

GLOBE

FIRE SPRINKLER CORPORATION



Residential Sprinkler Installation Guide

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GLOBE RESIDENTIAL SPRINKLER GUIDE

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GENERAL DESCRIPTION

Globe Fire Sprinkler Corporation Model GL pendent and horizontal sidewall residential sprinklers are Listed by Underwriters Laboratories Inc. for use in wet pipe sprinkler systems conforming to the design/usage requirements of NFPA 13, NFPA 13D and NFPA 13R. These sprinklers have been specially designed to conform to these standards as a minimum and additionally to the Underwriters Laboratories Inc. Standard for Residential Sprinklers for Fire Protection Service, UL 1626. They are also approved for use by the New York City Department of Buildings. Because residential sprinklers are significantly faster in operation (quick response) than ordinary sprinklers, it is extremely important that they be used in accordance with their U.L. listing, the appropriate NFPA standards and the criteria set forth herein by Globe.

WARNINGS

1. Installation of Globe GL Series Residential Sprinklers must conform to the installation requirements of this guide and must meet NFPA 13, 13D or 13R standards. They must also be installed in accordance with standards set by the authority having jurisdiction over the system installation.
2. The contractor is responsible to give the owner of the system, or his representative, a copy of this guide. Further, the owner should give a copy of this guide to a succeeding owner.
3. The owner is responsible for maintaining the system in proper working order.
4. Residential automatic sprinkler systems should be maintained and inspected in accordance with NFPA 13, 13D, 13R and 25 specifications. Professional maintenance is recommended.
5. Any questions regarding the installation of Globe GL Series Residential Sprinklers not answered in this guide may be directed to the Globe Fire Sprinkler Corporation and/or the National Fire Protection Association, as well as the authority having jurisdiction.
6. When the specifications in this guide are more strict than those of the NFPA Standards or the authority having jurisdiction, this guide must take precedence.
7. Areas such as hallways, stairwells, landings, dinettes and rooms must be separated by beams, lintels or soffits that are 8 or more inches in depth to be considered single compartments.
8. Only use the minimum number of sprinklers necessary for each compartment. Do NOT use more sprinklers than required per compartment.
9. Globe GL Series Residential Sprinklers must not be installed on soffits or beams that are greater than 3 inches in depth.
10. Beams that are 3 inches in depth or greater may be located so that their centerlines are along the boundaries of adjacent sprinkler coverage areas.
11. When a beam or partition extends down from the peak of a room, it tends to slow down the operation of the first sprinkler.
12. Use only a maximum torque of 25 ft. lbs. to install Globe GL Series Residential Sprinklers. Use of higher torque levels may distort the seating area the sprinkler, resulting in leakage.
13. Do not hang anything from the sprinklers.
14. Do not put curtains, drapes or valences around sprinklers.
15. Do not use soap and water, detergents, cleaning agents, ammonia or other chemicals to clean sprinklers. To remove dust, cobwebs, lint, etc., carefully use a feather duster or vacuum with a soft brush attachment.

IMPORTANT NOTES

1. Residential Fire Sprinkler Systems should only be designed and installed by competent professionals having full knowledge of the special design/usage requirements involved. Any changes necessary to an existing approved system should only be performed by such competent professional individuals.
2. Should the original water supply used to design the approved installed system change, it is most important that its effect on the sprinkler system be reviewed by competent professionals familiar with these special fire protection systems.
3. More information concerning Globe's GL Series Residential Sprinklers may be obtained upon request to the Globe "Customer Service Department" at the address contained in this document.

GLOBE RESIDENTIAL SPRINKLER GUIDE

NFPA 13 REQUIREMENTS:

When sprinklers are used in NFPA 13 Systems, A 0.1 Design Density minimum shall be utilized.

NFPA 13D REQUIREMENTS:

For each of the following situations, the number of sprinklers in the design area shall be all of the sprinklers within a compartment, up to a maximum of two sprinklers, that require the greatest hydraulic demand:

- (1). A flat smooth, horizontal ceiling with no beams up to a maximum of 24 ft. above the floor.
- (2). A smooth flat, sloped ceiling with no beams up to a maximum slope of 8 in 12. The highest portion of the ceiling shall not be more than 24 ft. above the floor. The highest sprinkler in the sloped portion of the ceiling shall be above all openings from that compartment containing the sloped ceiling into any communicating spaces.
- (3). A sloped ceiling with beams up to 14 in. deep with pendent sprinklers under the beams. The compartment containing the sloped, beam ceiling shall be a maximum of 600 ft² in area. The slope of the ceiling shall be between 2 in 12 and 8 in 12. The highest portion of the ceiling shall not be more than 24 ft. above the floor. The highest sprinkler in the sloped portion of the ceiling shall be above all openings from the compartment containing the sloped ceiling into any communicating spaces.
- (4). A sloped ceiling with beams of any depth with sidewall or pendent sprinklers in each pocket formed by the beams. The compartment containing the sloped, beamed ceiling shall be a maximum of 600 ft² in area. The slope of the ceiling shall be between 2 in 12 and 8 in 12. The highest portion of the ceiling shall not be more than 24 ft above the floor.

For situations not meeting one of the conditions above, residential sprinklers listed for use in specific ceiling configurations shall be permitted to be used in accordance with their listings.

For situations not meeting one of the conditions above, the number of sprinklers in the design area shall be determined in consultation with the authority having jurisdiction as appropriate for the conditions. Sprinklers shall be installed in accordance with their listing where a type of ceiling configuration is referenced in the listing.

NFPA 13R REQUIREMENTS:

Horizontal Ceiling criteria may be used for sloped ceiling configurations up to 8:12 pitch when acceptable to the Local Authority having Jurisdiction.

The following pages contain illustrations for customers reference. If conflicting data is found, NFPA 13, 13D, or 13R requirements take precedence.

GLOBE RESIDENTIAL SPRINKLER DATA

GL SERIES RESIDENTIAL SPRINKLER DESIGN GUIDE

STYLE	SIN MODEL	K FACTOR	TEMP. °F	COVERAGE FT x FT	MINIMUM FLOW GPM *	MINIMUM PRESSURE PSI *
PENDENT & RECESSED	GL4110	4.1	155, 175	12 x 12	11	7.2
				14 x 14	12	8.6
				16 x 16	14	11.7
PENDENT & RECESSED	GL4910	4.9	155, 175	12 x 12	13	7
				14 x 14	14	8.2
				16 x 16	14	8.2
				18 x 18	18	13.5
				20 x 20	20	16.7
ADJUSTABLE CONCEALED PENDENT	GL4147	4.1	155	12 x 12	11	7.2
				14 x 14	15	13.4
				16 x 16	15	13.4
ADJUSTABLE CONCEALED PENDENT	GL4947	4.9	155	12 x 12	13	7
				14 x 14	14	8.2
				16 x 16	14	8.2
				18 x 18	17	12
				20 x 20	20	16.7
ONE INCH ADJUSTABLE CONCEALED PENDENT	GL4906	4.9	155	12 x 12	13	7
				14 x 14	13	7
				16 x 16	13	7
				18 x 18	17	12
				20 x 20	20	16.7
HORIZONTAL SIDEWALL & RECESSED	GL4231	4.2	155, 175	12 x 12	13	9.6
				14 x 14	15	12.8
				16 x 16	16	14.5
				16 x 18	19	20.5
				16 x 20	23	30
HORIZONTAL SIDEWALL & RECESSED	GL4431	4.4	155, 175	12 x 12	13	8.7
				14 x 14	15	11.6
				16 x 16	16	13.2
				16 x 18	19	18.7
				16 x 20	23	27.3
PENDENT & RECESSED	GL5610	5.6	155	12 x 12	15	7.2
				14 x 14	19	11.5
				16 x 16	19	11.5
				18 x 18	21	14.1
				20 x 20	24	18.4
PENDENT & RECESSED	GL3010	3.0	155	12 x 12	8	7.1
				14 x 14	10	11.1

*WHEN THESE SPRINKLERS ARE USED IN NFPA 13 SYSTEMS, A 0.1 DESIGN DENSITY MINIMUM SHALL BE UTILIZED.

GLOBE RESIDENTIAL SPRINKLER DATA

GL SERIES RESIDENTIAL SPRINKLER DESIGN GUIDE

STYLE	SIN MODEL	K FACTOR	TEMP. °F	COVERAGE FT x FT	MINIMUM FLOW GPM **	MINIMUM PRESSURE PSI **
REPLACEMENT PENDENT & RECESSED (RES3)	GL2810	2.8	155, 175	12 x 12	10	12.7
				14 x 14	10	12.7
				16 x 16	11	15.4
				18 x 18	13	21.6
				20 x 20	16	32.7
REPLACEMENT PENDENT	GL4210	4.2	155	14 x 14	20	22.7
				16 x 16	20	22.7
REPLACEMENT RECESSED PENDENT	GL4210	4.2	155	14 x 14	18	18.4
				16 x 16	18	18.4
				18 x 18	18	18.4
REPLACEMENT PENDENT & RECESSED	GL4210	4.2	155	12 x 12	13	9.6
				20 x 20	19	20.5
REPLACEMENT CONCEALED PENDENT or REPLACEMENT ADJUSTABLE CONCEALED PENDENT	GL3511 or GL3547	3.5	155	12 x 12	9	7
				14 x 14	12	11.7
				16 x 16	12	11.7
				18 x 18	16	13.8
				20 x 20	16	20.9
REPLACEMENT CONCEALED PENDENT or REPLACEMENT ADJUSTABLE CONCEALED PENDENT	GL4211 or GL4247	4.2	155	12 x 12	13	9.6
				14 x 14	17	16.4
				16 x 16	22	27.4
REPLACEMENT HORIZONTAL SIDEWALL & RECESSED (RES4)	GL4234	4.2	155, 175	12 x 12	13	9.6
					*15	12.8
				14 x 14	14	11.1
					*16	14.5
				16 x 16	17	16.4
					*19	20.5
				16 x 18	21	25.0
				16 x 20	27	41.3
				18 x 18	22	27.4
REPLACEMENT HORIZONTAL SIDEWALL & RECESSED (RES)	GL4230	4.2	155	12 x 12	19	20.5
				14 x 14	21	25.0
				16 x 16	24	32.7
REPLACEMENT HORIZONTAL SIDEWALL & RECESSED (RES)	GL5630	5.6	155	12 x 12	20	12.8
				14 x 14	23	16.9
				16 x 16	24	18.4
REPLACEMENT HORIZONTAL SIDEWALL & RECESSED (RES2)	GL5631	5.6	155	12 x 12	18	10.3
				16 x 18	30	28.7
				16 x 20	35	39.1

* DEFLECTOR POSITION BELOW CEILING 6" TO 12".

