

## TORNADO - MINI SPRINKLER



### Black Nozzle - 33 lph

Maximum No. of Emitters per Lateral

(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%
<b>2</b>	-2	19	21	20	22	24	27	28	32	29	33
	-1	20	22	21	23	25	28	30	34	32	35
	0	21	23	22	24	27	30	33	36	34	38
	1	22	24	23	25	28	31	35	38	36	40
	2	23	25	24	26	30	32	37	40	38	42
<b>2.5</b>	-2	17	19	18	20	21	24	25	29	26	30
	-1	18	20	19	21	23	26	28	31	29	32
	0	19	21	20	22	25	27	30	33	31	35
	1	20	22	21	23	26	29	32	35	34	37
	2	21	23	22	24	28	30	34	37	36	39
<b>3</b>	-2	16	18	17	19	20	22	23	27	24	27
	-1	17	19	18	20	21	24	26	29	27	30
	0	18	20	19	21	23	25	28	31	29	32
	1	19	21	20	22	25	27	30	33	32	35
	2	20	22	21	23	26	28	32	35	34	37
<b>3.5</b>	-2	15	17	15	17	18	21	22	25	22	25
	-1	16	18	17	19	20	22	24	27	25	28
	0	17	19	18	20	22	24	27	29	28	31
	1	18	20	19	21	23	26	29	32	30	33
	2	19	20	20	22	25	27	31	34	32	35
<b>4</b>	-2	14	16	14	16	17	20	20	23	21	24
	-1	15	17	16	18	19	21	23	25	23	26
	0	16	18	17	19	21	23	25	28	26	29
	1	17	19	18	20	22	24	28	30	29	32
	2	18	20	19	21	24	26	30	32	31	34
<b>4.5</b>	-2	13	15	14	16	16	18	19	22	19	22
	-1	14	16	15	17	18	20	21	24	22	25
	0	15	17	16	18	20	22	24	27	25	28
	1	16	18	17	19	21	23	27	29	28	30
	2	17	19	18	20	23	25	29	31	30	33

(-) Uphill

(+) Downhill

(Continued from page 1)



**TORNADO - MINI SPRINKLER**  
 Black Nozzle - 33 lph

Emitter Spacing (m)	Slop (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%
<b>5</b>	-2	12	14	13	15	15	18	18	21	18	21
	-1	13	15	14	16	17	19	20	23	21	24
	0	15	16	15	17	19	21	23	26	24	27
	1	16	17	17	18	21	23	26	28	27	29
	2	17	18	18	19	22	24	28	30	29	32
<b>5.5</b>	-2	12	13	12	14	15	17	17	20	17	20
	-1	13	15	14	15	16	18	19	22	20	23
	0	14	16	15	17	18	20	22	25	23	26
	1	15	17	16	18	20	22	25	27	26	29
	2	16	18	17	19	22	23	27	29	28	31
<b>6</b>	-2	11	13	12	14	14	16	16	19	17	19
	-1	12	14	13	15	16	18	19	21	19	22
	0	14	15	14	16	18	20	22	24	23	25
	1	15	16	16	17	20	21	24	26	25	28
	2	16	17	17	18	21	23	26	29	28	30
<b>6.5</b>	-2	11	12	11	13	13	15	15	18	16	18
	-1	12	14	13	14	15	17	18	20	19	21
	0	13	15	14	16	17	19	21	23	22	24
	1	14	16	15	17	19	21	24	26	25	27
	2	15	17	16	18	21	22	26	28	27	29

