

FL3100H UV/IR Flame Detector

Performance Report



Introduction

The FL3100H UV/IR Flame Detector is designed to detect fires and provide alarm outputs directly from the detector while maintaining false alarm immunity.

This report presents flame response, horizontal and vertical field of view data for various fuel types, fire sizes and detector sensitivities presenting the FL3100H UVIR Flame Detector's performance. Flame response data in the presence of false alarm sources is also shown.

1) Flame Response

A) High Sensitivity

No	Fuel	Size	Distance ft (m)	Average Response Times
1	Heptane ¹	1 x 1 ft ²	70 (21)	3
2	Heptane ²	1 x 1 ft ²	50 (15)	2
3	Gasoline ³	1 x 1 ft ²	50 (15)	3
4	Methane ⁴	1 ft x ½ ft dia.	50 (15)	8
5	Propane ⁵	1 ft x ¼ ft dia.	50 (15)	3

B) Medium Sensitivity

No	Fuel	Size	Distance ft (m)	Average Response Times
1	Heptane ²	1 x 1 ft ²	50 (15)	3

C) Low Sensitivity

No	Fuel	Size	Distance ft (m)	Average Response Times
1	Heptane ²	1 x 1 ft ²	25 (7.5)	3

2) Horizontal Field of View

A) High Sensitivity

No	Fuel	Size	Distance ft (m)	Angle, °	Average Response Times
1	Heptane ¹	1 x 1 ft ²	50 (15)	+60/-60	3/3
2	Heptane ²	1 x 1 ft ²	50 (15)	+45/-45	2/3
3	Heptane ²	1 x 1 ft ²	50 (15)	+60/-60	4/2
4	Methane ⁶	1 ft x ½ ft dia.	10 (3.1)	+60/-60	5/6
5	Propane ⁵	1 ft x ¼ ft dia.	25 (7.5)	+60/-60	4/7
6	Propane ⁵	1 ft x ¼ ft dia.	50 (15)	+45/-45	3/4

B) Medium Sensitivity

No	Fuel	Size	Distance ft (m)	Angle, °	Average Response Times
1	Heptane ²	1 x 1 ft ²	25 (7.5)	+45/-45	3/3

C) Low Sensitivity

No	Fuel	Size	Distance ft (m)	Angle, °	Average Response Times
1	Heptane ²	1 x 1 ft ²	15 (4.5)	+15/-15	3/4

2) Horizontal Field of View

A) High Sensitivity

No	Fuel	Size	Distance ft (m)	Angle, °	Average Response Times
1	Heptane ¹	1 x 1 ft ²	25 (7.5)	+50/-50	2/2

C) Low Sensitivity

No	Fuel	Size	Distance ft (m)	Angle, °	Average Response Times
1	Heptane ²	1 x 1 ft ²	25 (7.5)	+30/-30	4/3

B) Medium Sensitivity

No	Fuel	Size	Distance ft (m)	Angle, °	Average Response Times
1	Heptane ²	1 x 1 ft ²	25 (7.5)	+50/-50	2/3

4) False Alarm Immunity²

No	False Alarm Source	Minimum Immunity Distance, ft (m)	
		Modulated Response	Unmodulated Response ft (m)
1	Fluorescent light (40 W)	10 (3)	10 (3)
2	Halogen light (500 W)	10 (3)	10 (3)
3	Incandescent light (100 W)	10 (3)	10 (3)
4	Arc welding, 190 A using 7018 rod	10 (3)	10 (3)

¹ Daniel Liu and Herb Rabe, Internal Report, March 4, 2009.

² FM Approvals, approval report, Internal Report, April 24, 2003.

³ Instruction Manual, Internal Report, January 2010.

⁴ Internal Report, "Competitive Performance Analysis," 2006.

⁵ So Nguyen, Internal Report, "Propane Flame Test, March 24, 2011.

⁶ Internal Report, "Flame Tests."

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products. Specifications subject to change without notice.



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