**WHEN THESE SPRINKLERS ARE USED IN NFPA 13 SYSTEMS, A 0.1 DESIGN DENSITY MINIMUM SHALL BE UTILIZED.

GLOBE RESIDENTIAL SPRINKLER DATA

GL SERIES RESIDENTIAL SPRINKLER DISCHARGE TABLES IN GALLONS PER MINUTE

K = 3.0

PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM
1	3.00	26	15.30	51	21.42	76	26.15
2	4.24	27	15.59	52	21.63	77	26.32
3	5.20	28	15.87	53	21.84	78	26.50
4	6.0	29	16.16	54	22.05	79	26.66
5	6.71	30	16.43	55	22.25	80	26.83
6	7.35	31	16.70	56	22.45	81	27.00
7	7.94	32	16.97	57	22.65	82	27.17
8	8.49	33	17.23	58	22.85	83	27.33
9	9.00	34	17.49	59	23.04	84	27.50
10	9.49	35	17.75	60	23.24	85	27.66
11	9.95	36	18.00	61	23.43	86	27.82
12	10.39	37	18.25	62	23.62	87	27.98
13	10.82	38	18.49	63	23.81	88	28.14
14	11.22	39	18.73	64	24.00	89	28.30
15	11.62	40	18.97	65	24.19	90	28.46
16	12.00	41	19.21	66	24.37	91	28.62
17	12.37	42	19.44	67	24.56	92	28.77
18	12.73	43	19.67	68	24.74	93	28.93
19	13.08	44	19.90	69	24.92	94	29.09
20	13.42	45	20.12	70	25.10	95	29.24
21	13.75	46	20.35	71	25.28	96	29.39
22	14.07	47	20.57	72	25.46	97	29.55
23	14.39	48	20.78	73	25.63	98	29.70
24	14.70	49	21.00	74	25.81	99	29.84
25	15.00	50	21.21	75	25.98	100	30.00

K = 4.1

PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM
1	4.10	26	20.91	51	29.28	76	35.74
2	5.80	27	21.30	52	29.57	77	35.98
3	7.10	28	21.70	53	29.85	78	36.21
4	8.20	29	22.08	54	30.13	79	36.44
5	9.17	30	22.46	55	30.41	80	36.67
6	10.04	31	22.83	56	30.68	81	36.90
7	10.85	32	23.19	57	30.95	82	37.13
8	11.60	33	23.55	58	31.22	83	37.35
9	12.30	34	23.91	59	31.49	84	37.58
10	12.97	35	24.26	60	31.76	85	37.80
11	13.60	36	24.60	61	32.02	86	38.02
12	14.20	37	24.94	62	32.28	87	38.24
13	14.78	38	25.27	63	32.54	88	38.46
14	15.34	39	25.60	64	32.80	89	38.68
15	15.88	40	25.93	65	33.06	90	38.90
16	16.40	41	26.25	66	33.31	91	39.11
17	16.90	42	26.57	67	33.56	92	39.33
18	17.39	43	26.89	68	33.81	93	39.54
19	17.87	44	27.20	69	34.06	94	39.75
20	18.34	45	27.50	70	34.30	95	39.96
21	18.79	46	27.81	71	34.55	96	40.17
22	19.23	47	28.11	72	34.79	97	40.38
23	19.66	48	28.41	73	35.03	98	40.59
24	20.09	49	28.70	74	35.27	99	40.79
25	20.50	50	28.99	75	35.51	100	41.00

K = 4.2

PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM
1	4.20	26	21.42	51	29.99	76	36.61
2	5.94	27	21.82	52	30.29	77	36.85
3	7.27	28	22.22	53	30.58	78	37.09
4	8.40	29	22.62	54	30.86	79	37.33
5	9.39	30	23.00	55	31.15	80	37.57
6	10.29	31	23.38	56	31.43	81	37.80
7	11.11	32	23.76	57	31.71	82	38.03
8	11.88	33	24.13	58	31.99	83	38.26
9	12.60	34	24.49	59	32.26	84	38.49
10	13.28	35	24.85	60	32.53	85	38.72
11	13.93	36	25.20	61	32.80	86	38.95
12	14.55	37	25.55	62	33.07	87	39.17
13	15.14	38	25.89	63	33.34	88	39.40
14	15.71	39	26.23	64	33.60	89	39.62
15	16.27	40	26.56	65	33.86	90	39.84
16	16.80	41	26.89	66	34.12	91	40.07
17	17.32	42	27.22	67	34.38	92	40.28
18	17.82	43	27.54	68	34.63	93	40.50
19	18.31	44	27.86	69	34.89	94	40.72
20	18.78	45	28.17	70	35.14	95	40.94
21	19.25	46	28.49	71	35.39	96	41.15
22	19.70	47	28.79	72	35.64	97	41.37
23	20.14	48	29.10	73	35.88	98	41.58
24	20.58	49	29.40	74	36.13	99	41.79
25	21.00	50	29.70	75	36.37	100	42.00

K = 4.4

PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM
1	4.40	26	22.44	51	31.42	76	38.36
2	6.22	27	22.86	52	31.73	77	38.61
3	7.62	28	23.28	53	32.03	78	38.86
4	8.80	29	23.69	54	32.33	79	39.11
5	9.84	30	24.10	55	32.63	80	39.35
6	10.78	31	24.50	56	32.93	81	39.60
7	11.64	32	24.89	57	33.22	82	39.84
8	12.45	33	25.28	58	33.51	83	40.09
9	13.20	34	25.66	59	33.80	84	40.33
10	13.91	35	26.03	60	34.08	85	40.57
11	14.59	36	26.40	61	34.37	86	40.80
12	15.24	37	26.76	62	34.65	87	41.04
13	15.86	38	27.12	63	34.92	88	41.28
14	16.46	39	27.48	64	35.20	89	41.57
15	17.04	40	27.83	65	35.47	90	41.74
16	17.60	41	28.17	66	35.75	91	41.97
17	18.14	42	28.52	67	36.02	92	42.20
18	18.67	43	28.85	68	36.28	93	42.43
19	19.18	44	29.19	69	36.55	94	42.66
20	19.68	45	29.52	70	36.81	95	42.89
21	20.16	46	29.84	71	37.08	96	43.11
22	20.64	47	30.16	72	37.34	97	43.33
23	21.10	48	30.48	73	37.59	98	43.56
24	21.56	49	30.80	74	37.85	99	43.78
25	22.00	50	31.11	75	38.11	100	44.00

K = 4.9

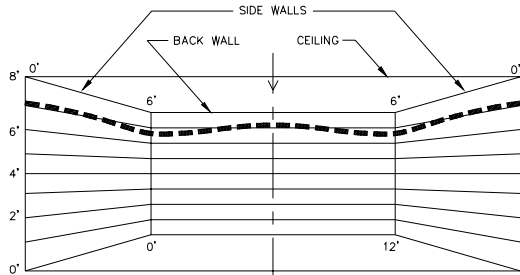
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1	4.90	26	24.99	51	34.99	76	42.72
2	6.93	27	25.46	52	35.33	77	43.00
3	8.49	28	25.93	53	35.67	78	43.28
4	9.80	29	26.39	54	36.01	79	43.55
5	10.96	30	26.84	55	36.34	80	43.83
6	12.00	31	27.28	56	36.67	81	44.10
7	12.96	32	27.72	57	36.99	82	44.37
8	13.86	33	28.15	58	37.32	83	44.64
9	14.70	34	28.57	59	37.64	84	44.91
10	15.50	35	28.99	60	37.96	85	45.18
11	16.25	36	29.40	61	38.27	86	45.44
12	16.97	37	29.81	62	38.58	87	45.70
13	17.67	38	30.21	63	38.89	88	45.97
14	18.33	39	30.60	64	39.20	89	46.23
15	18.98	40	31.00	65	39.51	90	46.49
16	19.60	41	31.38	66	39.81	91	46.74
17	20.20	42	31.76	67	40.11	92	47.00
18	20.79	43	32.13	68	40.41	93	47.25
19	21.36	44	32.50	69	40.70	94	47.51
20	21.91	45	32.87	70	41.00	95	47.76
21	22.45	46	33.23	71	41.29	96	48.01
22	22.98	47	33.59	72	41.58	97	48.26
23	23.50	48	33.95	73	41.87	98	48.51
24	24.00	49	34.30	74	42.15	99	48.75
25	24.50	50	34.65	75	42.44	100	49.00

K = 5.6

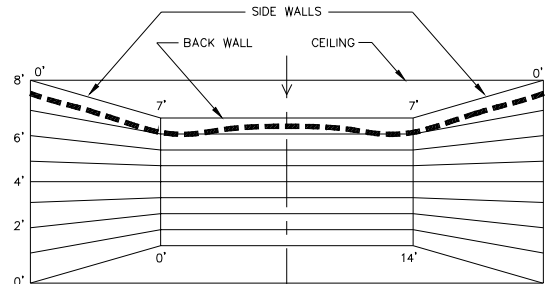
PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM
1	5.60	26	28.55	51	39.99	76	48.82
2	7.92	27	29.10	52	40.39	77	49.14
3	9.70	28	29.63	53	40.77	78	49.46
4	11.20	29	30.16	54	41.15	79	49.77
5	12.52	30	30.67	55	41.53	80	50.09
6	13.72	31	31.18	56	41.91	81	50.40
7	14.82	32	31.68	57	42.28	82	50.71
8	15.84	33	32.17	58	42.65	83	51.02
9	16.80	34	32.65	59	43.01	84	51.32
10	17.71	35	33.13	60	43.38	85	51.63
11	18.57	36	33.60	61	43.74	86	51.93
12	19.40	37	34.06	62	44.09	87	52.23
13	20.19	38	34.52	63	44.45	88	52.53
14	20.95	39	34.97	64	44.80	89	52.83
15	21.69	40	35.42	65	45.15	90	53.13
16	22.40	41	35.86	66	45.49	91	53.42
17	23.09	42	36.29	67	45.84	92	53.71
18	23.76	43	36.72	68	46.18	93	54.00
19	24.41	44	37.15	69	46.52	94	54.29
20	25.04	45	37.57	70	46.85	95	54.58
21	25.66	46	37.98	71	47.19	96	54.87
22	26.27	47	38.39	72	47.52	97	55.15
23	26.86	48	38.80	73	47.85	98	55.44
24	27.43	49	39.20	74	48.17	99	55.72
25	28.00	50	39.60	75	48.50	100	56.00

GLOBE WALL WETTING PATTERNS

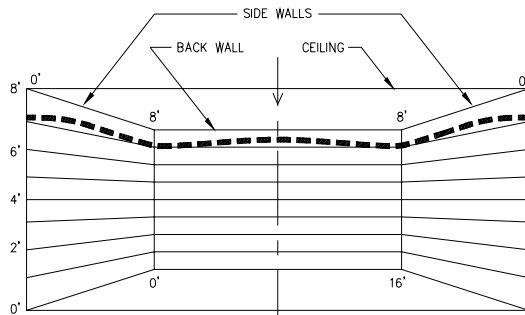
MODEL GL4110 & GL4910 RESIDENTIAL PENDENT AND RECESSED PENDENT SPRINKLERS MODEL GL4110 - K = 4.1 & MODEL GL4910 - K = 4.9



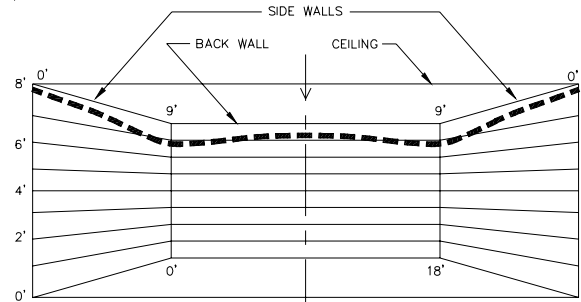
BOTH STYLES
GL4110 - 11 GPM - 7.2 PSI
GL4910 - 13 GPM - 7 PSI
12' x 12' ROOM SIZE
(HALF PATTERN)



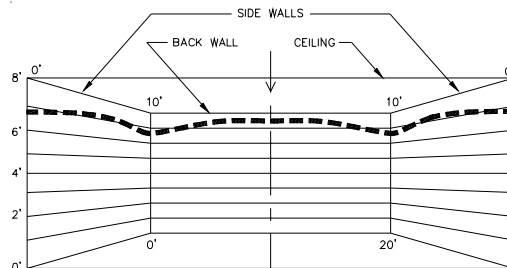
BOTH STYLES
GL4110 - 12 GPM - 8.6 PSI
GL4910 - 14 GPM - 8.2 PSI
14' x 14' ROOM SIZE
(HALF PATTERN)