(-) Uphill  
 (+) Downhill

## TORNADO - MINI SPRINKLER



**Blue Nozzle - 43 lph**

Maximum No. of Emitters per Lateral

(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slop (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%
<b>2</b>	-2	16	18	17	19	21	23	25	28	26	29
	-1	17	19	18	20	22	24	26	29	27	31
	0	18	20	19	21	23	25	28	31	29	32
	1	18	20	19	21	24	26	30	32	31	34
	2	19	21	20	22	25	27	31	34	32	35
<b>2.5</b>	-2	15	17	16	18	19	21	22	25	23	26
	-1	16	17	16	18	20	22	24	27	25	28
	0	16	18	17	19	21	23	26	28	27	30
	1	17	19	18	20	22	24	27	30	29	31
	2	18	19	19	20	23	25	29	31	30	33
<b>3</b>	-2	14	15	14	16	17	19	20	23	21	24
	-1	14	16	15	17	18	21	22	25	23	26
	0	15	17	16	18	20	22	24	27	25	28
	1	16	18	17	18	21	23	26	28	27	29
	2	17	18	18	19	22	24	27	30	28	31
<b>3.5</b>	-2	13	14	13	15	16	18	19	22	20	22
	-1	13	15	14	16	17	19	21	23	22	24
	0	14	16	15	17	18	20	23	25	24	26
	1	15	17	16	18	20	22	24	27	26	28
	2	16	17	17	18	21	23	26	28	27	29
<b>4</b>	-2	12	14	13	14	15	17	18	20	18	21
	-1	13	14	13	15	16	18	20	22	20	23
	0	14	15	14	16	18	19	22	24	22	25
	1	14	16	15	17	19	21	23	26	24	27
	2	15	16	16	17	20	22	25	27	26	28
<b>4.5</b>	-2	11	13	12	13	14	16	17	19	17	20
	-1	12	14	13	14	15	17	19	21	19	22
	0	13	14	14	15	17	19	21	23	21	24
	1	14	15	15	16	18	20	22	25	23	26
	2	14	16	15	17	19	21	24	26	25	27

(-) Uphill

(+) Downhill

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**TORNADO - MINI SPRINKLER**

Blue Nozzle - 43 lph

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%
<b>5</b>	-2	11	12	11	13	13	15	16	18	16	19
	-1	12	13	12	14	15	17	18	20	18	21
	0	12	14	13	15	16	18	20	22	21	23
	1	13	15	14	15	17	19	22	24	23	25
	2	14	15	15	16	19	20	23	25	24	26
<b>5.5</b>	-2	10	12	11	12	13	15	15	17	15	18
	-1	11	12	12	13	14	16	17	19	18	20
	0	12	13	13	14	16	17	19	21	20	22
	1	13	14	14	15	17	18	21	23	22	24
	2	14	15	14	16	18	20	23	24	24	26
<b>6</b>	-2	10	11	10	12	12	14	14	16	15	17
	-1	11	12	11	13	14	15	16	18	17	19
	0	12	13	12	14	15	17	18	20	19	21
	1	12	14	13	14	16	18	20	22	21	23
	2	13	14	14	15	18	19	22	24	23	25
<b>6.5</b>	-2	10	11	10	11	12	13	14	16	14	16
	-1	10	12	11	12	13	15	16	18	16	18
	0	11	12	12	13	15	16	18	20	19	21
	1	12	13	13	14	16	17	20	22	21	23
	2	13	14	14	15	17	19	22	23	23	24

(-) Uphill

(+) Downhill

## TORNADO - MINI SPRINKLER



### Green Nozzle - 75 lph

Maximum No. of Emitters per Lateral

(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%
<b>2</b>	-2	12	13	12	14	15	17	18	20	18	21
	-1	12	13	13	14	15	17	19	21	19	22
	0	12	14	13	14	16	18	19	22	20	22
	1	12	14	13	15	16	18	20	22	21	23
	2	13	14	14	15	17	19	21	23	22	24
<b>2.5</b>	-2	10	12	11	12	13	15	16	18	17	19
	-1	11	12	11	13	14	16	17	19	18	20
	0	11	12	12	13	14	16	18	20	19	21
	1	11	13	12	14	15	17	19	21	19	21
	2	12	13	13	14	16	17	19	21	20	22
<b>3</b>	-2	10	11	10	12	12	14	15	17	15	18
	-1	10	11	11	12	13	15	16	18	16	18
	0	10	12	11	12	13	15	17	18	17	19
	1	11	12	11	13	14	16	17	19	18	20
	2	11	12	12	13	15	16	18	20	19	21
<b>3.5</b>	-2	9	10	10	11	12	13	14	16	14	16
	-1	9	11	10	11	12	14	15	17	15	17
	0	10	11	10	12	13	14	16	17	16	18
	1	10	11	11	12	13	15	16	18	17	19
	2	10	12	11	12	14	15	17	19	18	20
<b>4</b>	-2	9	10	9	10	11	12	13	15	14	15
	-1	9	10	9	11	11	13	14	16	14	16
	0	9	10	10	11	12	13	15	17	15	17
	1	10	11	10	11	13	14	16	17	16	18
	2	10	11	11	12	13	15	17	18	17	19
<b>4.5</b>	-2	8	9	9	10	10	12	12	14	13	15
	-1	8	10	9	10	11	12	13	15	14	16
	0	9	10	9	10	12	13	14	16	15	16
	1	9	10	10	11	12	13	15	17	16	17
	2	10	11	10	11	13	14	16	17	17	18

