

Lighting: LED Lighting Fixture, (Compatible with Antenna barrier), NFDR1 Series

Restricted Breathing and Dust protection by enclosure

Zone 2 – 21 & 22

Application

The NFDR1 luminaire design for explosion-protected with ignition protection status nR (restricted breathing), an nR solution that greatly simplifies the on-site installation work for the operator.

Specification

- Body material : Marine grade copper-free aluminium alloy with polyester powder coated, RAL 7032 (grey) (optional offshore painting-acrylic polyurethane coating)
- Lens : Heat and high impact resistant clear glass (4J impact)
- Bolts : Stainless steel, SUS 304 (optional SUS 316)
- Bracket : Hot-dip galvanized steel (optional SUS 304 or SUS 316)
- Sealing (O-ring) : Silicone

LED System

- Luminous efficient : 120 lm/W
- Colour temperature : Standard 5700 K (daylight) (optional 3000K, 3500K, 4000K, 4500K, 5000K, 6500K etc.)
- Color Rendering Index (Ra) : ≥ 80
- Chip : LUXEON 5050 - LumiLEDs (optional Cree, Bridgelux, Nichia)
- Beam angle : Average 100° without lens with lens
 30-80W.; 90°
 100-350W.; 30°, 60°, 90° (other beam angle, please specify)
- Lifespan : >50,000 Hrs. (70% lumen maintenance)

Ceiling Mounting

Steel Bracket Mounting



Pendant Mounting



Stanchion Mounting ; 30 degree angle

Stanchion Mounting ; 90 degree angle



Wall Mounting



Technical Data

| | | |
|---------------------------------|--|------------------------------------|
| Hazardous Area | Gas | Dust |
| Zones | 2 | 21 & 22 |
| Equipment Group/Category | Ex II 3G | Ex II 2D |
| Symbol of Protection | Ex nR IIC T6..T4 Gc | Ex tb IIIC T85°C..T130°C Db |
| Certificate No. | KDB 23 ATEX 0020X IECEX KDB 23.0005X | |
| Conformity to standards | EN IEC 60079-0:2018, EN 60079-15:2010, EN 60079-31:2014 IEC 60079-0:2017, IEC 60079-15:2010, IEC 60079-31:2013 | |
| Ambient Temperature | -40°C to +60°C (30W. to 300W.) -40°C to +55°C (310W. to 350W.) | |
| Index of Protection | IP66/ IK08 | |
| Entries | Ceiling, Bracket ; 2-M20x1.5, 2- M25x1.5 or 2- 1/2" NPT, 2- 3/4" NPT Wall ; 4-M20x1.5, 4- M25x1.5 or 4- 1/2" NPT, 4- 3/4" NPT Pendant ; 1- 3/4" NPT, Stanchion ; 1-1/4" NPT | |
| Mounting | Ceiling, Wall, Pendant, Steel bracket or Stanchion mounting | |
| Connection | L, N and PE ; for 1-4mm. ² cable (Through wiring system with an extra terminal block for cable connection at both ends.) | |
| Rated Voltage | 110-240V.ac 50/60Hz., THDi < 20%, P.F. ≥ 0.95 | |

Catalogue Number Logic

NFDR1 - ■ ■ ■ □ - □ □ □ ○

| Series | LED Power (see ordering requirement table below) | Mounting | Entries | Accessories |
|--------|---|----------------------------|-------------|----------------------------------|
| C | | Ceiling | M1 M20x1.5 | G Guard |
| C1 | | Steel Bracket | M2 M25x1.5 | AN Antenna (ANTE series) |
| P | | Pendant | N1 1/2" NPT | SP Surge protection 10kA, 8/20µF |
| W | | Wall | N2 3/4" NPT | |
| S30 | | Stanchion, 30 degree Angle | | |
| S90 | | Stanchion, 90 degree Angle | | |

Ordering Requirements; 30W. to 220W.