BOTH STYLES
GL4110 - 14 GPM - 11.7 PSI
GL4910 - 14 GPM - 8.2 PSI
16' x 16' ROOM SIZE
(HALF PATTERN)



GL4910 - 18 GPM - 13.5 PSI
18' x 18' ROOM SIZE
(HALF PATTERN)



GL4910 - 20 GPM - 16.7 PSI

20' x 20' ROOM SIZE
(HALF PATTERN)

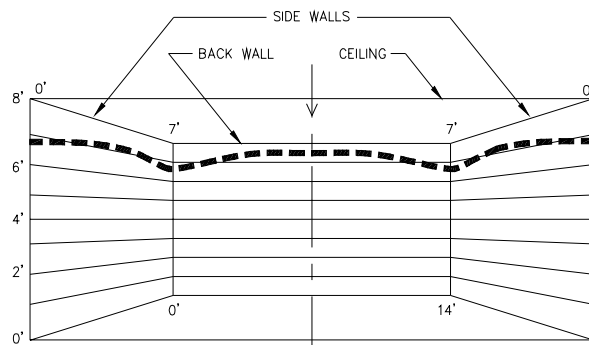
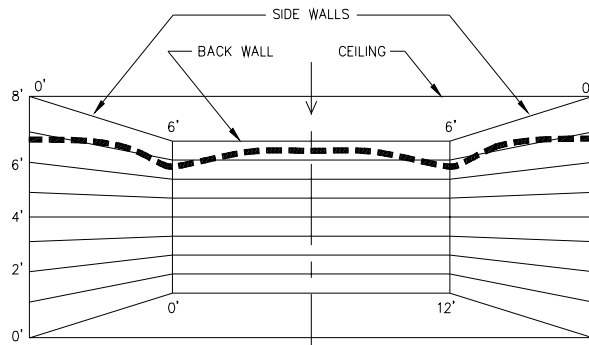
FLOW LEGEND

■■■■ TOP OF SPRINKLER FLOW

GLOBE WALL WETTING PATTERNS

MODEL GL3010 RESIDENTIAL PENDENT AND RECESSED PENDENT SPRINKLER

$K = 3.0$

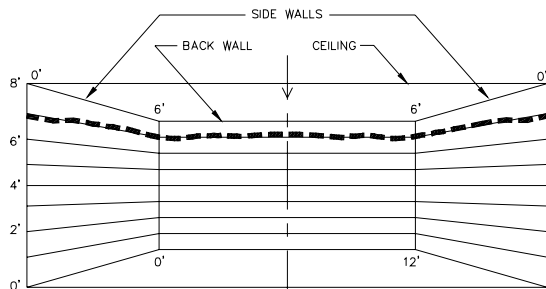


FLOW LEGEND

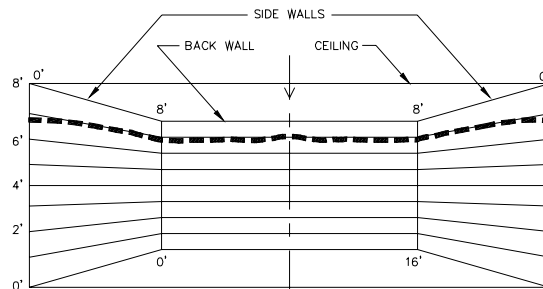
■ ■ ■ ■ TOP OF SPRINKLER FLOW

GLOBE WALL WETTING PATTERNS

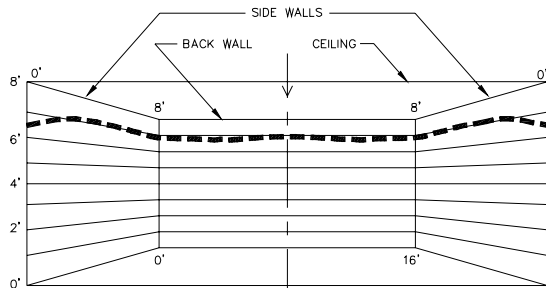
MODEL GL5610 RESIDENTIAL PENDENT AND RECESSED PENDENT SPRINKLER



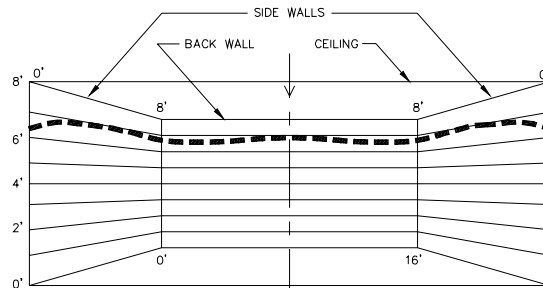
GL5610 - 15 GPM - 7.2 PSI
12' x 12' ROOM SIZE
(HALF PATTERN)



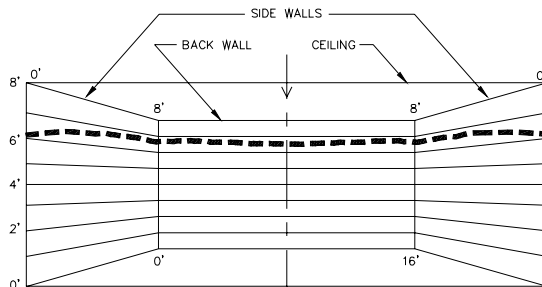
GL5610 - 19 GPM - 11.5 PSI
14' x 14' ROOM SIZE
(HALF PATTERN)



GL5610 - 19 GPM - 11.5 PSI
16' x 16' ROOM SIZE
(HALF PATTERN)



GL5610 - 21 GPM - 14.1 PSI
18' x 18' ROOM SIZE
(HALF PATTERN)



GL5610 - 24 GPM - 18.4 PSI
20' x 20' ROOM SIZE
(HALF PATTERN)

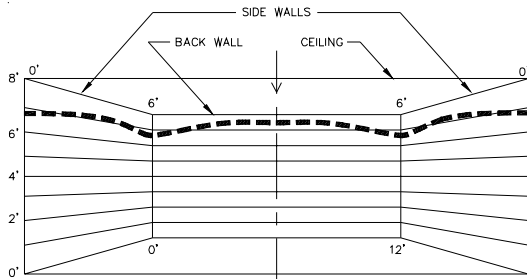
FLOW LEGEND

■ ■ ■ ■ TOP OF SPRINKLER FLOW

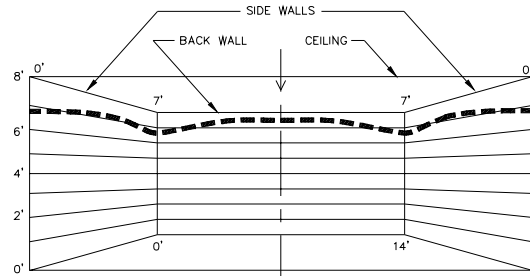
GLOBE WALL WETTING PATTERNS

MODEL GL2810 REPLACEMENT RESIDENTIAL PENDENT AND RECESSED PENDENT SPRINKLERS

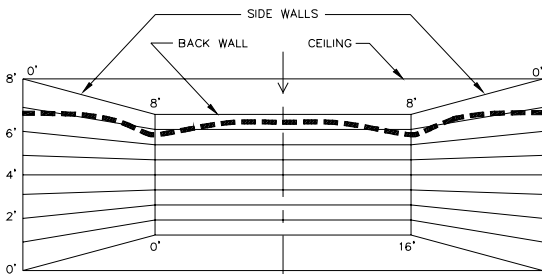
K = 2.8



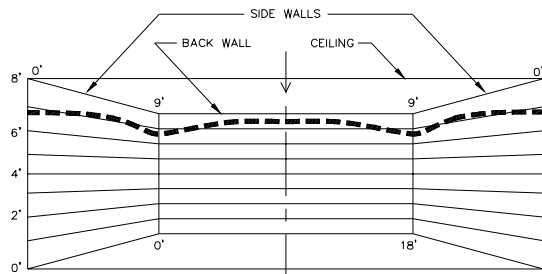
BOTH STYLES
10 GPM - 12.7 PSI
12' x 12' ROOM SIZE
(HALF PATTERN)



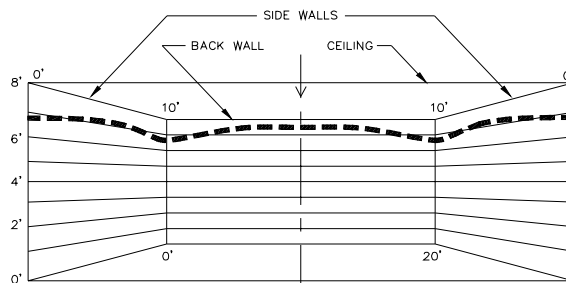
BOTH STYLES
10 GPM - 12.7 PSI
14' x 14' ROOM SIZE
(HALF PATTERN)



BOTH STYLES
10 GPM - 12.7 PSI
16' x 16' ROOM SIZE
(HALF PATTERN)



BOTH STYLES
11 GPM - 15.4 PSI
18' x 18' ROOM SIZE
(HALF PATTERN)



BOTH STYLES
14 GPM - 25.0 PSI
20' x 20' ROOM SIZE
(HALF PATTERN)

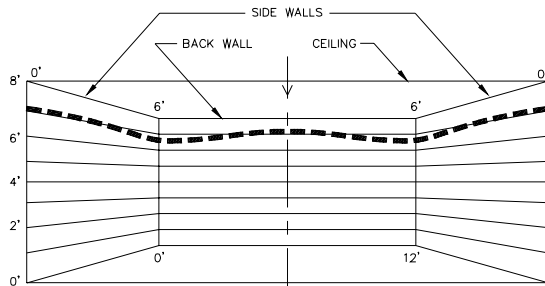
FLOW LEGEND

■ ■ ■ ■ TOP OF SPRINKLER FLOW

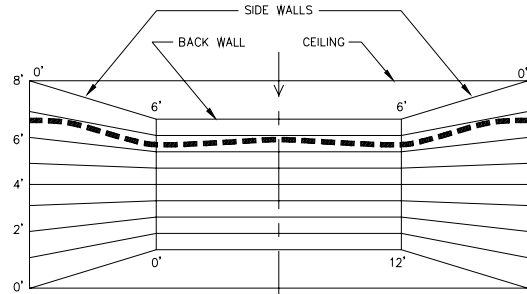
GLOBE WALL WETTING PATTERNS

MODEL GL4210 REPLACEMENT RESIDENTIAL PENDENT AND RECESSED PENDENT SPRINKLERS

$K = 4.2$

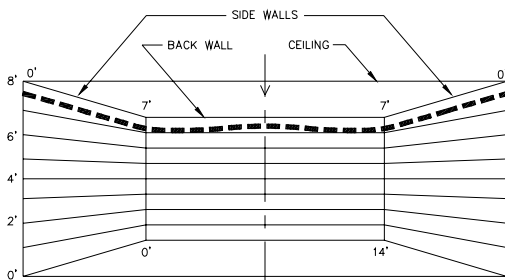


PENDENT STYLE
13 GPM - 9.6 PSI

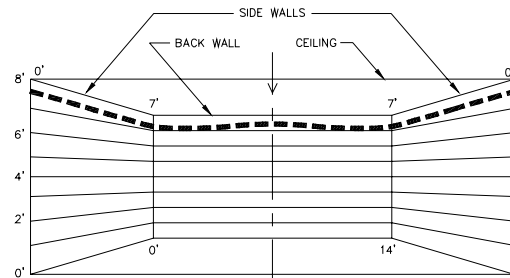


RECESSED PENDENT STYLE
13 GPM - 9.6 PSI

12' x 12' ROOM SIZE (HALF PATTERN)

