



# Oil Nozzles

LE

## Description

Oil nozzles type LE are special versions of standard nozzles type OD with built-in cut-off valve. In combination with an oil pump with LE-function (e.g. BFP 21 LE) the LE nozzle prevents drop formation when preheating and from oil expansion in the nozzle line at burner stop. Alternatively the LE-function can be obtained by using a preheater with incorporated LE-valve (FPHB-LE) in combination with an OD-nozzle.

LE nozzles are available with 3 spray angles, 2 spray patterns and capacities from 0.40 to 2.0 USgal/h. The nozzles are equipped with sintered bronze filter.

## Features & Benefits

- Light oil
- Low Emission
- 100% test of capacity and performance

## Applications

- Oil preheaters

## Ordering

### Product code numbers

| Product group | Type | Spray angle [°] | Capacity [USgal/h] | Code number |
|---------------|------|-----------------|--------------------|-------------|
| Oil Nozzles   | LE   | 80              | 0.40               | 030B0445    |
| Oil Nozzles   | LE   | 80              | 0.40               | 030H8704    |
| Oil Nozzles   | LE   | 60              | 0.40               | 030F6704    |
| Oil Nozzles   | LE   | 60              | 0.40               | 030H6704    |
| Oil Nozzles   | LE   | 60              | 0.45               | 030H6706    |
| Oil Nozzles   | LE   | 60              | 0.45               | 030F6706    |
| Oil Nozzles   | LE   | 80              | 0.45               | 030F8706    |
| Oil Nozzles   | LE   | 80              | 0.45               | 030H8706    |
| Oil Nozzles   | LE   | 80              | 0.50               | 030B0444    |
| Oil Nozzles   | LE   | 60              | 0.50               | 030H6708    |
| Oil Nozzles   | LE   | 80              | 0.50               | 030H8708    |
| Oil Nozzles   | LE   | 60              | 0.50               | 030F6708    |
| Oil Nozzles   | LE   | 20              | 0.50               | 030F2408    |
| Oil Nozzles   | LE   | 80              | 0.50               | 030F8708    |
| Oil Nozzles   | LE   | 45              | 0.50               | 030F4708    |
| Oil Nozzles   | LE   | 45              | 0.55               | 030F4710    |
| Oil Nozzles   | LE   | 60              | 0.55               | 030F6710    |
| Oil Nozzles   | LE   | 80              | 0.55               | 030H8710    |
| Oil Nozzles   | LE   | 60              | 0.55               | 030H6710    |
| Oil Nozzles   | LE   | 80              | 0.60               | 030B0447    |
| Oil Nozzles   | LE   | 45              | 0.60               | 030F4712    |
| Oil Nozzles   | LE   | 60              | 0.60               | 030H6712    |
| Oil Nozzles   | LE   | 80              | 0.60               | 030F8712    |
| Oil Nozzles   | LE   | 20              | 0.60               | 030F2412    |
| Oil Nozzles   | LE   | 80              | 0.60               | 030H8712    |
| Oil Nozzles   | LE   | 45              | 0.65               | 030F4714    |
| Oil Nozzles   | LE   | 60              | 0.65               | 030F6714    |
| Oil Nozzles   | LE   | 60              | 0.65               | 030H6714    |

|             |    |    |      |          |
|-------------|----|----|------|----------|
| Oil Nozzles | LE | 80 | 0.65 | 030F8714 |
| Oil Nozzles | LE | 60 | 0.75 | 030F6716 |
| Oil Nozzles | LE | 45 | 0.75 | 030F4716 |
| Oil Nozzles | LE | 20 | 0.75 | 030F2416 |
| Oil Nozzles | LE | 80 | 0.75 | 030H8716 |
| Oil Nozzles | LE | 60 | 0.75 | 030H6716 |
| Oil Nozzles | LE | 80 | 0.85 | 030F8718 |
| Oil Nozzles | LE | 60 | 0.85 | 030H6718 |
| Oil Nozzles | LE | 45 | 0.85 | 030F4718 |
| Oil Nozzles | LE | 80 | 0.85 | 030H8718 |
| Oil Nozzles | LE | 60 | 1.00 | 030F6720 |
| Oil Nozzles | LE | 80 | 1.00 | 030H8720 |
| Oil Nozzles | LE | 45 | 1.00 | 030F4720 |
| Oil Nozzles | LE | 60 | 1.00 | 030H6720 |
| Oil Nozzles | LE | 80 | 1.10 | 030F8722 |
| Oil Nozzles | LE | 80 | 1.35 | 030H8726 |
| Oil Nozzles | LE | 60 | 1.50 | 030F6728 |
| Oil Nozzles | LE | 45 | 1.50 | 030F4728 |
| Oil Nozzles | LE | 60 | 1.75 | 030F6730 |
| Oil Nozzles | LE | 80 | 1.75 | 030H8730 |

