# FIRE RESISTANT

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Introduction</td>
<td>4</td>
</tr>
<tr>
<td>Fire Resistant &amp; Fire Retardant Test</td>
<td>7</td>
</tr>
<tr>
<td>Ramfirecro-F3, FIRE PLANET, BS 6387 CWZ PH120</td>
<td>10</td>
</tr>
<tr>
<td>Ramfirecro-F3, STANDARD FIRE SUN, BS 7629 PH120</td>
<td>14</td>
</tr>
<tr>
<td>Ramfirecro-F3, FIRE SAFE, IEC 60331-21</td>
<td>18</td>
</tr>
<tr>
<td>Ramfirecro-F3, FIRE GROUND, BS 7846</td>
<td>22</td>
</tr>
<tr>
<td>Ramfirecro-F3, FIRE MOON ENHANCED, EN 50200 PH120</td>
<td>24</td>
</tr>
<tr>
<td>Lanfirecro-F3, DATA LAN Cable, FIRE RESISTANT</td>
<td>26</td>
</tr>
<tr>
<td>Ramfirecro-F3, FIRE COMET, EN 50200 PH30</td>
<td>28</td>
</tr>
<tr>
<td>Ramfirecro-F3, FIRE COMET, FG4OHM1, CE 20-105, CEI 20-36/4-0 (PH30) - IMQ</td>
<td>30</td>
</tr>
<tr>
<td>Ramfirecro-F3, FIRE COMET, FG4OHM1, CE 20-105, CEI 20-36/4-0 (PH120)</td>
<td>32</td>
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<tr>
<td>Ramfirecro-F3, FIRE COMET, FTE4OHM1, CE 20-105, CEI 20-36/4-0 (PH30)</td>
<td>34</td>
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<td>Ramfirecro-F3, FIRE COMET, FTE4OHM1, CE 20-105, CEI 20-36/4-0 (PH120)</td>
<td>36</td>
</tr>
<tr>
<td>Ramfirecro-F3, TELRAMFEU - NBN 713-020</td>
<td>38</td>
</tr>
<tr>
<td>Ramfirecro-F3, PUISSRAMFEU - NBN 713-020</td>
<td>40</td>
</tr>
<tr>
<td>Ramfirecro-F3, FIRE STAR, BS 8434-2</td>
<td>42</td>
</tr>
<tr>
<td>Ramfirecro-F3, Fire Alarm Cable FPLR, UL 1424</td>
<td>44</td>
</tr>
<tr>
<td>Ramfirecro-F3, Fiber Optic Fire Resistant</td>
<td>48</td>
</tr>
<tr>
<td>Ramcro cable approvation for Fire Resistant Cable</td>
<td>50</td>
</tr>
</tbody>
</table>
Fire Resistant Cable

Used for fire resistant and circuit integrity, essentially to prevent life from smoke and noxious fumes, and where sensitive equipment maybe damage by acid forming gases.

All RAMCRO fire resistant cable are with sub-brand RAMFIRECRO-F3, are manufactured in according to the major international standard; BS 6387 C-W-Z - BS 7629 - IEC 60331-21 - EN 50200 - BS 8434-2 etc.

The material and the structure used for this type of cables depends on the performance required: fire time exposition, fire temperature and extra burning events.

Fire performance classes: Flame retardant (FRLS), Low smoke fumes (LS), Fire resistant (FRHF), Low smoke, Halogen free and Fire retardant (HF).

The typically applications for this type of cable are the transmission of analogue and digital signal and control systems.

Allowed for use in zone 1 and 2, group II, classified areas (IEC 60079-14).
FIRE RESISTANT TEST

All the fire resistant test are carried out in RAMCRO LAB

FIRE RESISTANCE (Cat. C)

The cable is exposed to fire at the 950°C for 180 minutes.

FIRE AND WATER RESISTANCE (Cat. W)

The cable is exposed for 15 minutes to flame at 650°C and for additional 15 minutes to fire and water spray.

FIRE RESISTANCE WITH MECHANICAL SHOCKS (Cat. Z)

The cable is mounted on a vertical panel and shocked with a steel bar for 15 minutes while submitted to the action of a flame.
FIRE RESISTANT TEST

All the fire resistant test are carried out in RAMCRO LAB

FIRE RESISTANCE (EN 50200 PH 15-30-60-90-120)

This test is carried out to verify the circuit integrity of cables exposed to fire at 830°C and mechanical shocks.