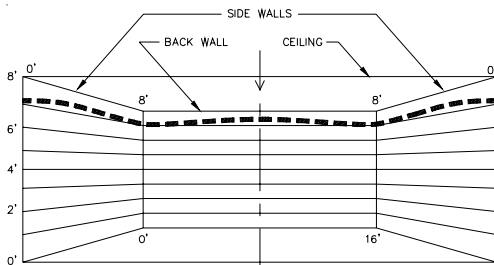


PENDENT STYLE
20 GPM - 22.7 PSI

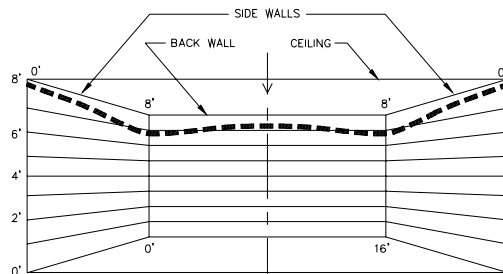


RECESSED PENDENT STYLE
18 GPM - 18.4 PSI

14' x 14' ROOM SIZE (HALF PATTERN)



PENDENT STYLE
20 GPM - 22.7 PSI



RECESSED PENDENT STYLE
18 GPM - 18.4 PSI

16' x 16' ROOM SIZE (HALF PATTERN)

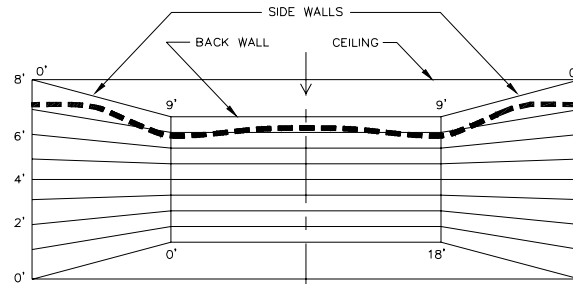
FLOW LEGEND

■■■■ TOP OF SPRINKLER FLOW

GLOBE WALL WETTING PATTERNS

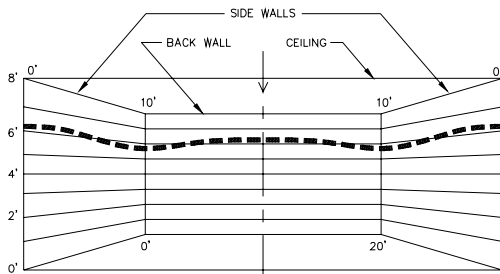
MODEL GL4210 REPLACEMENT RESIDENTIAL PENDENT AND RECESSED PENDENT SPRINKLERS

$K = 4.2$

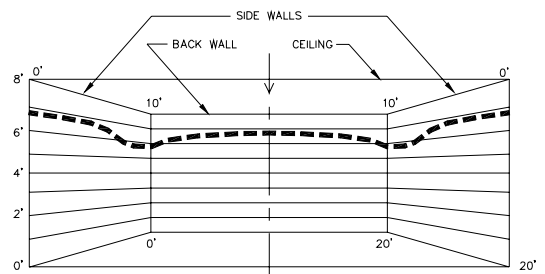


RECESSED PENDENT STYLE
18 GPM - 18.4 PSI

18' x 18' ROOM SIZE
(HALF PATTERN)



PENDENT STYLE
19 GPM - 20.5 PSI



RECESSED PENDENT STYLE
19 GPM - 20.5 PSI

20' x 20' ROOM SIZE
(HALF PATTERN)

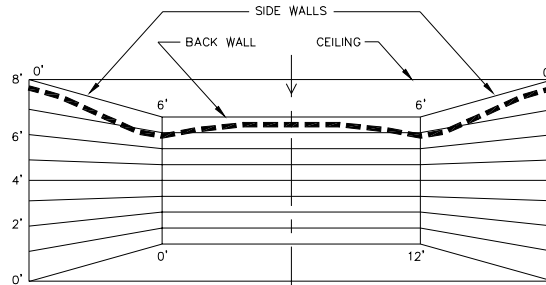
FLOW LEGEND

■■■■ TOP OF SPRINKLER FLOW

GLOBE WALL WETTING PATTERNS

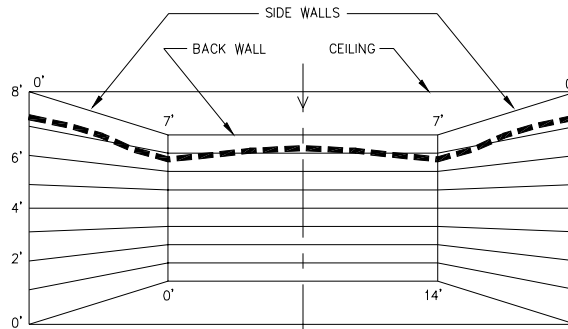
MODEL GL4147 RESIDENTIAL CONCEALED PENDENT SPRINKLER

$K = 4.1$



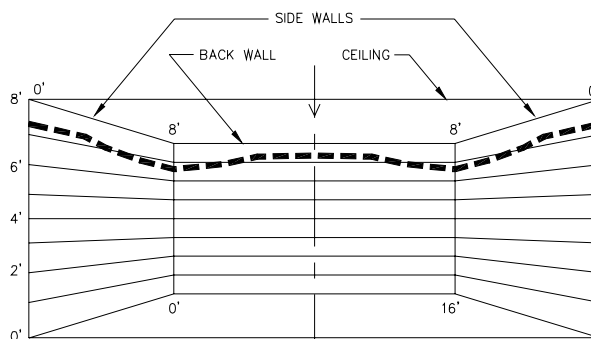
CONCEALED PENDENT STYLE
11GPM - 7.2 PSI

12' x 12' ROOM SIZE (HALF PATTERN)



CONCEALED PENDENT STYLE
15 GPM - 13.4 PSI

14' x 14' ROOM SIZE (HALF PATTERN)



CONCEALED PENDENT STYLE
15 GPM - 13.4 PSI

16' x 16' ROOM SIZE (HALF PATTERN)

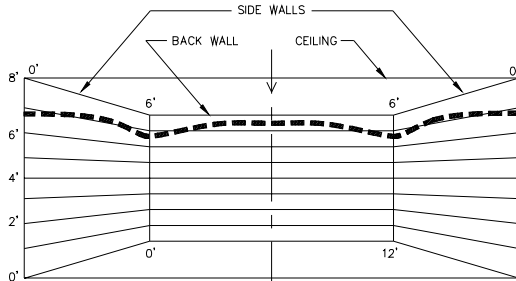
FLOW LEGEND

■ ■ ■ ■ TOP OF SPRINKLER FLOW

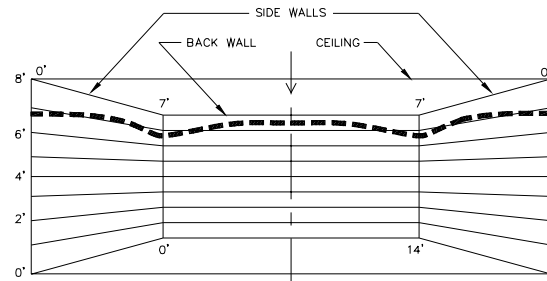
GLOBE WALL WETTING PATTERNS

MODELS GL4947 & GL4906 RESIDENTIAL ADJUSTABLE CONCEALED PENDENT SPRINKLERS

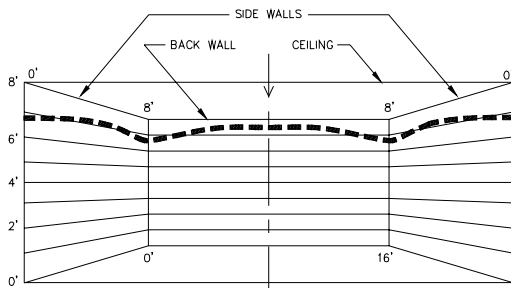
K = 4.9



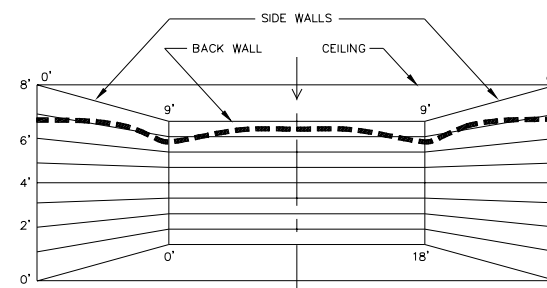
CONCEALED PENDENT STYLE
GL4947 - 13 GPM - 7 PSI
GL4906 - 13 GPM - 7 PSI
12' x 12' ROOM SIZE
(HALF PATTERN)



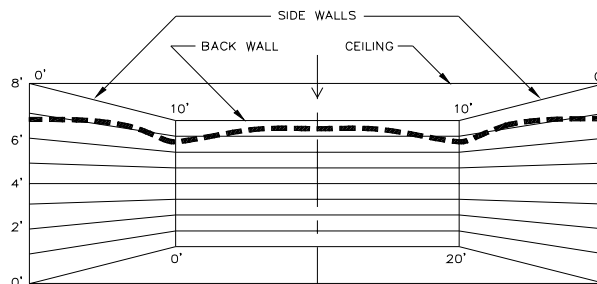
CONCEALED PENDENT STYLE
GL4947 - 14 GPM - 8.2 PSI
GL4906 - 13 GPM - 7 PSI
14' x 14' ROOM SIZE
(HALF PATTERN)



CONCEALED PENDENT STYLE
GL4947 - 14 GPM - 8.2 PSI
GL4906 - 13 GPM - 7 PSI
16' x 16' ROOM SIZE
(HALF PATTERN)



CONCEALED PENDENT STYLE
GL4947 - 17 GPM - 12 PSI
GL4906 - 17 GPM - 12 PSI
18' x 18' ROOM SIZE
(HALF PATTERN)



CONCEALED PENDENT STYLE
GL4947 - 20 GPM - 16.7 PSI
GL4906 - 20 GPM - 16.7 PSI
20' x 20' ROOM SIZE
(HALF PATTERN)

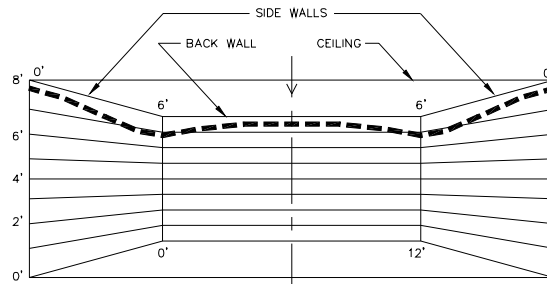
FLOW LEGEND

■ ■ ■ ■ TOP OF SPRINKLER FLOW

GLOBE WALL WETTING PATTERNS

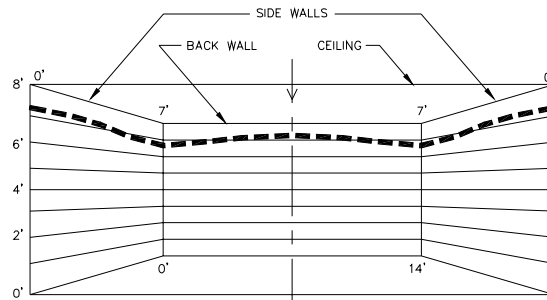
MODEL GL4211 REPLACEMENT RESIDENTIAL CONCEALED PENDENT SPRINKLER

$K = 4.2$



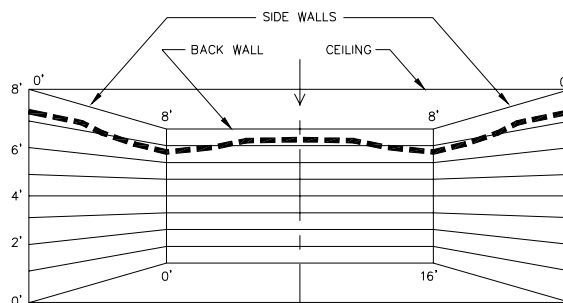
CONCEALED PENDENT STYLE
13 GPM - 9.6 PSI

