3%	6%	2%	17%	10%	15%	5%
4	3%	3%	4%	0%	3%	1%	5%	4%	0%	0%	1%	3%	13%	22%	21%	15%
5	1%	1%	1%	0%	1%	2%	9%	8%	3%	4%	3%	5%	15%	15%	19%	14%
6	8%	5%	7%	4%	1%	0%	4%	15%	0%	0%	2%	4%	15%	13%	13%	9%
7	11%	10%	3%	1%	1%	1%	3%	4%	5%	3%	1%	5%	13%	16%	10%	13%
8	2%	3%	2%	1%	1%	0%	4%	10%	1%	3%	5%	7%	9%	18%	24%	10%
9	2%	1%	15%	0%	0%	0%	0%	3%	0%	1%	4%	3%	15%	33%	15%	7%
10	7%	6%	0%	1%	3%	6%	2%	0%	1%	1%	3%	6%	13%	22%	23%	8%
11	4%	8%	1%	0%	0%	1%	3%	11%	0%	0%	1%	4%	6%	25%	17%	18%
12	2%	12%	1%	1%	4%	0%	0%	0%	0%	0%	1%	8%	17%	41%	13%	1%
13	2%	1%	1%	2%	3%	3%	0%	1%	2%	11%	6%	2%	22%	24%	6%	14%
14	6%	0%	0%	0%	0%	6%	3%	3%	1%	5%	4%	7%	14%	27%	17%	7%
15	6%	5%	2%	0%	0%	0%	0%	13%	0%	1%	1%	4%	26%	14%	17%	11%
16	2%	1%	1%	0%	1%	2%	3%	8%	6%	10%	8%	2%	17%	25%	8%	7%
17	3%	7%	0%	6%	2%	4%	10%	6%	5%	3%	4%	8%	11%	17%	11%	3%
18	1%	1%	1%	0%	7%	3%	1%	3%	1%	6%	3%	6%	13%	32%	17%	6%
19	1%	1%	1%	0%	2%	0%	2%	1%	6%	6%	6%	3%	16%	24%	22%	11%
20	10%	0%	0%	0%	3%	3%	2%	8%	3%	3%	3%	6%	10%	21%	20%	7%
21	5%	1%	1%	1%	1%	4%	3%	12%	0%	4%	8%	5%	13%	17%	17%	6%
22	2%	1%	1%	0%	0%	1%	6%	8%	2%	5%	3%	6%	10%	26%	18%	11%
23	3%	0%	0%	0%	3%	7%	3%	7%	2%	6%	2%	10%	25%	17%	10%	3%
24	1%	0%	0%	0%	1%	4%	6%	4%	10%	4%	0%	16%	13%	19%	17%	5%
25	8%	10%	1%	0%	3%	0%	9%	6%	2%	0%	1%	3%	15%	17%	13%	13%
26	3%	1%	0%	2%	5%	3%	6%	9%	1%	0%	1%	2%	7%	26%	15%	19%
27	8%	1%	0%	0%	0%	0%	10%	5%	1%	4%	6%	6%	14%	18%	20%	8%
28	10%	2%	0%	0%	2%	1%	4%	3%	5%	0%	5%	3%	21%	24%	16%	4%
29	13%	3%	2%	1%	8%	1%	0%	0%	1%	0%	0%	3%	16%	26%	13%	15%
30	5%	0%	0%	0%	0%	0%	3%	8%	2%	3%	2%	10%	15%	16%	19%	16%
31	4%	3%	0%	0%	1%	1%	0%	0%	12%	1%	7%	8%	17%	15%	22%	11%
Mensual	5%	3%	2%	1%	2%	2%	4%	6%	3%	3%	3%	5%	15%	21%	16%	9%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ONO	NO	O	NNO	SSE	OSO	N	SE	SO	NNE	SSO	S	ESE	E	NE	ENE
F. R.	21%	16%	15%	9%	6%	5%	5%	4%	3%	3%	3%	3%	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)

DÍA	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	0%	0%	0%	0%	7%	19%	25%	13%	1%	23%	0%	0%	0%	0%	12%	0%