CLASSIFICATION

<table>
<thead>
<tr>
<th>Classification</th>
<th>Description</th>
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<tbody>
<tr>
<td>EN 50200 PH 15</td>
<td>Flame exposure for 15 min</td>
</tr>
<tr>
<td>EN 50200 PH 30</td>
<td>Flame exposure for 30 min</td>
</tr>
<tr>
<td>EN 50200 PH 60</td>
<td>Flame exposure for 60 min</td>
</tr>
<tr>
<td>EN 50200 PH 90</td>
<td>Flame exposure for 90 min</td>
</tr>
<tr>
<td>EN 50200 PH 120</td>
<td>Flame exposure for 120 min</td>
</tr>
</tbody>
</table>

FIRE RESISTANCE BS EN 50200 annex E

This test is carried out to verify circuit integrity during a fire. The cable is exposed to a flame at 830°C and mechanical shocks for 15 minutes and additional 15 minutes to flame, mechanical shocks and water spray.
FIRE RESISTANT TEST

All the fire resistant test are carried out in RAMCRO LAB

FIRE RESISTANCE (BS 8434-2)

This test is carried out to verify circuit integrity during a fire. The cable is exposed to a flame at 930°C and mechanical shocks for 60 minutes and additional 60 minutes to flame, mechanical shocks and water spray.

FIRE RESISTANCE (IEC 60331-21, CEI 20-36)

This test is carried out to verify circuit integrity even during a fire. A sample of cable is held on a flame at about 750°C for a period of minimum 90 min, under rated voltage.
FIRE RETARDANT TEST

*All the fire resistant test are carried out in RAMCRO LAB*

---

FLAME PROPAGATION TEST ON A SINGLE CABLE (IEC 60332-1)

A 60 cm long sample of cable is vertically fixed with two clamps inside a small cabin, open on the front. The cable is subjected to the action of a flame produced by a calibrated Bunsen burner. The application time of the flame is according to the cable diameter (60-480 seconds). At the end of the test the burnt portion of cable must not be 50 mm close to the higher clamp.

---

FIRE PROPAGATION TEST ON BUNCHEC CABLES (IEC 60332-3)

Samples of cables 3,5 m long in quantities required by standard are installed on a ladder inside a metallic cabinet. They are subjected to the action of a flame at 750°C for a specific time (20 or 40 minutes). Cables must not burn for more than 2,5 m.
FIRE RESISTANT CABLE
**CONSTRUCTION**

**Formation:**
Plain annealed copper wire, solid

**Insulation:**
Special mix silicon rubber

**Wrapping:**
At least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Red or White

**ELECTRICAL DATA**

**Insulation Resistance @ 20°C:**
> 200 MOhm*Km

**Test Voltage Core-Core:**
2000 V

**Test Voltage Core-Screen:**
2000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
300/500 V

**STANDARD REFERENCES**

- BS 6387:2013 Cat. C-W-Z
- IEC 60754-1:2014
- BS EN 61034-2:2005
- EN 50200:2015 (Class PH30/PH120)

**TEMPERATURE RANGE**

**During Operation:**
-30° C up to +180° C

**During Installation:**
-5° C up to +50° C

**CABLE PRINTING**

RAMFIRECRO-F3 - FIRE RESISTANT – LSZH – LPCB 568a/02 – BS EN 50267-2-1 – BS 6387 C-W-Z – EN 50200 PH 120 – 300/500V – CONDxAREA + E BATCH N. + MADE IN ITALY

**CHARACTERISTICS**

- Fire Resistant
- Min. Bending Radius
  8 x cable diameter
- Low Smoke Halogen Free

**IDENTIFICATION OF CORES**

- 2 cores: [ ]
- 3 cores: [ ]
- 4 cores: [ ]
- up/from 5 cores: Black Numbered

**CPR CLASSIFICATION**

EN 50575:2016 - C_{CA} s1A, d0, a1
<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
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</thead>
<tbody>
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<td>SAR0211HFESL-F3(IE)</td>
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</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR___HCESL-F3(IE)
CONSTRUCTION