12' x 12' ROOM SIZE
(HALF PATTERN)



CONCEALED PENDENT STYLE
17 GPM - 16.4 PSI

14' x 14' ROOM SIZE
(HALF PATTERN)



CONCEALED PENDENT STYLE
22 GPM - 27.4 PSI

16' x 16' ROOM SIZE
(HALF PATTERN)

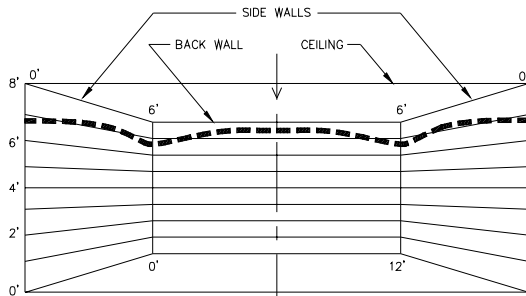
FLOW LEGEND

■ ■ ■ ■ TOP OF SPRINKLER FLOW

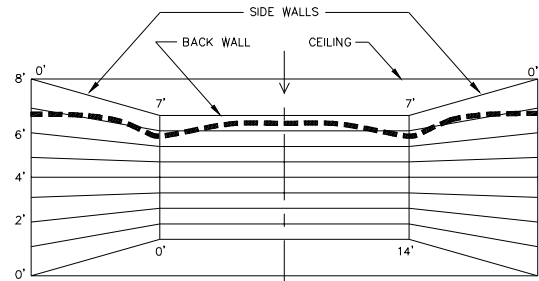
GLOBE WALL WETTING PATTERNS

MODELS GL3511 & GL3547 REPLACEMENT RESIDENTIAL CONCEALED PENDENT SPRINKLER

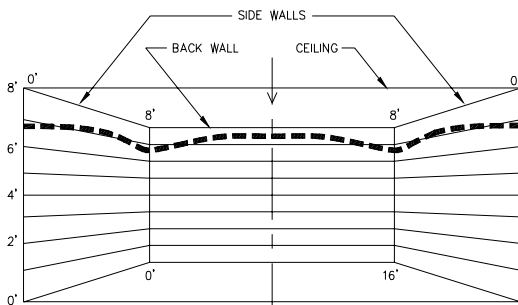
$K = 3.5$



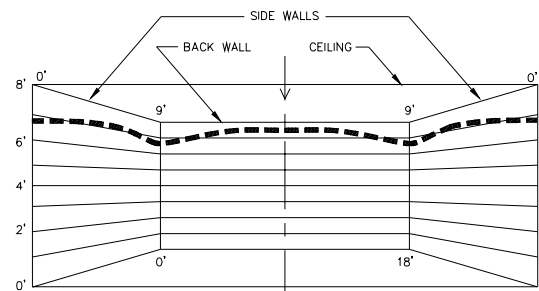
CONCEALED PENDENT STYLE
11 GPM - 7.2 PSI
12' x 12' ROOM SIZE
(HALF PATTERN)



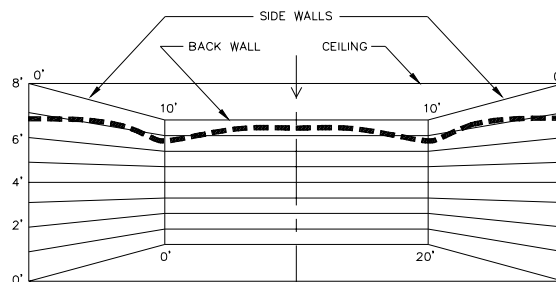
CONCEALED PENDENT STYLE
11 GPM - 7.2 PSI
14' x 14' ROOM SIZE
(HALF PATTERN)



CONCEALED PENDENT STYLE
13 GPM - 10 PSI
16' x 16' ROOM SIZE
(HALF PATTERN)



CONCEALED PENDENT STYLE
17 GPM - 17.2 PSI
18' x 18' ROOM SIZE
(HALF PATTERN)



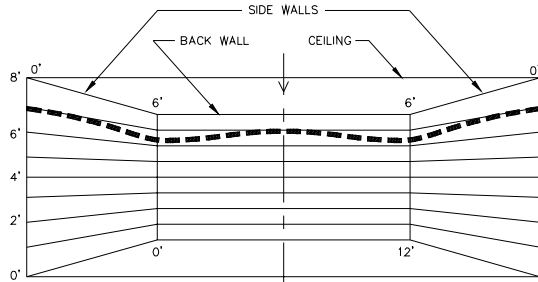
CONCEALED PENDENT STYLE
20 GPM - 23.8 PSI
20' x 20' ROOM SIZE
(HALF PATTERN)

FLOW LEGEND

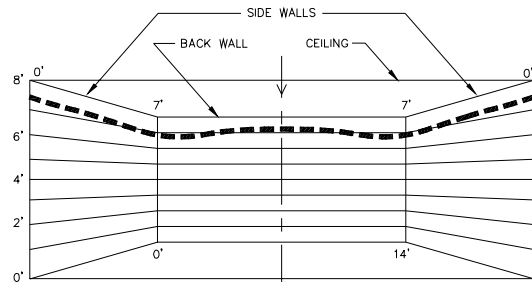
■ ■ ■ ■ TOP OF SPRINKLER FLOW

GLOBE WALL WETTING PATTERNS

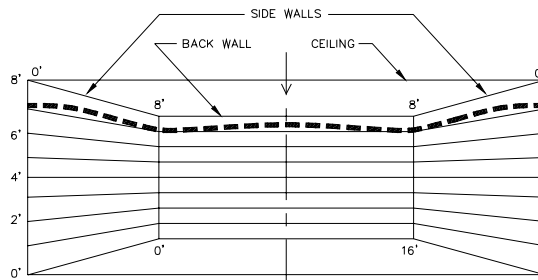
MILLENNIUM™ MODEL GL4248 RESIDENTIAL FLUSH PENDENT SPRINKLERS K = 4.1 - 58 metric



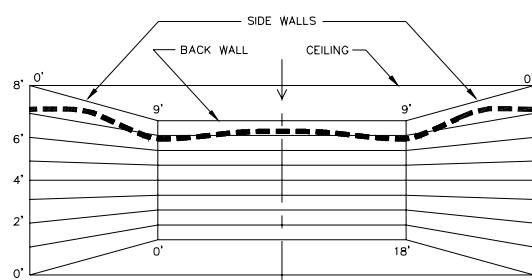
FLUSH PENDENT STYLE
11 GPM - 7.2 PSI
12' x 12' ROOM SIZE
(HALF PATTERN)



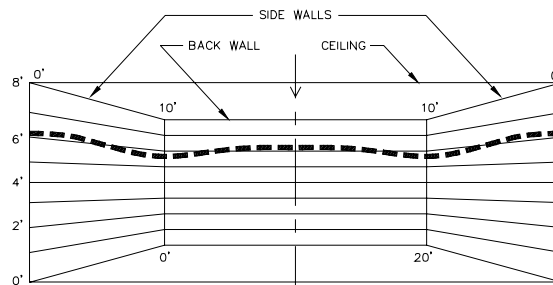
FLUSH PENDENT STYLE
11 GPM - 7.2 PSI
14' x 14' ROOM SIZE
(HALF PATTERN)



FLUSH PENDENT STYLE
13 GPM - 10 PSI
16' x 16' ROOM SIZE
(HALF PATTERN)



FLUSH PENDENT STYLE
17 GPM - 17.2 PSI
18' x 18' ROOM SIZE
(HALF PATTERN)



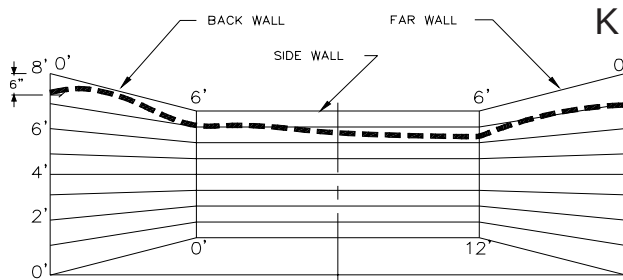
FLUSH PENDENT STYLE
20 GPM - 23.8 PSI
20' x 20' ROOM SIZE
(HALF PATTERN)

FLOW LEGEND

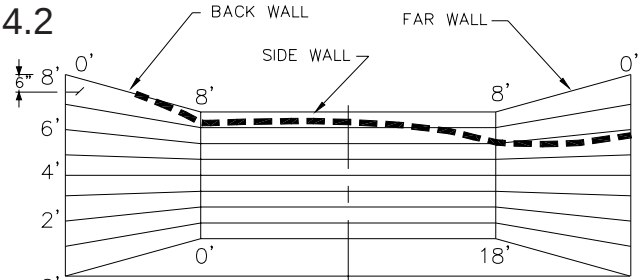
■ ■ ■ ■ TOP OF SPRINKLER FLOW

GLOBE WALL WETTING PATTERNS

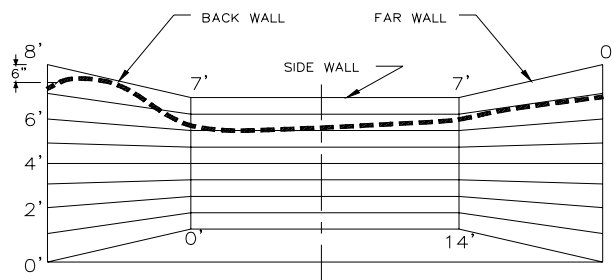
MODEL GL4231 RESIDENTIAL HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL SPRINKLERS



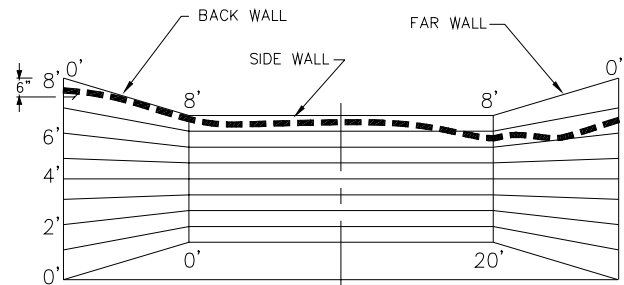
BOTH STYLES
13 GPM - 9.6 PSI
DEFLECTOR 6" BELOW CEILING
12' x 12' ROOM SIZE



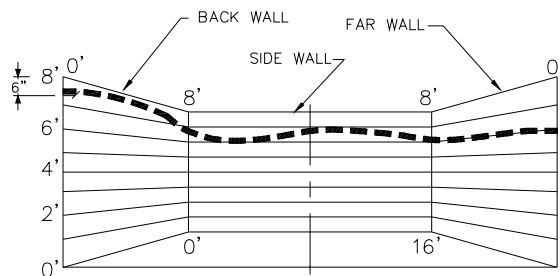
BOTH STYLES
19 GPM - 20.5 PSI
DEFLECTOR 6" BELOW CEILING
16' x 18' ROOM SIZE



