

# LCA Series

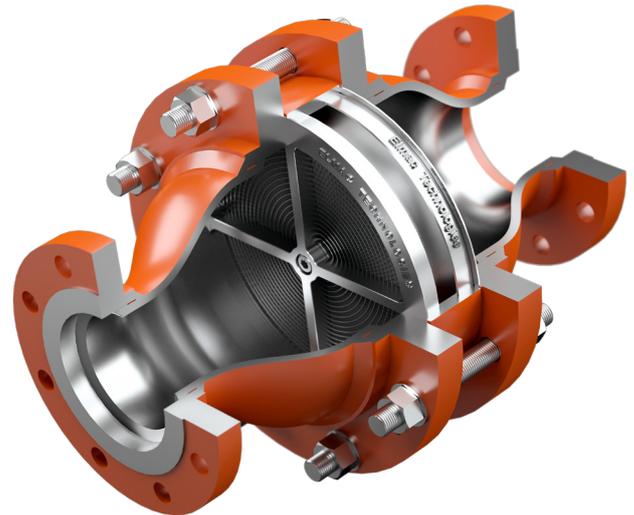
## In-line Deflagration Flame Arresters



Protecting People, Property and our Planet.

### With Replaceable Element for Explosion Groups IIA1 & IIA

The Elmac Technologies® LCA Series of In-line Deflagration Flame Arresters are designed to prevent the propagation of flames in piping systems. By locating the flame arrester in close proximity to the potential source of ignition, flame or explosion is confined to the immediate area. LCA flame arrester models include high pressure, high temperature and short-time burn.



### Principle of Operation

For a deflagration with no stabilised flame, the combustion products are cooled at the element surface by heat dissipation, preventing continuation of the combustion process through the flame arrester and into the protected line. In the event that a flame stabilises on the flame arrester element, a sudden increase in temperature will be detected by a monitoring system and secondary protection measures are activated to stop the flow of the flammable mixture.

### Explosion Groups

Elmac LCA Series Flame Arresters are ATEX certified for Explosion Groups IIA1 and IIA.

### Standards Compliance

Elmac Technologies® Flame Arresters have been type-tested to EN ISO 16852 and certified according to ATEX Directive 2014/34/EU.



### Elmac Expertise

Elmac Technologies® has been manufacturing protection equipment since 1948 and brings enhanced levels of flame and explosion protection to a diverse range of applications.

Elmac offers considerable technical leadership and, utilising a range of testing facilities along with Computational Fluid Dynamics (CFD) studies, employs research teams renowned for developing solutions for the most challenging of industrial applications.

### Features and Benefits

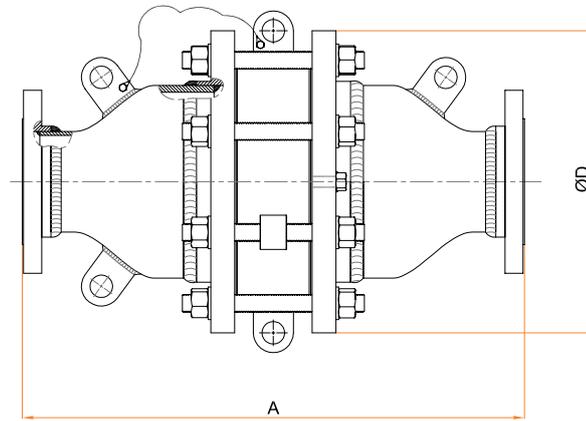
The LCA Series incorporates crimped-ribbon technology in the flame arrester element, the metal matrix of which has been optimised to ensure industry-leading flow vs pressure drop characteristics.

- Exceptional flow capacities with minimal pressure drop
- Short-time burning capability
- Concentric design, bi-directional
- Extended operating pressure
- Extended operating temperature
- Easy-clean, replaceable, crimped-ribbon elements
- Unique element design is less susceptible to fouling/clogging
- Sizes and materials to suit a wide range of applications
- End connections include flanged or threaded options

# LCA Series

## In-line Flame Arresters

### General Arrangement:



Concentric Design

### Dimensions (Standard Reducer)

NB (mm)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
A (mm)	-	-	-	-	317	323	401	413	457	591	577	903	1221	1239
ØD (mm)	-	-	-	-	229	229	254	279	343	483	483	597	698	813
Approx Wt (kg)	-	-	-	-	22	24	31	40	63	119	122	215	310	416

### Dimensions (Dish-End Reducers)\*

NB (mm)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
A (mm)	317	317	337	337	337	337	381	407	461	597	597	691	805	919
ØD (mm)	229	229	229	229	229	229	254	279	343	483	483	597	698	813
Approx Wt (kg)	21	22	22	23	23	25	32	42	64	123	128	204	300	415

\*Dish-End models are available with larger elements for enhanced flow capabilities. Dimensions presented above are for 1.2bara operating pressure models

### Variations

Features	Standard Fitting	Options
Flame Arrester Housing Materials	Carbon or Stainless Steel	Low Temperature Carbon Steel, Duplex Steel, Hastelloy
Element Material	Stainless Steel	Hastelloy
Connections	ANSI 150 Flange	PN16 Flange, Female BSP/NPT, Male BSP/NPT
Arrester Finish	Painted (Carbon Steel Arresters)	Offshore Paint, PTFE Coated, Others on Request

\*Depending on flame arrester size

### Operating Conditions

Model	Max Operating Pressure (bara)	Max Operating Temperature (°C)*
LCA Series	1.20	+60
	1.50	+60