| Cat. No. | LED Power | Voltage | Temp. Class (for zone 2) | | Max. Surface Temp.* (for zone 21 & 22) | |
|---------------------|-----------|-------------|--------------------------|----------|--|----------|
| | | | Ta 40 °C | Ta 60 °C | Ta 40 °C | Ta 60 °C |
| NFDR1-30 □ - □ □ ○ | 30W. | 110-240V.ac | T6 | T5 | T85°C | T100°C |
| NFDR1-40 □ - □ □ ○ | 40W. | 50/60Hz. | | | | |
| NFDR1-50 □ - □ □ ○ | 50W. | | | | | |
| NFDR1-60 □ - □ □ ○ | 60W. | | | | | |
| NFDR1-70 □ - □ □ ○ | 70W. | | | | | |
| NFDR1-80 □ - □ □ ○ | 80W. | | | | | |
| NFDR1-90 □ - □ □ ○ | 90W. | | | | | |
| NFDR1-100 □ - □ □ ○ | 100W. | | | | | |
| NFDR1-110 □ - □ □ ○ | 110W. | | | | | |
| NFDR1-120 □ - □ □ ○ | 120W. | | | | | |
| NFDR1-130 □ - □ □ ○ | 130W. | | | | | |
| NFDR1-140 □ - □ □ ○ | 140W. | | | | | |
| NFDR1-150 □ - □ □ ○ | 150W. | | | | | |
| NFDR1-160 □ - □ □ ○ | 160W. | | | | | |
| NFDR1-170 □ - □ □ ○ | 170W. | | | | | |
| NFDR1-180 □ - □ □ ○ | 180W. | | | | | |
| NFDR1-190 □ - □ □ ○ | 190W. | | | | | |
| NFDR1-200 □ - □ □ ○ | 200W. | | | | | |
| NFDR1-210 □ - □ □ ○ | 210W. | | | | | |
| NFDR1-220 □ - □ □ ○ | 220W. | | | | | |

Remark * : The maximum surface temperatures are specified for dust free condition. The dust layer which may cover around the lighting fixture will cause to higher surface temperature.

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Ordering Requirements; 230W. to 350W. (Pendant or steel bracket mounting)



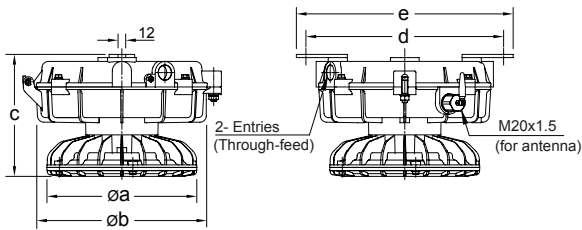
| Cat. No. | LED Power | Voltage | Temp. Class (for zone 2) | | Max. Surface Temp.* (for zone 21 & 22) | |
|--------------------|-----------|-------------|--------------------------|----------|--|----------|
| | | | Ta 40 °C | Ta 60 °C | Ta 40 °C | Ta 60 °C |
| NFDR1-230 □ - □□ ○ | 230W. | 110-240V.ac | T5 | T4 | T95°C | T130°C |
| NFDR1-240 □ - □□ ○ | 240W. | 50/60Hz. | | | | |
| NFDR1-250 □ - □□ ○ | 250W. | | | | | |
| NFDR1-260 □ - □□ ○ | 260W. | | | | | |
| NFDR1-270 □ - □□ ○ | 270W. | | | | | |
| NFDR1-280 □ - □□ ○ | 280W. | | | | | |
| NFDR1-280 □ - □□ ○ | 280W. | | | | | |
| NFDR1-300 □ - □□ ○ | 300W. | | | | | |

| Cat. No. | LED Power | Voltage | Temp. Class (for zone 2) | | Max. Surface Temp.* (for zone 21 & 22) | |
|--------------------|-----------|-------------|--------------------------|----------|--|----------|
| | | | Ta 40 °C | Ta 55 °C | Ta 40 °C | Ta 55 °C |
| NFDR1-310 □ - □□ ○ | 310W. | 110-240V.ac | T5 | T4 | T95°C | T130°C |
| NFDR1-320 □ - □□ ○ | 320W. | 50/60Hz. | | | | |
| NFDR1-330 □ - □□ ○ | 330W. | | | | | |
| NFDR1-340 □ - □□ ○ | 340W. | | | | | |
| NFDR1-340 □ - □□ ○ | 340W. | | | | | |
| NFDR1-350 □ - □□ ○ | 350W. | | | | | |

Remark * : The maximum surface temperatures are specified for dust free condition. The dust layer which may cover around the lighting fixture will cause to higher surface temperature.

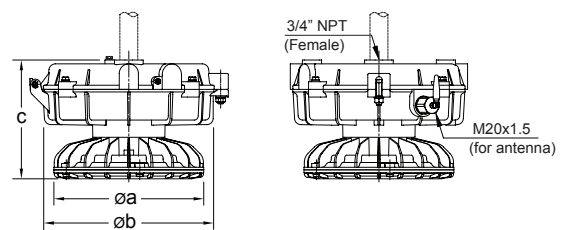
Dimension ; 30W. to 220W.