BOTH STYLES
15 GPM - 12.8 PSI
DEFLECTOR 6" BELOW CEILING
14' x 14' ROOM SIZE



BOTH STYLES
23 GPM - 30.0 PSI
DEFLECTOR 6" BELOW CEILING
16' x 20' ROOM SIZE



BOTH STYLES
16 GPM - 14.5 PSI
DEFLECTOR 6" BELOW CEILING
16' x 16' ROOM SIZE

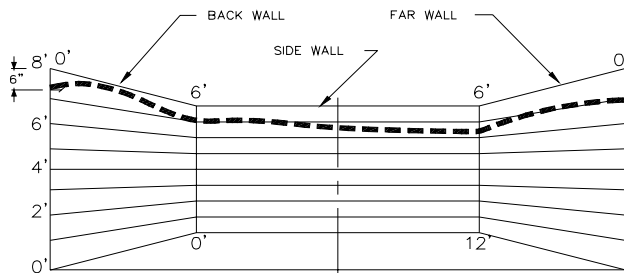
FLOW LEGEND

■ ■ ■ ■ TOP OF SPRINKLER FLOW

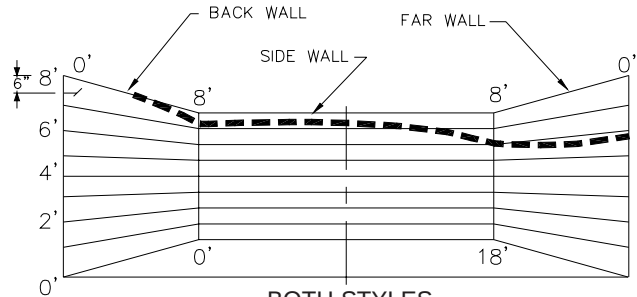
GLOBE WALL WETTING PATTERNS

MODEL GL4431 RESIDENTIAL HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL SPRINKLERS

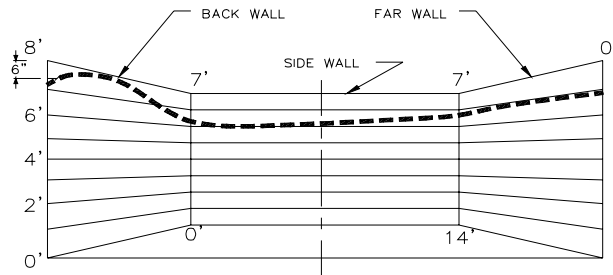
K = 4.4



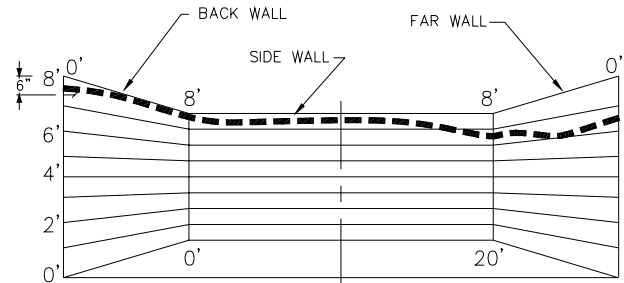
BOTH STYLES
13 GPM - 8.7 PSI
DEFLECTOR 6" BELOW CEILING
12' x 12' ROOM SIZE



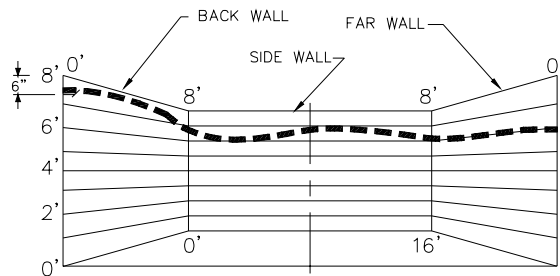
BOTH STYLES
19 GPM - 18.7 PSI
DEFLECTOR 6" BELOW CEILING
16' x 18' ROOM SIZE



BOTH STYLES
15 GPM - 11.6 PSI
DEFLECTOR 6" BELOW CEILING
14' x 14' ROOM SIZE



BOTH STYLES
23 GPM - 27.3 PSI
DEFLECTOR 6" BELOW CEILING
16' x 20' ROOM SIZE



BOTH STYLES
16 GPM - 13.2 PSI
DEFLECTOR 6" BELOW CEILING
16' x 16' ROOM SIZE

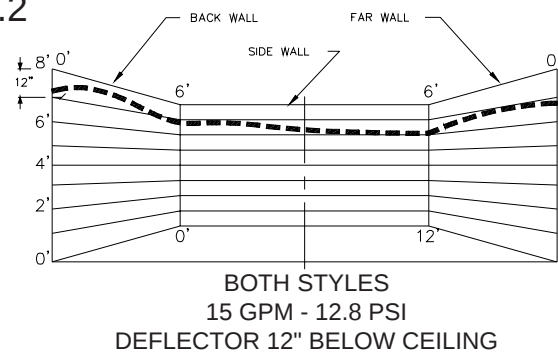
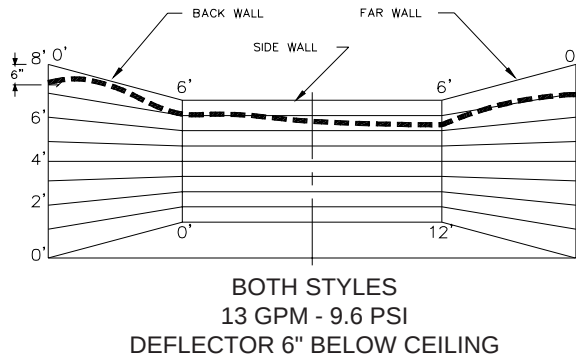
FLOW LEGEND

■■■■ TOP OF SPRINKLER FLOW

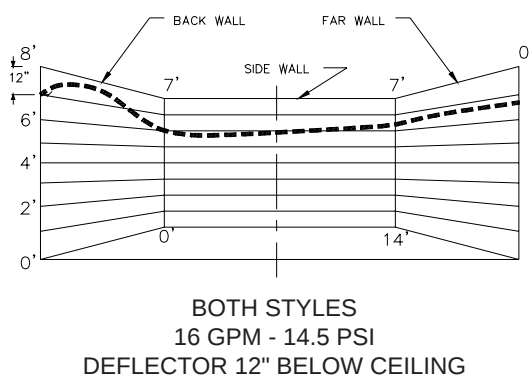
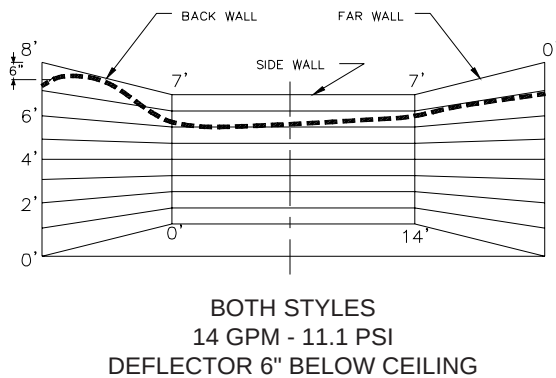
GLOBE WALL WETTING PATTERNS

MODEL GL4234 REPLACEMENT RESIDENTIAL HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL SPRINKLERS

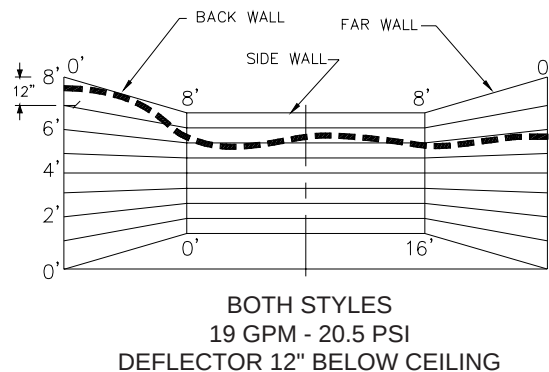
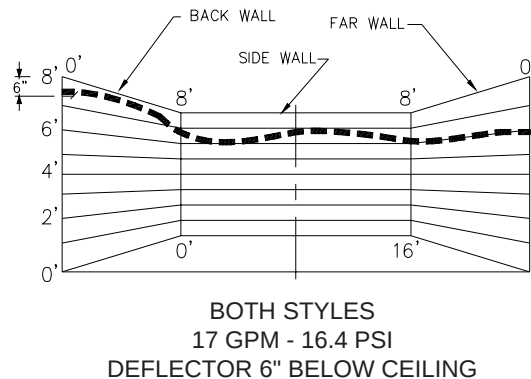
K = 4.2