2	0%	0%	4%	0%	1%	8%	51%	32%	4%	0%	0%	0%	0%	0%	0%	0%
3	0%	1%	0%	5%	3%	22%	52%	13%	0%	1%	3%	0%	0%	0%	0%	0%
4	0%	0%	1%	12%	3%	9%	24%	41%	5%	4%	0%	0%	0%	0%	0%	0%
5	0%	6%	4%	6%	4%	8%	31%	18%	6%	8%	3%	1%	1%	3%	1%	1%
6	0%	0%	3%	1%	5%	5%	51%	28%	3%	2%	0%	0%	0%	1%	0%	0%
7	5%	0%	0%	11%	17%	8%	37%	19%	1%	0%	0%	0%	0%	0%	2%	1%
8	0%	0%	0%	0%	6%	10%	39%	27%	3%	5%	1%	0%	0%	0%	9%	0%
9	1%	0%	0%	15%	0%	1%	35%	35%	8%	0%	3%	0%	0%	3%	0%	0%
10	0%	0%	0%	0%	0%	3%	24%	43%	15%	1%	3%	0%	0%	10%	0%	0%
11	0%	6%	1%	1%	5%	16%	28%	15%	15%	10%	0%	0%	1%	0%	0%	3%
12	10%	7%	1%	1%	8%	8%	4%	1%	21%	8%	3%	7%	10%	4%	1%	6%
13	0%	0%	0%	0%	3%	16%	25%	24%	16%	2%	3%	3%	6%	0%	0%	0%
14	1%	3%	0%	1%	1%	6%	26%	8%	1%	1%	6%	3%	3%	5%	35%	0%
15	0%	0%	12%	0%	2%	0%	15%	28%	3%	0%	26%	5%	1%	1%	6%	0%
16	0%	1%	10%	2%	3%	14%	35%	12%	3%	4%	0%	0%	1%	15%	0%	0%
17	0%	0%	0%	0%	0%	3%	49%	31%	11%	6%	0%	0%	0%	0%	0%	0%
18	4%	15%	7%	5%	5%	7%	13%	12%	8%	6%	2%	0%	6%	4%	2%	4%
19	1%	3%	12%	22%	8%	10%	16%	5%	4%	8%	1%	1%	4%	0%	3%	3%
20	0%	0%	0%	0%	20%	32%	14%	33%	0%	1%	0%	0%	0%	0%	0%	0%
21	0%	0%	0%	1%	3%	11%	36%	44%	2%	0%	0%	0%	1%	0%	0%	0%
22	3%	0%	6%	3%	0%	20%	24%	19%	9%	0%	0%	0%	0%	4%	0%	10%
23	3%	1%	7%	4%	12%	10%	8%	10%	6%	8%	6%	1%	6%	7%	6%	3%
24	0%	0%	0%	1%	6%	2%	18%	12%	51%	0%	1%	0%	0%	1%	1%	6%
25	0%	6%	3%	3%	0%	13%	47%	26%	2%	0%	0%	0%	0%	0%	0%	0%
26	0%	0%	0%	0%	2%	10%	45%	35%	5%	3%	0%	0%	0%	0%	0%	0%
27	0%	0%	0%	0%	0%	11%	13%	31%	10%	7%	13%	3%	3%	9%	1%	1%
28	8%	1%	0%	1%	13%	10%	24%	14%	10%	0%	1%	0%	3%	2%	5%	6%
29	6%	0%	0%	1%	0%	2%	42%	36%	4%	0%	0%	6%	0%	3%	0%	0%
30	0%	0%	0%	0%	0%	1%	48%	38%	2%	1%	0%	1%	0%	0%	9%	0%
31	0%	1%	6%	7%	10%	6%	27%	29%	15%	0%	0%	0%	0%	0%	0%	0%
Mensual	1%	2%	3%	3%	5%	10%	30%	24%	8%	4%	2%	1%	2%	2%	3%	1%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SE	SSE	ESE	S	E	SSO	ENE	NO	NE	SO	ONO	NNE	O	N	NNO	OSO
F. R.	30%	24%	10%	8%	5%	4%	3%	3%	3%	2%	2%	2%	2%	1%	1%	1%

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