(-) Uphill

(+) Downhill

(Continued from page 5)



## TORNADO - MINI SPRINKLER

Green Nozzle - 75 lph

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%
<b>5</b>	-2	8	9	8	9	10	11	12	13	12	14
	-1	8	9	9	10	10	12	13	14	13	15
	0	8	9	9	10	11	12	14	15	14	16
	1	9	10	9	10	12	13	15	16	15	17
	2	9	10	10	11	12	13	15	17	16	18
<b>5.5</b>	-2	7	8	8	9	9	11	11	13	12	13
	-1	8	9	8	9	10	11	12	14	13	14
	0	8	9	9	10	11	12	13	15	14	15
	1	9	9	9	10	11	13	14	16	15	16
	2	9	10	9	10	12	13	15	16	16	17
<b>6</b>	-2	7	8	7	8	9	10	11	12	11	13
	-1	7	8	8	9	10	11	12	13	12	14
	0	8	9	8	9	10	11	13	14	13	15
	1	8	9	9	10	11	12	14	15	14	16
	2	9	10	9	10	12	13	15	16	15	17
<b>6.5</b>	-2	7	8	7	8	9	10	10	12	11	12
	-1	7	8	8	9	9	10	11	13	12	13
	0	8	9	8	9	10	11	12	14	13	14
	1	8	9	9	9	11	12	13	15	14	15
	2	8	9	9	10	11	12	14	15	15	16

(-) Uphill

(+) Downhill

## TORNADO - MINI SPRINKLER



### Red Nozzle - 100 lph

Maximum No. of Emitters per Lateral

(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%
<b>2</b>	-2	9	10	9	11	12	13	14	16	15	17
	-1	9	10	10	11	12	14	15	17	15	17
	0	9	11	10	11	12	14	15	17	16	18
	1	10	11	10	12	13	14	16	18	16	18
	2	10	11	11	12	13	15	16	18	17	19
<b>2.5</b>	-2	8	9	9	10	10	12	13	15	13	15
	-1	8	10	9	10	11	12	13	15	14	16
	0	9	10	9	10	11	13	14	16	15	16
	1	9	10	9	11	12	13	15	16	15	17
	2	9	10	10	11	12	13	15	17	16	18
<b>3</b>	-2	8	9	8	9	10	11	12	13	12	14
	-1	8	9	8	9	10	11	12	14	13	15
	0	8	9	9	10	11	12	13	15	14	15
	1	8	9	9	10	11	12	14	15	14	16
	2	9	10	9	10	11	13	14	16	15	16
<b>3.5</b>	-2	7	8	7	9	9	10	11	13	11	13
	-1	7	8	8	9	9	11	12	13	12	14
	0	8	9	8	9	10	11	12	14	13	14
	1	8	9	8	9	10	12	13	14	13	15
	2	8	9	9	10	11	12	13	15	14	16
<b>4</b>	-2	7	8	7	8	8	10	10	12	11	12
	-1	7	8	7	8	9	10	11	12	11	13
	0	7	8	8	9	9	11	12	13	12	14
	1	7	8	8	9	10	11	12	14	13	14
	2	8	9	8	9	10	11	13	14	13	15
<b>4.5</b>	-2	6	7	7	8	8	9	10	11	10	12
	-1	7	7	7	8	8	10	10	12	11	12
	0	7	8	7	8	9	10	11	12	12	13
	1	7	8	8	8	9	11	12	13	12	14
	2	7	8	8	9	10	11	12	14	13	14

(-) Uphill

(+) Downhill

(Continued from page 7)