12' x 12' ROOM SIZE



14' x 14' ROOM SIZE



16' x 16' ROOM SIZE

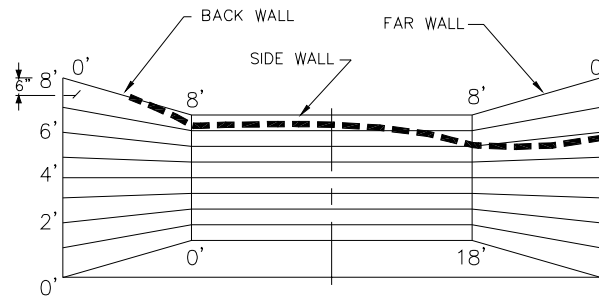
FLOW LEGEND

■■■■ TOP OF SPRINKLER FLOW

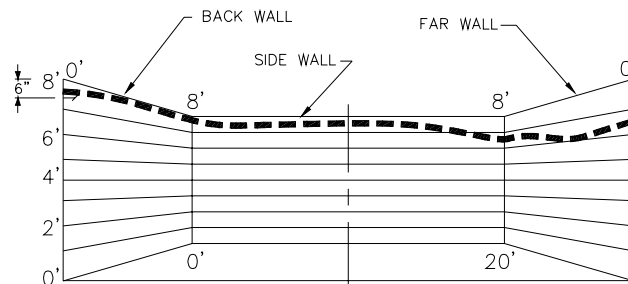
GLOBE WALL WETTING PATTERNS

MODEL GL4234 REPLACEMENT RESIDENTIAL HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL SPRINKLERS

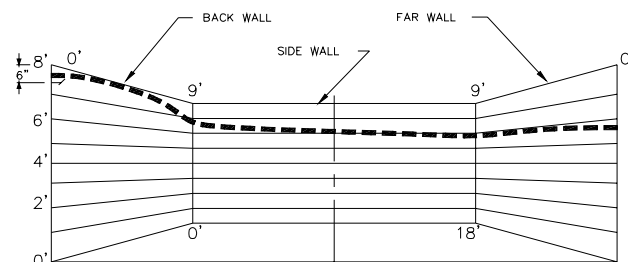
$K = 4.2$



BOTH STYLES
21 GPM - 25.0 PSI
16' x 18' ROOM SIZE



BOTH STYLES
27 GPM - 41.3 PSI
16' x 20' ROOM SIZE



BOTH STYLES
22 GPM - 27.4 PSI
18' x 18' ROOM SIZE

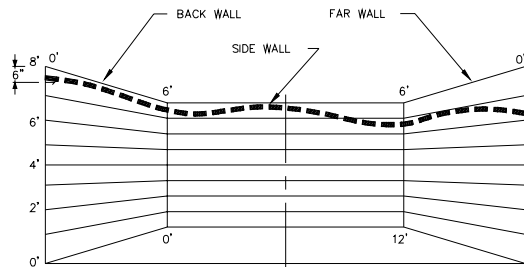
FLOW LEGEND

■■■■ TOP OF SPRINKLER FLOW

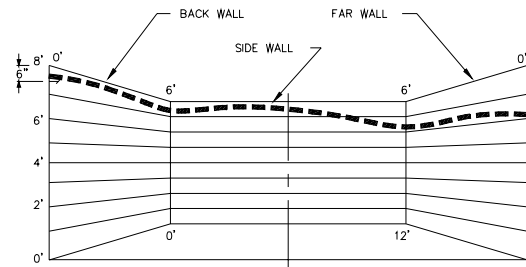
GLOBE WALL WETTING PATTERNS

GL SERIES REPLACEMENT RESIDENTIAL HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL SPRINKLERS

MODEL GL4230 - K = 4.2 & MODEL GL5630 - K = 5.6

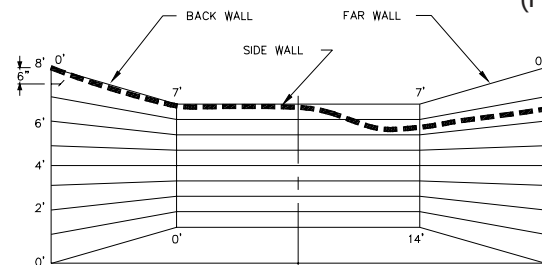


K=4.2-BOTHSTYLES
19GPM-20.5PSI

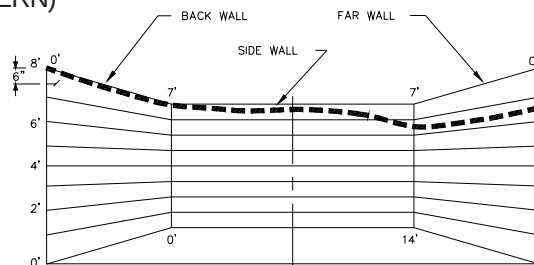


K=5.6-BOTHSTYLES
20GPM-12.8PSI

12' x 12' ROOM SIZE (HALFPATTERN)

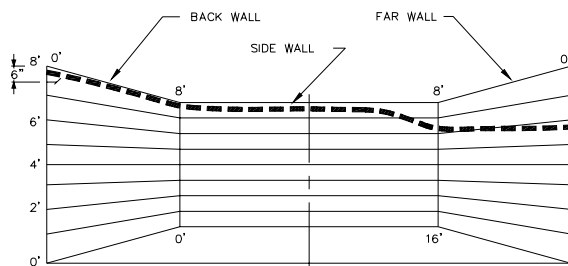


K=4.2-BOTHSTYLES
21GPM-25PSI

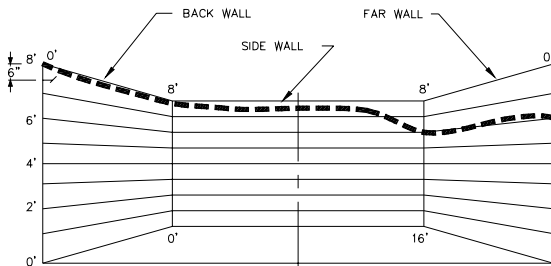


K=5.6-BOTHSTYLES
23GPM-16.9PSI

14' x 14' ROOM SIZE (HALFPATTERN)



K=4.2-BOTHSTYLES
24GPM-32.7PSI



K=5.6-BOTHSTYLES
24GPM-18.4PSI

16' x 16' ROOM SIZE (HALFPATTERN)

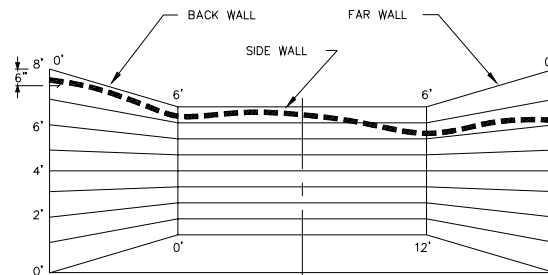
FLOWLEGEND

■■■■ TOP OF SPRINKLER FLOW

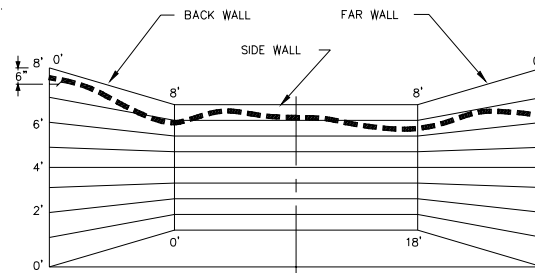
GLOBE WALL WETTING PATTERNS

MODEL GL5631 REPLACEMENT RESIDENTIAL HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL SPRINKLERS

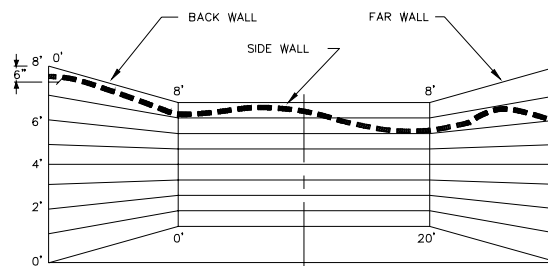
K = 5.6



BOTHSTYLES
18GPM-10.3PSI
12' x 12' ROOM SIZE
(HALFPATTERN)



BOTHSTYLES
30GPM-28.7PSI
16' x 18' ROOM SIZE
(HALFPATTERN)



BOTHSTYLES
35GPM-39.1PSI
16' x 20' ROOM SIZE
(HALFPATTERN)

FLOWLEGEND

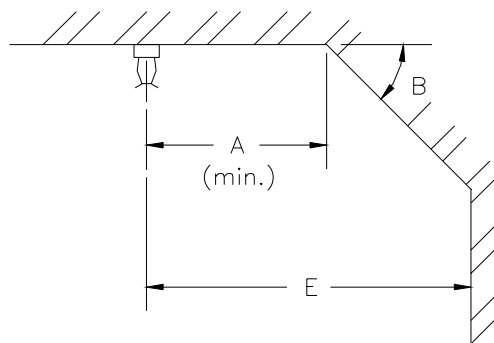
■ ■ ■ ■ TOP OF SPRINKLER FLOW

GLOBE INSTALLATION DIAGRAMS

THE FOLLOWING INSTALLATION GUIDELINES HAVE BEEN DEVELOPED USING IN-HOUSE DATA FOR THE CONVENIENCE OF CUSTOMERS CONFRONTED WITH INSTALLATIONS THAT ARE NOT REFERENCED IN THE NFPA 13D STANDARD.

GL SERIES RESIDENTIAL PENDENT SPRINKLERS ON A HORIZONTAL CEILING, DISTANCE TO PITCHED CEILING

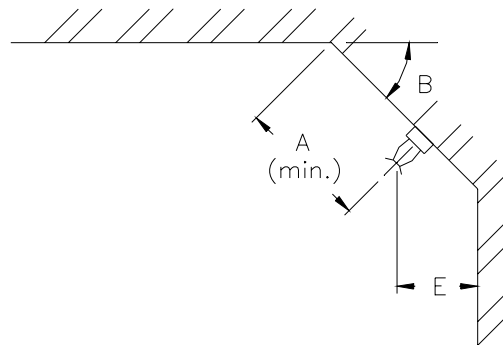
MIN. ALLOWABLE A	ANGLE B DEGREES
0'-4"	5
0'-6"	10
0'-9"	15
1'-1"	20
1'-6"	25
1'-10"	30
2'-3"	35
2'-8"	40
3'-0"	45



NOTE: E DIMENSION NOT TO EXCEED ONE HALF THE LISTED SPACING.

GL SERIES RESIDENTIAL PENDENT SPRINKLERS ON A PITCHED CEILING, DISTANCE TO HORIZONTAL CEILING

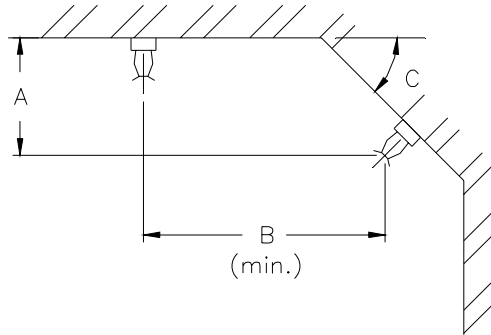
MIN. ALLOWABLE A	ANGLE B DEGREES
0'-8"	5
1'-0"	10
1'-4"	15
1'-8"	20
2'-2"	25
2'-5"	30
2'-8"	35
3'-3"	40
3'-6"	45



NOTE: E DIMENSION NOT TO EXCEED ONE HALF THE LISTED SPACING.

GLOBE INSTALLATION DIAGRAMS

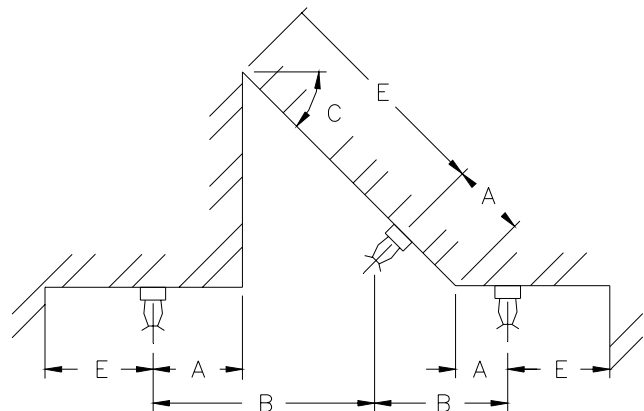
GL SERIES RESIDENTIAL PENDENT SPRINKLERS MAXIMUM VERTICAL DISTANCE ON INTERSECTING HORIZONTAL AND PITCHED CEILINGS



MIN. ALLOWABLE A	MIN. ALLOWABLE B	ANGLE C DEGREES
0'-6"	8'-0"	5
1'-0"	8'-0"	10
1'-6"	8'-0"	15
2'-0"	8'-8"	20
2'-6"	9'-3"	25
3'-0"	10'-0"	30
3'-6"	10'-6"	35
4'-0"	11'-0"	40
4'-6"	11'-0"	45

GL SERIES RESIDENTIAL PENDENT SPRINKLERS ON PITCHED CEILINGS OF MULTIPLE ANGLES

MIN. ALLOWABLE B	ANGLE C DEGREES
8'-0"	5
8'-0"	10
8'-0"	15
7'-6"	20
7'-0"	25
6'-6"	30
6'-0"	35
5'-6"	40
5'-0"	45

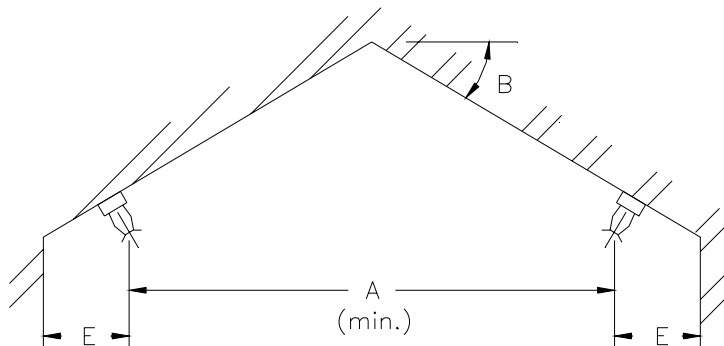


NOTES: A DIMENSION IS MINIMUM 6 INCHES.
E DIMENSION NOT TO EXCEED ONE HALF THE LISTED SPACING.