Ceiling Mounting



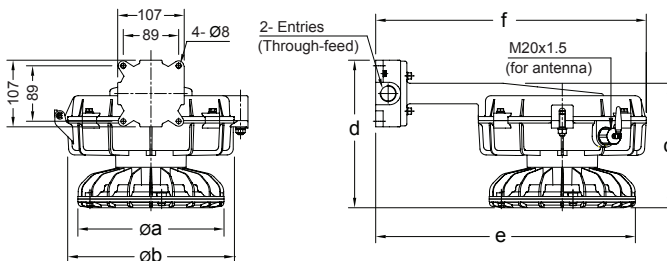
| Cat. No. | Dimension in mm. | | | | | Approx. Weight (kgs.) |
|------------------------------|------------------|-----|-----|-----|-----|-----------------------|
| | Øa | Øb | c | d | e | |
| NFDR1-30C-□□ to 90C-□□ | 235 | 190 | 221 | 222 | 244 | 6.5 |
| NFDR1-100C-□□ | 235 | 270 | 191 | 310 | 340 | 7.4 |
| NFDR1-110C-□□ to 220C-□□ | 340 | 270 | 201 | 310 | 340 | 10.9 |
| NFDR1-30C-□□AN to 100C-□□AN | 235 | 270 | 191 | 310 | 340 | 7.6 |
| NFDR1-110C-□□AN to 220C-□□AN | 340 | 270 | 201 | 310 | 340 | 10.9 |

Pendant Mounting



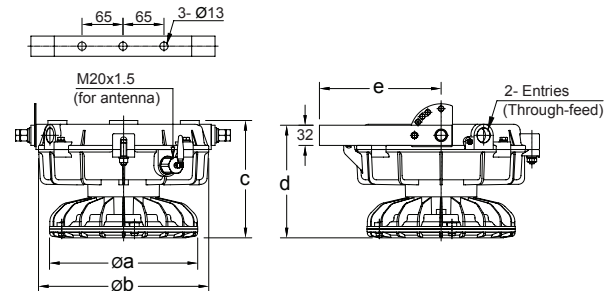
| Cat. No. | Dimension in mm. | | | Approx. Weight (kgs.) |
|------------------------------|------------------|-----|-----|-----------------------|
| | Øa | Øb | c | |
| NFDR-30P-N2 to 90P-N2 | 235 | 190 | 217 | 6.5 |
| NFDR-100P-N2 | 235 | 270 | 186 | 7.4 |
| NFDR1-110P-N2 to 220P-N2 | 340 | 270 | 196 | 10.9 |
| NFDR-30P-N2AN to 100P-N2AN | 235 | 270 | 186 | 7.6 |
| NFDR1-110P-N2AN to 220P-N2AN | 340 | 270 | 196 | 10.9 |

Wall Mounting



| Cat. No. | Dimension in mm. | | | | | | Approx. Weight (kgs.) |
|------------------------------|------------------|-----|-----|-----|-----|-----|-----------------------|
| | Øa | Øb | c | d | e | f | |
| NFDR1-30W-□□ to 90W-□□ | 235 | 190 | 221 | 258 | 378 | 355 | 7.1 |
| NFDR1-100W-□□ | 235 | 270 | 200 | 237 | 418 | 435 | 87.0 |
| NFDR1-110W-□□ to 220W-□□ | 340 | 270 | 210 | 247 | 470 | 435 | 11.5 |
| NFDR1-30W-□□AN to 100W-□□AN | 235 | 270 | 200 | 237 | 418 | 435 | 8.2 |
| NFDR1-110W-□□AN to 220W-□□AN | 340 | 190 | 210 | 247 | 470 | 435 | 11.5 |

Steel Bracket Mounting



| Cat. No. | Dimension in mm. | | | | | Approx. Weight (kgs.) |
|--------------------------------|------------------|-----|-----|-----|-----|-----------------------|
| | Øa | Øb | c | d | e | |
| NFDR1-30C1-□□ to 90C1-□□ | 235 | 190 | 217 | 211 | 162 | 7.5 |
| NFDR1-100C1-□□ | 235 | 270 | 186 | 179 | 193 | 8.7 |
| NFDR1-110C1-□□ to 220C1-□□ | 340 | 270 | 196 | 193 | 189 | 12.2 |
| NFDR1-30C1-□□AN to 100C1-□□AN | 235 | 270 | 186 | 179 | 193 | 9.0 |
| NFDR1-110C1-□□AN to 220C1-□□AN | 340 | 190 | 223 | 193 | 189 | 12.5 |

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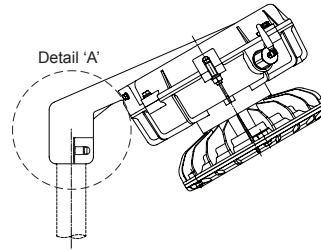
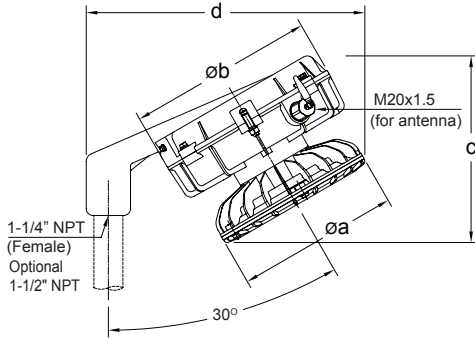
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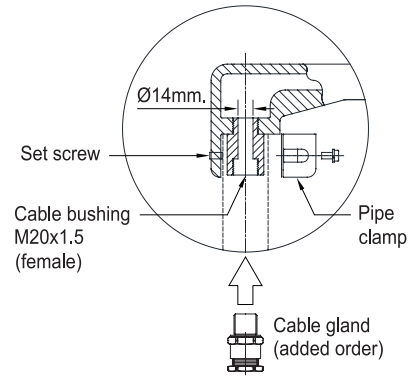
Dimension ; 30W. to 220W.