Formation:
Plain annealed copper wire, 7 strand

Insulation:
Special mix silicon rubber

Wrapping:
at least 1 layer of plastic tape 0,023 mm

Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire

Outer Sheath:
Thermoplastic Low Smoke, Halogen Free

Colour Outer Sheath:
Red or White

STANDARD REFERENCES

- BS 6387:2013 Cat. C-W-Z
- IEC 60754-1:2014
- BS EN 61034-2:2005
- EN 50200:2015 (Class PH30/PH120)

IDENTIFICATION OF CORES

<table>
<thead>
<tr>
<th>2 cores:</th>
<th>3 cores:</th>
<th>4 cores:</th>
<th>up/from 5 cores:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Black Numbered</td>
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</table>

CABLE PRINTING

RAMFIRECRO-F3 - FIRE PLANET – LSZH – LPCB 568a/02 – EN 60754-1 – BS 6387 C-W-Z – EN 50200 PH30/PH120 – 300/500V – CONDxAREA + E BATCH N. + MADE IN ITALY

ELECTRICAL DATA

| Insulation Resistance @ 20°C: | > 200 MOhm*Km |
| Test Voltage Core-Core:       | 2000 V        |
| Test Voltage Core-Screen:     | 2000 V        |
| Mutual Capacitance:           | < 150 nF/km   |
| Inductance:                   | < 1 mH/km     |
| Operating Voltage:            | 300/500 V     |

CHARACTERISTICS

Fire Resistant

Min. Bending Radius
8 x cable diameter

Low Smoke Halogen Free

TEMPERATURE RANGE

During Operation:
-30°C up to +180°C

During Installation:
-5°C up to +50°C
## RAMCRO CODE FORMATION

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
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</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS---HCESL-F3(IE)
CONSTRUCTION

Formation:
Plain annealed copper wire, solid

Insulation:
Special mix silicon rubber

Wrapping:
at least 1 layer of plastic tape 0.023 mm

Collective Screen:
0.026 mm Aluminium / PETP tape over tinned copper
drain wire

Outer Sheath:
Thermoplastic Low Smoke, Halogen Free

Colour Outer Sheath:
Red or White

IDENTIFICATION OF CORES

2 cores: 
3 cores: 
4 cores: 
up/from 5 cores: Black Numbered

STANDARD REFERENCES

- BS 7629-1:2008
- BS 6387:2013 (CWZ)
- EN 50200:2006 (Class PH30/PH120)
- EN 50200:2006 Annex E (30 mins)
- BS 5839-1:2013 (Clause 26.2d Standard)

CABLE PRINTING

RAMFIRECRO-F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE – LSZH - 300/500V - BS 7629-1:2008 - BS 6387 CWZ - 2x1.5 mm² + E - LPCB 568c/02 - MADE IN ITALY - BATCH N°

CABLE PRINTING

RAMFIRECRO-F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE – LSZH - 300/500V - BS 7629-1:2008 - BS 6387 CWZ - 2x1.5 mm² + E - LPCB 568c/02 - MADE IN ITALY - BATCH N°

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km

Test Voltage Core-Core:
2000 V

Test Voltage Core-Screen:
2000 V

Mutual Capacitance:
< 150 nF/km

Inductance:
< 1 mH/km

Operating Voltage:
300/500 V

CHARACTERISTICS

Fire Resistant

Min. Bending Radius
8 x cable diameter

Low Smoke Halogen Free

TEMPERATURE RANGE

During Operation:
-30°C up to +180°C

During Installation:
-5°C up to +50°C

STANDARD FIRE SUN
BS 7629-1:2008

LPCB 568c/02

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

CONSTRUCTION

Formation:
Plain annealed copper wire, solid

Insulation:
Special mix silicon rubber

Wrapping:
at least 1 layer of plastic tape 0.023 mm

Collective Screen:
0.026 mm Aluminium / PETP tape over tinned copper
drain wire

Outer Sheath:
Thermoplastic Low Smoke, Halogen Free

Colour Outer Sheath:
Red or White

IDENTIFICATION OF CORES

2 cores: 
3 cores: 
4 cores: 
up/from 5 cores: Black Numbered

STANDARD REFERENCES

- BS 7629-1:2008
- BS 6387:2013 (CWZ)
- EN 50200:2006 (Class PH30/PH120)
- EN 50200:2006 Annex E (30 mins)
- BS 5839-1:2013 (Clause 26.2d Standard)