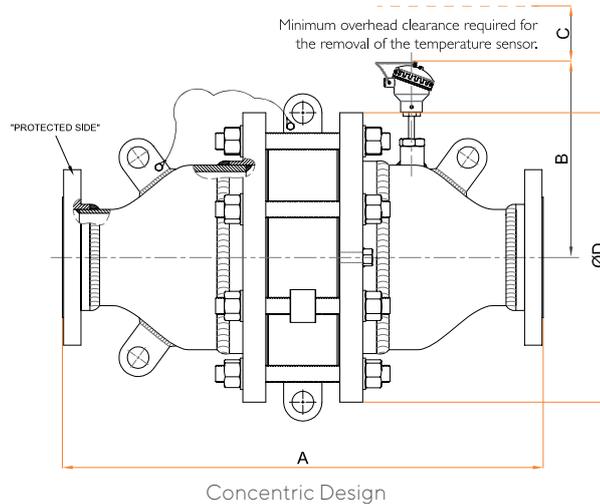
### LCA Flame Arrester Flow Curves

Pressure drop performance varies according to a particular arrester configuration. Further information is available on request from the Elmac Customer Support team.

# LCA Series

## Short-time Burn In-line Flame Arresters

### General arrangement:



### Dimensions (Standard Reducers)

NB (mm)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
A (mm)	-	-	-	-	317	323	401	457	457	591	577	903	1221	1239
B max (mm)	-	-	-	-	285	285	300	340	340	400	400	435	485	535
C min (mm)	-	-	-	-	75	75	75	75	75	135	135	135	195	195
ØD (mm)	-	-	-	-	229	229	279	343	343	483	483	597	698	813
Approx Wt (kg)	-	-	-	-	23	25	41	64	64	120	123	216	311	417

### Dimensions (Dish-End Reducers)\*

NB (mm)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
A (mm)	317	317	337	337	337	337	381	407	461	597	597	691	805	919
B max (mm)	285	285	285	285	285	285	300	225	240	280	280	435	485	535
C min (mm)	75	75	75	75	75	75	75	60	60	100	100	135	195	195
ØD (mm)	229	229	229	229	229	229	254	279	343	483	483	597	698	813
Approx Wt (kg)	21	22	22	23	23	25	32	42	64	123	128	204	300	415

### Variations

Features	Standard Fitting	Options*
Arrester Housing Materials	Carbon or Stainless Steel	Low Temperature Carbon Steel, Duplex Steel, Hastelloy
Element Material	Stainless Steel	Hastelloy
Connections	ANSI 150 Flange	PN16 Flange, Female BSP/NPT, Male BSP/NPT
Arrester Finish	Painted (Carbon Steel Arresters)	Offshore Paint, PTFE Coated, Others on Request
Temperature Sensor	Installed on 'un-protected side' of element+	Installed on 'un-protected' and 'protected' side of element#

\* Depending on flame arrester size.

+ Protects one side.

# Protects both sides.

### Operating Conditions

Model	Max Operating Pressure (bara)	Max Operating Temperature (°C)	Short-Time-Burn
LCA Short-time	1.20	+60	Yes
Burn Flame Arresters	1.50	+60	Yes

### LCA Short-time Burn Flame Arrester

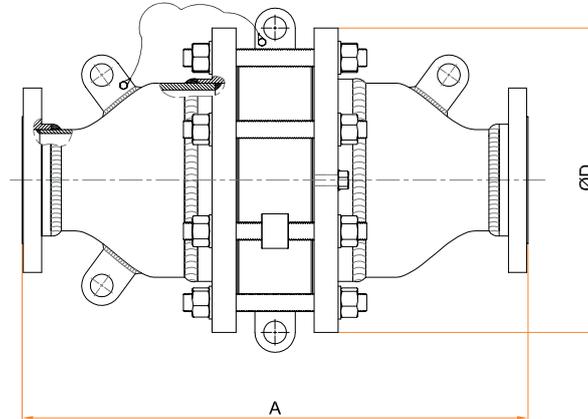
LCA Short-time Burn Flame Arresters are equipped with at least one temperature sensor allowing continuous monitoring of the element's surface temperature. As such, they provide short time burn protection for up to 10 minutes, however a secondary protection measure must be implemented within 5 minutes of detection of a short-time burn event.

Further information is available on request from the Elmac Customer Support team.

# LCA Series

## High Temperature In-line Flame Arresters

General arrangement:



Concentric Design

### Dimensions (Standard Reducers)

NB (mm)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
A (mm)	327	327	347	347	327	333	411	423	467	601	587	913	1231	1249
ØD (mm)	229	229	229	229	229	229	254	279	343	483	483	597	698	813
Approx Wt (kg)	21	22	22	23	22	24	32	42	66	122	125	221	318	427

### Dimensions (Dish-End Reducers)\*

NB (mm)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
A (mm)	327	327	347	347	347	347	391	417	471	607	607	701	815	929
ØD (mm)	229	229	229	229	229	229	254	279	343	483	483	597	698	813
Approx Wt (kg)	21	22	22	23	23	25	33	43	67	127	131	210	308	426

\*Dish-End models are available with larger elements for enhanced flow capabilities.

### Variations

Features	Standard Fitting	Options*
Flame Arrester Housing Materials	Carbon or Stainless Steel	Low Temperature Carbon Steel, Duplex Steel, Hastelloy
Element Material	Stainless Steel	Hastelloy
Connections	ANSI 150 Flange	PN16 Flange, Female BSP/NPT, Male BSP/NPT
Arrester Finish	Painted (Carbon Steel Arresters)	Offshore Paint, PTFE Coated, Others on Request

\*Depending on flame arrester size

### Operating Conditions

Model	Max Operating Pressure (bara)	Max Operating Temperature (°C)
LCA High Temperature Flame Arresters	1.45	+160

### LCA High Temperature Flame Arrester Flow Curves

Pressure drop performance varies according to a particular arrester configuration. Further information is available on request from the Elmac Customer Support team.

### Customer Support

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