Stanchion Mounting ; 30 degree angle
Conduit type (standard)

Cable type (Pipe clamp)



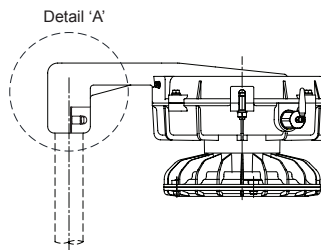
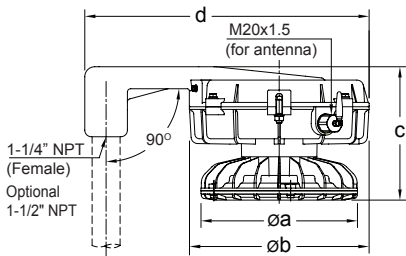
Detail 'A'



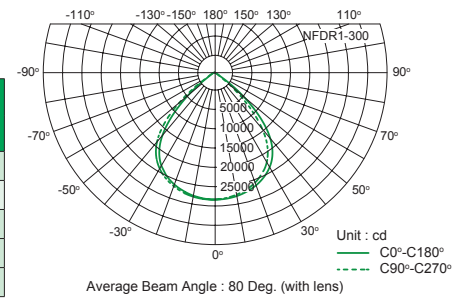
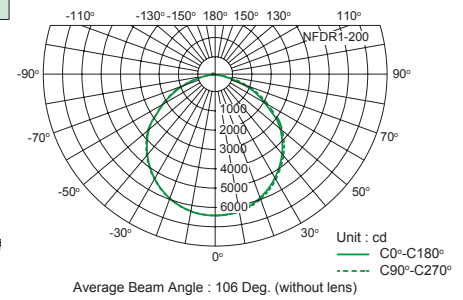
| Cat. No. | | Dimension in mm. | | | | Approx. Weight (kgs.) |
|------------------------------|--------------------------------|------------------|-----|-----|-----|-----------------------|
| Conduit type | Cable type | Øa | Øb | c | d | |
| NFDR1-30S30 to 90S30 | NFDR1-30S301 to 90S301 | 235 | 190 | 268 | 374 | 7.1 |
| NFDR1-100S30 | NFDR1-100S301 | 235 | 270 | 270 | 397 | 8.0 |
| NFDR1-110S30 to 220S30 | NFDR1-110S301 to 220S301 | 340 | 270 | 304 | 448 | 11.5 |
| NFDR1-30S30-AN to 100S30-AN | NFDR1-30S301-AN to 100S301-AN | 235 | 270 | 270 | 397 | 8.2 |
| NFDR1-110S30-AN to 220S30-AN | NFDR1-110S301-AN to 220S301-AN | 340 | 270 | 304 | 448 | 11.5 |

Stanchion Mounting ; 90 degree angle
Conduit type (standard)

Cable type (Pipe clamp)



Luminous Intensity Distribution Curve



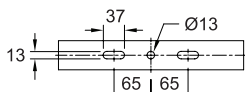
Complete photometrics, please contact us.

| Cat. No. | | Dimension in mm. | | | | Approx. Weight (kgs.) |
|------------------------------|--------------------------------|------------------|-----|-----|-----|-----------------------|
| Conduit type | Cable type | Øa | Øb | c | d | |
| NFDR1-30S90 to 90S90 | NFDR1-30S901 to 90S901 | 235 | 190 | 221 | 345 | 7.1 |
| NFDR1-100S90 | NFDR1-100S901 | 235 | 270 | 200 | 427 | 8.0 |
| NFDR1-110S90 to 220S90 | NFDR1-110S901 to 220S901 | 340 | 270 | 210 | 427 | 11.5 |
| NFDR1-30S90-AN to 100S90-AN | NFDR1-30S901-AN to 100S901-AN | 235 | 270 | 200 | 427 | 8.2 |
| NFDR1-110S90-AN to 220S90-AN | NFDR1-110S901-AN to 220S901-AN | 340 | 270 | 210 | 427 | 11.5 |

Dimension ; 230W. to 350W.

Steel Bracket mounting

Pendant mounting



Approx. weight: 17.0 kgs.
17.3 kgs. (with antenna)

Approx. weight: 14.8 kgs.
15.1 kgs. (with antenna)