## Identification

The nozzle is marked with the following information:



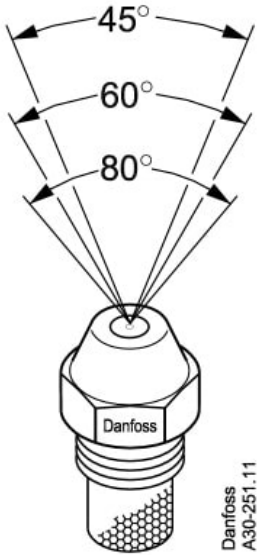
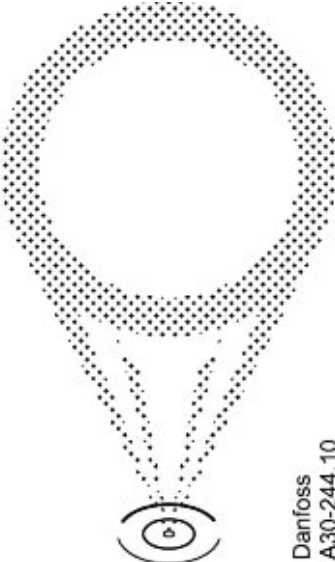
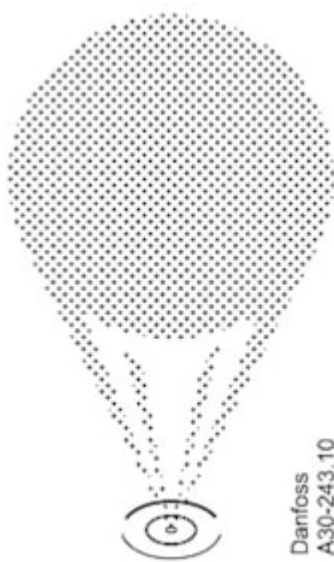
## Stamped on the flats:

|                                                                                     |                                                                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>2.37</b>                                                                         | Specified capacity (kg/h)                                                                                         |
| <b>Specification point</b>                                                          | 1160 kPa (11.6 bar), 3.4 cSt., 840 kg/m <sup>3</sup><br>[10 bar + 1.6 bar = 11.6 bar]<br>Capacity tolerance: ± 6% |
| <b>LE</b>                                                                           | Type (Low Emission)                                                                                               |
|  | Serial number for internal use                                                                                    |
| <b>0.60</b>                                                                         | Reference capacity (USgal/h)                                                                                      |
| <b>Reference specification point</b>                                                | 860 kPa (8.6 bar), 3.4 cSt., 820 kg/m <sup>3</sup><br>point [7.0 bar + 1.6 bar = 8.6 bar]                         |
| <b>60° S</b>                                                                        | Spray angle & pattern<br>(S = Solid)<br>(H = Hollow)                                                              |

## Functions

### Operation

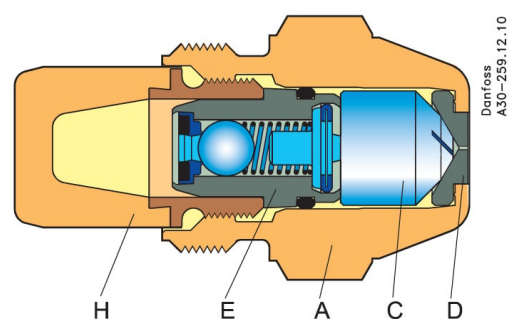
#### Spray angles and spray pattern

|                                                                                    | H                                                                                  | S                                                                                    |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |
|                                                                                    | Hollow                                                                             | Solid                                                                                |

## Product details

### Design

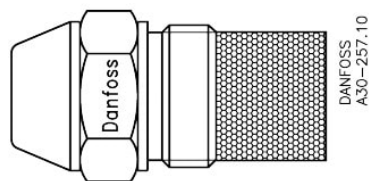
- A Nozzle housing
- C Nozzle cone
- D Orifice disc
- E LE-valve
- H Filter