CABLE PRINTING

RAMFIRECRO-F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE – LSZH - 300/500V - BS 7629-1:2008 - BS 6387 CWZ - 2x1.5 mm² + E - LPCB 568c/02 - MADE IN ITALY - BATCH N°

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km

Test Voltage Core-Core:
2000 V

Test Voltage Core-Screen:
2000 V

Mutual Capacitance:
< 150 nF/km

Inductance:
< 1 mH/km

Operating Voltage:
300/500 V

CHARACTERISTICS

Fire Resistant

Min. Bending Radius
8 x cable diameter

Low Smoke Halogen Free

TEMPERATURE RANGE

During Operation:
-30°C up to +180°C

During Installation:
-5°C up to +50°C

STANDARD FIRE SUN
BS 7629-1:2008

LPCB 568c/02

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

CONSTRUCTION

Formation:
Plain annealed copper wire, solid

Insulation:
Special mix silicon rubber

Wrapping:
at least 1 layer of plastic tape 0.023 mm

Collective Screen:
0.026 mm Aluminium / PETP tape over tinned copper
drain wire

Outer Sheath:
Thermoplastic Low Smoke, Halogen Free

Colour Outer Sheath:
Red or White

IDENTIFICATION OF CORES

2 cores: 
3 cores: 
4 cores: 
up/from 5 cores: Black Numbered

STANDARD REFERENCES

- BS 7629-1:2008
- BS 6387:2013 (CWZ)
- EN 50200:2006 (Class PH30/PH120)
- EN 50200:2006 Annex E (30 mins)
- BS 5839-1:2013 (Clause 26.2d Standard)

CABLE PRINTING

RAMFIRECRO-F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE – LSZH - 300/500V - BS 7629-1:2008 - BS 6387 CWZ - 2x1.5 mm² + E - LPCB 568c/02 - MADE IN ITALY - BATCH N°

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km

Test Voltage Core-Core:
2000 V

Test Voltage Core-Screen:
2000 V

Mutual Capacitance:
< 150 nF/km

Inductance:
< 1 mH/km

Operating Voltage:
300/500 V

CHARACTERISTICS

Fire Resistant

Min. Bending Radius
8 x cable diameter

Low Smoke Halogen Free

TEMPERATURE RANGE

During Operation:
-30°C up to +180°C

During Installation:
-5°C up to +50°C

STANDARD FIRE SUN
BS 7629-1:2008
<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAR0211HFESL-F3PH120</td>
<td>2x1.00*</td>
<td>6.4*</td>
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<td>19x2.50</td>
<td>18.1</td>
<td>787</td>
<td>7.6</td>
</tr>
</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR___HCESL-F3PH120
**CONSTRUCTION**

**Formation:**
Plain annealed copper wire, 7 strand

**Insulation:**
Special mix silicon rubber

**Wrapping:**
at least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over tinned copper drain wire

**Outher Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outher Sheath:**
Red or White

---

**STANDARD REFERENCES**

- BS 7629-1:2008
- BS 6387:2013 (CWZ)
- EN 50200:2006 (Class PH30/PH120)
- EN 50200:2006 Annex E (30 mins)
- BS 5839-1:2013 (Clause 26.2d Standard)

---

**IDENTIFICATION OF CORES**

<table>
<thead>
<tr>
<th>Number of Cores</th>
<th>Color Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><img src="https://via.placeholder.com/15" alt="Red" /> <img src="https://via.placeholder.com/15" alt="Blue" /></td>
</tr>
<tr>
<td>3</td>
<td><img src="https://via.placeholder.com/15" alt="Red" /> <img src="https://via.placeholder.com/15" alt="Blue" /> <img src="https://via.placeholder.com/15" alt="Black" /></td>
</tr>
<tr>
<td>4</td>
<td><img src="https://via.placeholder.com/15" alt="Red" /> <img src="https://via.placeholder.com/15" alt="Blue" /> <img src="https://via.placeholder.com/15" alt="Black" /> <img src="https://via.placeholder.com/15" alt="Black" /></td>
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<td>5+</td>
<td>Black Numbered</td>
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**CABLE PRINTING**