GLOBE INSTALLATION DIAGRAMS

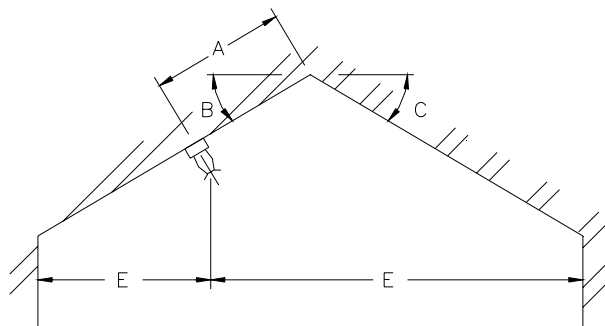
GL SERIES RESIDENTIAL PENDENT SPRINKLERS ON OPPOSING PITCHED CEILINGS

MIN. ALLOWABLE A	ANGLE B DEGREES
8'-0"	5
8'-6"	10
10'-0"	15
11'-0"	20
11'-0"	25
12'-0"	30
12'-6"	35
12'-6"	40
13'-0"	45



NOTE: E DIMENSION NOT TO EXCEED ONE HALF THE LISTED SPACING.

GL SERIES RESIDENTIAL PENDENT SINGLE SPRINKLER INSTALLATION ON OPPOSING PITCHED CEILINGS



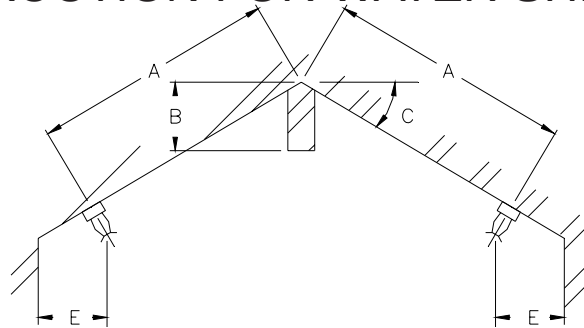
ANGLE*	SPACING				
	12'	14'	16'	18'	20'
10°	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
20°	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"
30°	1'-0"	1'-0"	1'-6"	2'-0"	3'-0"
40°	1'-0"	1'-6"	2'-6"	3'-0"	4'-0"
50°	2'-0"	2'-6"	4'-0"	4'-6"	5'-0"
60°	3'-0"	4'-0"	5'-0"	5'-6"	6'-0"
A DIMENSION					

NOTES: E DIMENSION NOT TO EXCEED ONE HALF THE LISTED SPACING.

* ANGLE B OR C, WHICHEVER IS GREATER.

GLOBE INSTALLATION DIAGRAMS

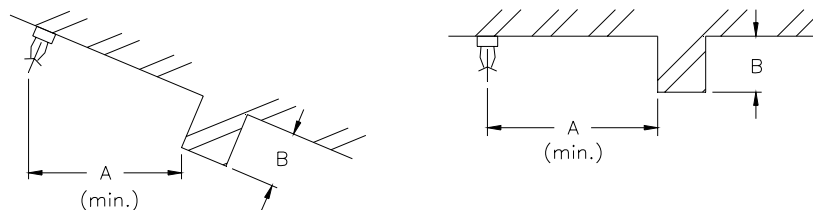
GL SERIES RESIDENTIAL PENDENT SPRINKLERS ON OPPOSING PITCHED CEILINGS WITH MINIMUM REQUIRED OBSTRUCTION FOR WATER SHIELDING



A DIMENSION	MINIMUM ALLOWABLE B FEET - INCHES		
	ANGLE C = 15 DEGREES	ANGLE C = 30 DEGREES	ANGLE C = 45 DEGREES
1'-0"	0'-6"	0'-6"	0'-10"
2'-0"	0'-8"	1'-0"	1'-8"
3'-0"	0'-10"	1'-6"	2'-2"
4'-0"	1'-0"	2'-0"	2'-10"
5'-0"	1'-2"	2'-2"	3'-6"
6'-0"	N/A	2'-6"	3'-10"
7'-0"	N/A	N/A	3'-10"
8'-0"	N/A	N/A	4'-4"

NOTE: E DIMENSION NOT TO EXCEED ONE HALF THE LISTED SPACING.

GL SERIES RESIDENTIAL PENDENT SPRINKLERS DISTANCE FROM OBSTRUCTIONS

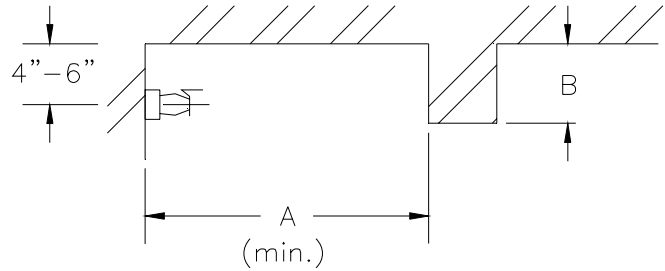


MIN. ALLOWABLE A	B DIMENSION
2'-4"	0'-4"
3'-4"	0'-6"
4'-0"	0'-8"
4'-4"	0'-10"
5'-0"	1'-0"
5'-8"	1'-2"
6'-4"	1'-4"

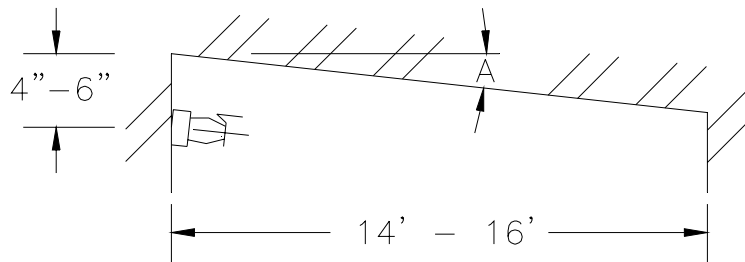
GLOBE INSTALLATION DIAGRAMS

GL SERIES RESIDENTIAL HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL SPRINKLERS DISTANCE FROM OBSTRUCTIONS

MIN. ALLOWABLE A	B DIMENSION
7'-4"	0'-4"
8'-4"	0'-6"
9'-5"	0'-8"
10'-6"	0'-10"
11'-3"	1'-0"
11'-8"	1'-2"
12'-4"	1'-4"



GL SERIES RESIDENTIAL HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL SPRINKLERS USED ON A PITCHED CEILING WITH DEFLECTOR PARALLEL TO CEILING



NOTE: ANGLE A NOT TO EXCEED 30°.

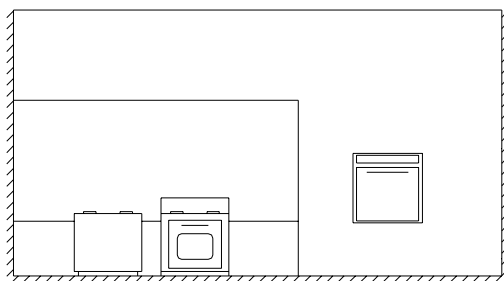
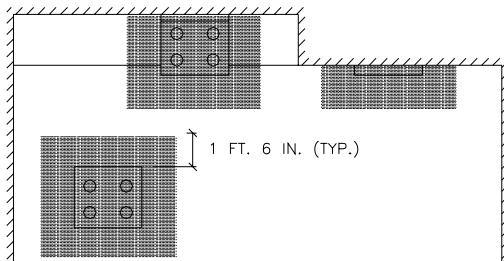
GLOBE INSTALLATION DATA NEAR HEAT SOURCES

GL SERIES RESIDENTIAL SPRINKLERS PROXIMITY OF SPRINKLERS TO HEAT SOURCES

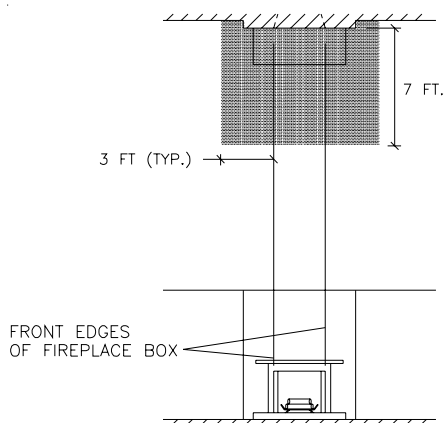
HEAT SOURCE	DIMENSION
Lateral distance from the sides of an open hearth fireplace	3'-0"
Lateral distance from the sides of a recessed hearth fireplace	3'-0"
Lateral distance from the front of a recessed hearth fireplace	7'-0"
Lateral distance from the surface of a coal or wood burning stove	3'-6"
Lateral distance from the surface of a kitchen range	1'-6"
Lateral distance from a wall oven	1'-6"
Lateral distance from the surface of hot air flues	1'-6"
Lateral distance from uninsulated heating ducts	1'-6"
Lateral distance from uninsulated water pipes	1'-0"
Lateral distance from the edges of a ceiling mounted hot air diffuser	2'-0"
Lateral distance from the sides of a wall mounted hot air diffuser	2'-0"
Lateral distance from the front of a wall mounted hot air diffuser	3'-0"
Lateral distance from the surface of a water heater or furnace	0'-6"
Lateral distance from a 250 watt, or less, light fixture	0'-6"

GLOBE INSTALLATION DATA NEAR HEAT SOURCES

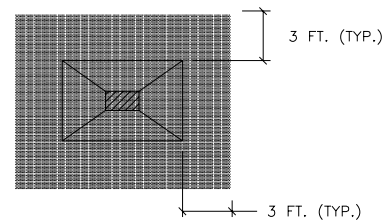
GL SERIES RESIDENTIAL SPRINKLERS PROXIMITY OF SPRINKLERS TO HEAT SOURCES



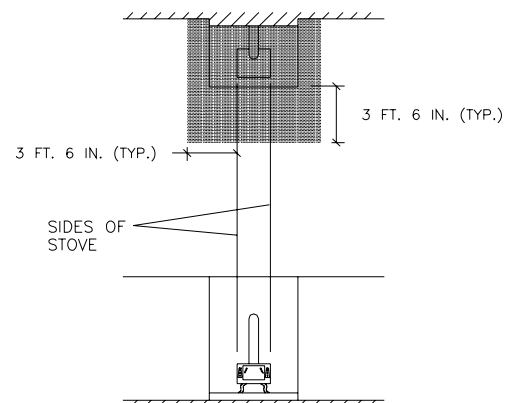
POSITIONING CRITERIA FOR SPRINKLERS TO BE
LOCATED NEAR A RANGE OR WALL OVEN



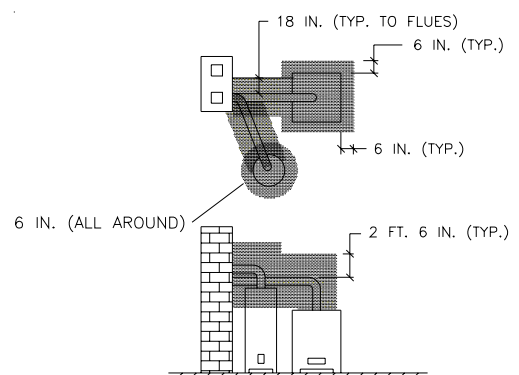
POSITIONING CRITERIA FOR SPRINKLERS
TO BE LOCATED NEAR A RECESSED
HEARTH FIREPLACE



POSITIONING CRITERIA FOR SPRINKLERS TO BE
LOCATED NEAR AN OPEN HEARTH FIREPLACE



POSITIONING CRITERIA FOR SPRINKLERS
TO BE LOCATED NEAR A COAL OR
WOOD BURNING STOVE



POSITIONING CRITERIA FOR SPRINKLERS
TO BE LOCATED NEAR A FURNACE OR
WATER HEATER

NOTE: SPRINKLERS MUST BE LOCATED OUTSIDE OF SHADED AREAS.