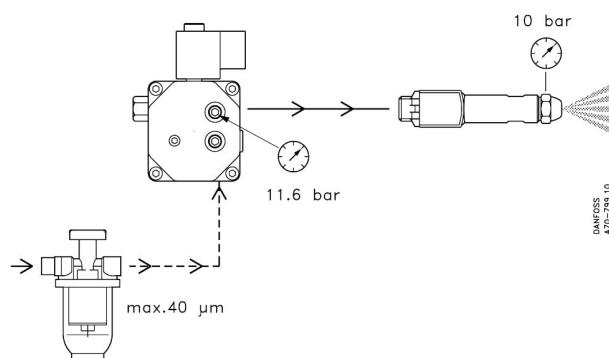
## Capacity

### Filters

Capacity 0.40-2.0 USgal/h:  
30 µm sintered bronze



 **Note!**  
The LE-function must be protected by an effective pre-filter (max. 40 µm).



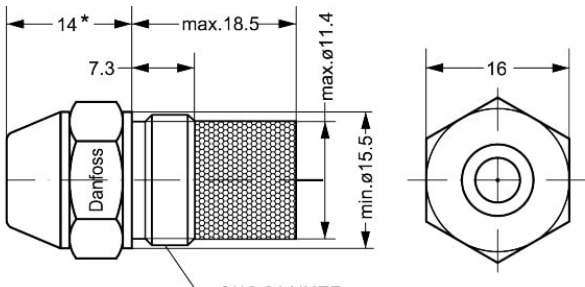
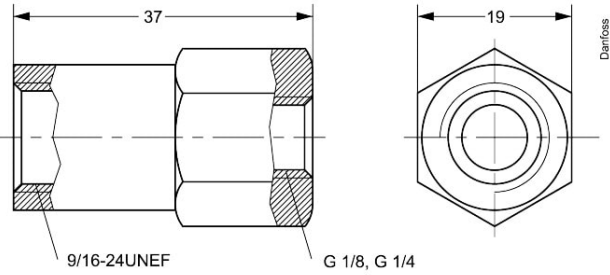
### Oil Nozzles Type LE

The capacity and spray pattern is precisely the same as on an OD nozzle. I.e. an 0.5 USgal/h, 60°S LE-nozzle is identical to an 0.5 USgal/h, 60°S OD-nozzle. The difference is that the pressure on the pump must be increased by 1.6 bar in order to get the same capacity from an LE as from an OD.

| Reference capacity<br>[USgal/h] | Spray angles /patterns |   |     |   |     |   | Specified capacity<br>[kg/h] |
|---------------------------------|------------------------|---|-----|---|-----|---|------------------------------|
|                                 | 45°                    |   | 60° |   | 80° |   |                              |
| 0.40*                           | S                      |   | H   | S | H   | S | 1.46                         |
| 0.45*                           | S                      |   | H   | S | H   | S | 1.66                         |
| 0.50                            | H                      | S | H   | S | H   | S | 1.87                         |
| 0.55                            | H                      | S | H   | S | H   | S | 2.11                         |
| 0.60                            | H                      | S | H   | S | H   | S | 2.37                         |
| 0.65                            | H                      | S | H   | S | H   | S | 2.67                         |
| 0.75                            | H                      | S | H   | S | H   | S | 2.94                         |
| 0.85                            | H                      | S | H   | S | H   | S | 3.31                         |
| 1.00                            | H                      | S | H   | S | H   | S | 3.72                         |
| 1.10                            | H                      | S | H   | S | H   | S | 4.24                         |
| 1.20                            | H                      | S | H   | S | H   | S | 4.45                         |
| 1.25                            | H                      | S | H   | S | H   | S | 4.71                         |
| 1.35                            | H                      | S | H   | S | H   | S | 5.17                         |
| 1.50                            | H                      | S | H   | S | H   | S | 5.84                         |
| 1.65                            | H                      | S | H   | S | H   | S | 6.08                         |
| 1.75                            | H                      | S | H   | S | H   | S | 6.55                         |
| 2.00                            | H                      | S | H   | S | H   | S | 7.42                         |

\* This nozzle capacity should not be used for oil with viscosities lower than 1.6 cSt.

## Dimensions & weights

|                                                                                                    |                                                                                                         |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  <p>* EN norm</p> |  <p>Nozzle holder</p> |
| *EN norm                                                                                           | Nozzle holder                                                                                           |

## Weight

| Nozzles type HR and SR |             |
|------------------------|-------------|
| Gross weight           | 0.036 kg    |
| Net weight             | 0.033 kg    |
| Volume                 | 0.024 Liter |

## Installation

### Tightening torques

|                               |                                 |
|-------------------------------|---------------------------------|
| Recommended tightening torque | 15 to 20 Nm<br>(1.5 to 2.0 kpm) |
| Max. tightening torque        | 25 Nm (2.5 kpm)                 |

## Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

| Approval type              | Title                                | Certification body | Approval topic |
|----------------------------|--------------------------------------|--------------------|----------------|
| Manufacturer's Declaration | <a href="#">Danfoss MD Q30BHF.01</a> | Danfoss            | EU RoHS        |
| Export Control Declaration | <a href="#">Oil Nozzles</a>          | Danfoss            |                |

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