**TORNADO - MINI SPRINKLER**

Red Nozzle - 100 lph

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%
<b>5</b>	-2	6	7	6	7	8	9	9	11	10	11
	-1	6	7	7	8	8	9	10	11	10	12
	0	7	7	7	8	9	10	11	12	11	12
	1	7	8	7	8	9	10	11	13	12	13
	2	7	8	8	8	9	11	12	13	13	14
<b>5.5</b>	-2	6	7	6	7	7	8	9	10	9	11
	-1	6	7	6	7	8	9	9	11	10	11
	0	6	7	7	8	8	9	10	12	11	12
	1	7	7	7	8	9	10	11	12	11	13
	2	7	8	7	8	9	10	12	13	12	13
<b>6</b>	-2	5	6	6	7	7	8	8	10	9	10
	-1	6	7	6	7	7	9	9	10	9	11
	0	6	7	6	7	8	9	10	11	10	12
	1	6	7	7	8	8	9	11	12	11	12
	2	7	7	7	8	9	10	11	12	12	13
<b>6.5</b>	-2	5	6	6	6	7	8	8	9	8	10
	-1	6	6	6	7	7	8	9	10	9	10
	0	6	7	6	7	8	9	10	11	10	11
	1	6	7	7	7	8	9	10	11	11	12
	2	6	7	7	8	9	10	11	12	11	13

(-) Uphill

(+) Downhill



## TORNADO - MINI SPRINKLER

White Nozzle - 115 lph

Maximum No. of Emitters per Lateral

(Max. Flow Rate Variation - 7.5% or 10%)



Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%
<b>2</b>	-2	8	9	9	10	11	12	13	15	14	15
	-1	9	10	9	10	11	12	14	15	14	16
	0	9	10	9	10	11	13	14	16	15	16
	1	9	10	10	11	12	13	15	16	15	17
	2	9	10	10	11	12	13	15	17	16	17
<b>2.5</b>	-2	8	9	8	9	10	11	12	13	12	14
	-1	8	9	8	9	10	11	12	14	13	14
	0	8	9	9	9	10	12	13	14	14	15
	1	8	9	9	10	11	12	13	15	14	16
	2	8	9	9	10	11	12	14	15	15	16
<b>3</b>	-2	7	8	7	8	9	10	11	12	11	13
	-1	7	8	8	9	9	11	12	13	12	13
	0	7	8	8	9	10	11	12	13	13	14
	1	8	8	8	9	10	11	13	14	13	15
	2	8	9	8	9	10	12	13	14	14	15
<b>3.5</b>	-2	7	7	7	8	8	10	10	12	11	12
	-1	7	8	7	8	9	10	11	12	11	13
	0	7	8	7	8	9	10	11	13	12	13
	1	7	8	8	8	10	11	12	13	12	14
	2	7	8	8	9	10	11	12	14	13	14
<b>4</b>	-2	6	7	7	7	8	9	10	11	10	11
	-1	6	7	7	8	8	9	10	11	11	12
	0	7	7	7	8	9	10	11	12	11	12
	1	7	8	7	8	9	10	11	12	12	13
	2	7	8	8	8	9	10	12	13	12	14
<b>4.5</b>	-2	6	7	6	7	8	9	9	10	10	11
	-1	6	7	6	7	8	9	10	11	10	11
	0	6	7	7	7	8	9	10	11	11	12
	1	7	7	7	8	9	10	11	12	11	13
	2	7	7	7	8	9	10	11	12	12	13

(-) Uphill

(+) Downhill

(Continued from page 9)



**TORNADO - MINI SPRINKLER**  
White Nozzle - 115 lph

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%	7.5 %	10%
<b>5</b>	-2	6	6	6	7	7	8	9	10	9	10
	-1	6	7	6	7	8	8	9	10	10	11
	0	6	7	6	7	8	9	10	11	10	11
	1	6	7	7	7	8	9	10	12	11	12
	2	6	7	7	8	9	10	11	12	11	13
<b>5.5</b>	-2	5	6	6	6	7	8	8	9	9	10
	-1	6	6	6	7	7	8	9	10	9	10
	0	6	6	6	7	8	9	9	11	10	11
	1	6	7	6	7	8	9	10	11	11	12
	2	6	7	7	7	8	9	11	12	11	12
<b>6</b>	-2	5	6	5	6	7	7	8	9	8	9
	-1	5	6	6	6	7	8	9	10	9	10
	0	6	6	6	7	7	8	9	10	10	11
	1	6	6	6	7	8	9	10	11	10	11
	2	6	7	6	7	8	9	10	11	11	12
<b>6.5</b>	-2	5	6	5	6	6	7	8	9	8	9
	-1	5	6	5	6	7	8	8	9	9	10
	0	5	6	6	6	7	8	9	10	9	10
	1	6	6	6	7	8	8	9	10	10	11
	2	6	7	6	7	8	9	10	11	11	12

(-) Uphill  
(+) Downhill