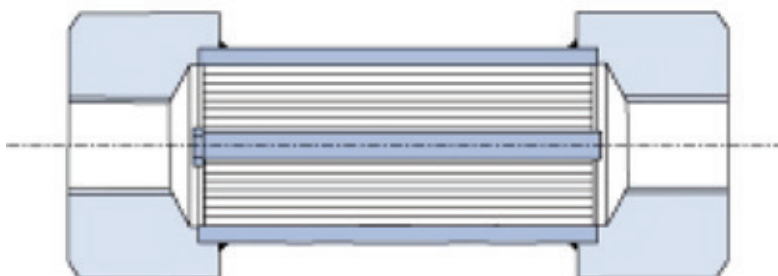


## ANDERSON GREENWOOD AMAL LIRD/LIRDE FLAME ARRESTERS

In-line detonation flame arresters designed to prevent the propagation of supersonic flames



### FEATURES

- Concentric or eccentric model variants available.
- Fabricated construction.
- Advanced crimped stainless steel element construction as standard. Other materials available.
- Can be positioned anywhere within the pipeline.
- Bi-directional.
- Designed for unstable detonation.
- Independently tested and certified.
- Manufactured to ISO 9001:2008.

### GENERAL APPLICATION

The LIRD/LIRDE are used in applications with supersonic flames and mounted in process or vent lines. They are designed to handle both stable and unstable detonations.

### TECHNICAL DATA

Materials:	Carbon steel, stainless steel
Sizes:	DN 6 to 150 (1/8" to 6")
Connections:	Threaded or flanged
Temperature range:	-20° to + 165°C [-4° to +329°F]
Gas groups:	IIA, IIB1, IIB2, IIB3, IIB*, IIC*
Certification:	ATEX Directive 94/9/EC; PED 97/23/EC

\* Up to and including DN 150 (6")

# ANDERSON GREENWOOD AMAL LIRD/LIRDE FLAME ARRESTERS

## STABLE AND UNSTABLE DETONATION

Detonations can be stable or unstable. A detonation is stable when it progresses through a confined system without significant variations of velocity and pressure characteristics. When a detonation is unstable, the velocity is not constant and the explosion pressure is significantly higher. This occurs in a limited zone during a combustion process from a deflagration into a stable detonation. The LIRD/LIRDE are designed to handle both stable and unstable detonation.

## MATERIALS AND CONNECTION OPTIONS

### Materials

Carbon steel and stainless steel.

### Connection pipe size

Threaded DN 6 to 40 (1/8" to 1 1/2")

Flanged DN 15 to 150 (1/2" to 6")

## NOTE

Accessories, special materials and connections are available on request.

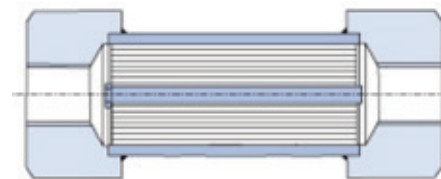
## Gas groups

- IIA
- IIB1
- IIB2
- IIB3
- IIB
- IIC<sup>[1]</sup>

## NOTES

1. Multiple element design on DN 100 to 150 (4" to 6") sizes.

LIRD SCREWED (DS VERSION)



## TEMPERATURE RANGE

Type	Connection	Gas group	Size range	Short burn	Max. temperature	Element
LIRD/LIRDE	Flanged	IIA	DN 12/150	Yes	-20 /+60°C	1 x 0.6/0.45 mm
LIRD/LIRDE	Flanged	IIB1/IIB3	DN 12/150	Yes	-20 /+60°C	1 x 0.45/0.38 mm
LIRD/LIRDE	Flanged	IIA	DN 12/150	No	-20 /+165°C	1 x 0.45 mm
LIRD/LIRDE	Flanged	IIB1/IIB3	DN 12/150	No	-20 /+165°C	1 x 0.38 mm
LIRD/LIRDE	Flanged	IIB	DN 12/400	Yes	-20 /+60°C	1 x 0.3 mm
LIRD/LIRDE	Flanged	IIC	DN 12/80	Yes	-20 /+60°C	1 x 0.15 mm
LIRD/LIRDE	Flanged	IIB	DN 12/150	No	-20 /+165°C	1 x 0.3 mm
LIRD/LIRDE	Flanged	IIC	DN 12/80	No	-20 /+165°C	1 x 0.15 mm
LIRD	Screwed	IIA	DN 6/40	Yes	-20 /+60°C	1 x 0.6 mm
LIRD	Screwed	IIB1/IIB3	DN 6/40	Yes	-20 /+60°C	1 x 0.45 mm
LIRD	Screwed	IIA	DN 6/40	No	-20 /+165°C	1 x 0.45 mm
LIRD	Screwed	IIB1/IIB3	DN 6/40	No	-20 /+165°C	1 x 0.38 mm
LIRD	Screwed	IIB	DN 6/40	No	-20 /+165°C	1 x 0.3 mm
LIRD	Screwed	IIC	DN 6/40	No	-20 /+165°C	1 x 0.15 mm
LIRD	Flanged	IIA	DN 80 x 100	No	-20 /+60°C	1 x 0.45 mm

## NOTES

All sizing and selection must be conducted by the factory.

Standard elements are double the pipe size.

## ANDERSON GREENWOOD AMAL LIRD/LIRDE FLAME ARRESTERS

### SELECTION GUIDE

Example:	LIRD	50	DR	100	76	45	S3	S3
<b>Model</b>								
<b>LIRD</b>								
<b>LIRDE</b>								
<b>Connection diameter, mm (in)</b>								
<b>Threaded</b>								
DN 6 to 40 (1/8" to 1 1/2") - LIRD with DS element only								
<b>Flanged</b>								
DN 15 to 150 (1/2" to 6")								
<b>Element code</b>								
<b>DS</b> LIRD only								
<b>DR</b>								
<b>Element diameter, mm (in)</b>								
DN 25 to 50 (1" to 2") - LIRD with DS element only								
DN 40 to 300 (1 1/2" to 12")								
<b>Element width, mm (in)</b>								
<b>76</b> 76 mm (3.0")								
<b>114</b> 114 mm (4.5")								
<b>152</b> 152 mm (6.0")								
<b>190</b> 190 mm (7.5")								
<b>Cell height, mm (in)</b>								
<b>60</b> 0.60 mm (0.024")								
<b>45</b> 0.45 mm (0.018")								
<b>38</b> 0.38 mm (0.015")								
<b>30</b> 0.30 mm (0.012")								
<b>15</b> 0.15 mm (0.006")								
<b>Element material</b>								
<b>S3</b> Stainless steel								
<b>C</b> Carbon steel								
<b>Body material</b>								
<b>S3</b> Stainless steel								
<b>C</b> Carbon steel								

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