RAMFIRECRO –F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE – LSZH - 300/500V - BS 7629-1:2008 - BS EN50200 PH30/120 - BS 6387 CWZ - 2x1,5 mmq + E - LPCB 568c/02 - MADE IN ITALY - BATCH N°

---

**ELECTRICAL DATA**

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation Resistance @ 20°C</td>
<td>&gt; 200 MOhm*Km</td>
</tr>
<tr>
<td>Test Voltage Core-Core</td>
<td>2000 V</td>
</tr>
<tr>
<td>Test Voltage Core-Screen</td>
<td>2000 V</td>
</tr>
<tr>
<td>Mutual Capacitance</td>
<td>&lt; 150 nF/km</td>
</tr>
<tr>
<td>Inductance</td>
<td>&lt; 1 mH/km</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>300/500 V</td>
</tr>
</tbody>
</table>

---

**CHARACTERISTICS**

- Fire Resistant
- Min. Bending Radius: 8 x cable diameter
- Low Smoke Halogen Free
<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
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</thead>
<tbody>
<tr>
<td>SAS0210HFESL-F3PH120</td>
<td>2x1.00*</td>
<td>6.7*</td>
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<td>3x1.00*</td>
<td>6.8*</td>
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<td>4x1.00*</td>
<td>7.4*</td>
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<td>8.1</td>
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<td>SAS1210HFESD-F3PH120</td>
<td>12x1.00</td>
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<td>261</td>
<td>18.5</td>
</tr>
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<td>SAS1910HFESD-F3PH120</td>
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<td>2x1.50*</td>
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<td>3x1.50*</td>
<td>7.8*</td>
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<tr>
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<td>4x1.50*</td>
<td>8.5*</td>
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<td>SAS0515HFESD-F3PH120</td>
<td>5x1.50</td>
<td>9.3</td>
<td>171</td>
<td>12.3</td>
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<td>SAS0715HFESD-F3PH120</td>
<td>7x1.50</td>
<td>10.3</td>
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<td>12.3</td>
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<td>12.3</td>
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<td>15.9</td>
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<tr>
<td>SAS0325HFESP-F3PH120</td>
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<td>4x2.50*</td>
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<tr>
<td>SAS0525HFESD-F3PH120</td>
<td>5x2.50</td>
<td>11.3</td>
<td>262</td>
<td>7.6</td>
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<tr>
<td>SAS0725HFESD-F3PH120</td>
<td>7x2.50</td>
<td>12.3</td>
<td>343</td>
<td>7.6</td>
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<td>SAS1225HFESD-F3PH120</td>
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<td>350</td>
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<td>2x4.00*</td>
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<td>3x4.00*</td>
<td>10.4*</td>
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<td>5x4.00</td>
<td>12.5</td>
<td>362</td>
<td>4.7</td>
</tr>
</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS___HCESL-F3PH120
**CONSTRUCTION**

<table>
<thead>
<tr>
<th>Formation:</th>
<th>Plain annealed copper wire, solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation:</td>
<td>Special mix silicon rubber</td>
</tr>
<tr>
<td>Wrapping:</td>
<td>at least 1 layer of plastic tape 0,023 mm</td>
</tr>
<tr>
<td>Collective Screen:</td>
<td>0,026 mm Aluminium / PETP tape over copper drain wire</td>
</tr>
<tr>
<td>Outer Sheath:</td>
<td>Thermoplastic Low Smoke, Halogen Free</td>
</tr>
<tr>
<td>Colour Outer Sheath:</td>
<td>Red or White</td>
</tr>
</tbody>
</table>

**STANDARD REFERENCES**

- IEC 60331-21:1999
- EN 60267-2-1:1999
- EN 61034-2:2005

**IDENTIFICATION OF CORES**

<table>
<thead>
<tr>
<th>2 cores:</th>
<th>3 cores:</th>
<th>4 cores:</th>
<th>up/from 5 cores:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Black Numbered</td>
</tr>
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</table>

**CPR CLASSIFICATION**

EN 50575:2016 - Ca s1A, d0, a1

**TEMPERATURE RANGE**

**During Operation:**
-30°C up to +180°C

**During Installation:**
-5°C up to +50°C

**CABLE PRINTING**

RAMFIRECRO-F3 - FIRE SAFE - IEC 60331 N° COND. X AREA + E – LSZH 1 1/2 H 750 - LPCB 568d/01 - IEC 60331-21 - 300/500 V - BATCH N°

**ELECTRICAL DATA**

<table>
<thead>
<tr>
<th>Insulation Resistance @ 20°C:</th>
<th>&gt; 200 MOhm*Km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Voltage Core-Core:</td>
<td>2000 V</td>
</tr>
<tr>
<td>Test Voltage Core-Screen:</td>
<td>2000 V</td>
</tr>
<tr>
<td>Mutual Capacitance:</td>
<td>&lt; 150 nF/km</td>
</tr>
<tr>
<td>Inductance:</td>
<td>&lt; 1 mH/km</td>
</tr>
<tr>
<td>Operating Voltage:</td>
<td>300/500 V</td>
</tr>
</tbody>
</table>

**CHARACTERISTICS**

- Fire Resistant
- Min. Bending Radius 8 x cable diameter
- Low Smoke Halogen Free
<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAR0211HFEEL-F3</td>
<td>2x1.00*</td>
<td>6.8*</td>
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<td>18.5</td>
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<td>SAR0511HFEEL-F3</td>
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<td>SAR0514HFEEL-F3</td>
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<tr>
<td>SAR1214HFEEL-F3</td>
<td>12x1.50</td>
<td>13.6</td>
<td>329</td>
<td>12.3</td>
</tr>
<tr>
<td>SAR1914HFEEL-F3</td>
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<td>12.3</td>
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<td>SAR0318HFEELP-F3</td>
<td>3x2.50*</td>
<td>8.6*</td>
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<td>7.6</td>
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<td>SAR0418HFEELQ-F3</td>
<td>4x2.50*</td>
<td>9.8*</td>
<td>177</td>
<td>7.6</td>
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<tr>
<td>SAR0518HFEEL-F3</td>
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<td>SAR1918HFEEL-F3</td>
<td>19x2.50</td>
<td>18.7</td>
<td>734</td>
<td>7.6</td>
</tr>
</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* If the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR____HCEEL-F3
**CONSTRUCTION**

**Formation:**
Plain annealed copper wire, 7 strand

**Insulation:**
Special mix silicon rubber

**Wrapping:**
At least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Red or White

**STANDARD REFERENCES**

- IEC 60331-21:1999
- EN 50267-2-1:1999
- EN 61034-2:2005

**IDENTIFICATION OF CORES**

- 2 cores: 🟦🟦
- 3 cores: 🟦🟦🟦
- 4 cores: 🟦🟦🟦🟦
- Up/from 5 cores: Black Numbered

**CABLE PRINTING**

RAMFIRECRO—F3 - FIRE SAFE - IEC 60331 N° COND. X AREA + E – LSZH 1 1/2 H 750 - LPCB 568d/01 - IEC 60331-21 - 300/500 V - BATCH N°

**ELECTRICAL DATA**

**Insulation Resistance @ 20°C:**
> 200 MOhm*Km

**Test Voltage Core-Core:**
2000 V

**Test Voltage Core-Screen:**
2000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
300/500 V

**CHARACTERISTICS**

- Fire Resistant
- Min. Bending Radius
  - 8 x cable diameter
- Low Smoke Halogen Free

**TEMPERATURE RANGE**

- During Operation:
  - -30° C up to +180°C
- During Installation:
  - -5° C up to +50°C
<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS0210HFEEL-F3</td>
<td>2x1.00*</td>
<td>7.1*</td>
<td>64</td>
<td>18.5</td>
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<tr>
<td>SAS0310HFEFP-F3</td>
<td>3x1.00*</td>
<td>7.5*</td>
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<td>18.5</td>
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<tr>
<td>SAS0410HFEEQ-F3</td>
<td>4x1.00*</td>
<td>8.2*</td>
<td>104</td>
<td>18.5</td>
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<tr>
<td>SAS0510HFEED-F3</td>
<td>5x1.00</td>
<td>9.4</td>
<td>133</td>
<td>18.5</td>
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<tr>
<td>SAS0710HFEED-F3</td>
<td>7x1.00</td>
<td>10.2</td>
<td>172</td>
<td>18.5</td>
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<tr>
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<td>12x1.00</td>
<td>13.3</td>
<td>276</td>
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<td>15.9</td>
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<tr>
<td>SAS0215HFEEL-F3</td>
<td>2x1.50*</td>
<td>7.6*</td>
<td>77</td>
<td>12.3</td>
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<tr>
<td>SAS0315HFEFP-F3</td>
<td>3x1.50*</td>
<td>8.1*</td>
<td>102</td>
<td>12.3</td>
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<tr>
<td>SAS0415HFEEQ-F3</td>
<td>4x1.50*</td>
<td>9.3*</td>
<td>137</td>
<td>12.3</td>
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<td>5x1.50</td>
<td>10.1</td>
<td>165</td>
<td>12.3</td>
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<td>SAS0715HFEED-F3</td>
<td>7x1.50</td>
<td>11.0</td>
<td>215</td>
<td>12.3</td>
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<td>SAS1215HFEED-F3</td>
<td>12x1.50</td>
<td>14.8</td>
<td>362</td>
<td>12.3</td>
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<td>SAS1915HFEED-F3</td>
<td>19x1.50</td>
<td>17.2</td>
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<td>12.3</td>
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<td>SAS0225HFEEL-F3</td>
<td>2x2.50*</td>
<td>8.3*</td>
<td>103</td>
<td>7.6</td>
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<tr>
<td>SAS0325HFEFP-F3</td>
<td>3x2.50*</td>
<td>9.4*</td>
<td>147</td>
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<td>SAS0425HFEEQ-F3</td>
<td>4x2.50*</td>
<td>10.3*</td>
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<td>7.6</td>
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<tr>
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<td>5x2.50</td>
<td>11.3</td>
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<td>12.3</td>
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<td>19x2.50</td>
<td>19.8</td>
<td>773</td>
<td>7.6</td>
</tr>
</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* if the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAS___HCEEL-F3
CONSTRUCTION

Formation:
Plain annealed copper wire, Multistrand

Insulation:
Special mix silicon rubber

Wrapping:
at least 1 layer of plastic tape 0,023 mm

Inner Sheath:
Thermoplastic Low Smoke, Halogen Free

Armour:
Galvanized steel wire

Outer Sheath:
Thermoplastic Low Smoke, Halogen Free

Colour Outer Sheath:
Red

STANDARD REFERENCES

- BS 6387:2013 Cat. C-W-Z
- EN 60754-1:2014
- EN 60754-2:2014
- EN 60332-3-24:2009
- EN 60332-1-2:2004

IDENTIFICATION OF CORES

2 cores:
3 cores:
4 cores:
5 cores:

TEMPERATURE RANGE

During Operation:
-30°C up to +180°C

During Installation:
-5°C up to +50°C

CABLE PRINTING

RAMFIRECRO –F3 - FIRE GROUND – LSZH – LPCB 568e/01 - BS 6387 CWZ - IEC 60332-3-24 - IEC 60332-1-2 - IEC 60502 - BS 7846 - 0,6/1 kV - 5x1,5 mmq - CU/Sil/LSZH/SWA/LSZH - ARMOURED - MADE IN ITALY + BATCH N.

ELECTRICAL DATA

Insulation Resistance @ 20°C:
> 200 MOhm*Km

Test Voltage Core-Core:
5000 V

Mutual Capacitance:
< 150 nF/km

Inductance:
< 1 mH/km

Operating Voltage:
600/1000 V

CHARACTERISTICS

Fire Resistant

Min. Bending Radius
8 x cable diameter

Power Cable
<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSS0215AFESH-F3(FG)</td>
<td>2x1.50</td>
<td>14.2*</td>
<td>373</td>
<td>13.8</td>
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<td>SSS0315AFESP-F3(FG)</td>
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<td>14.3*</td>
<td>395</td>
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<td>15.1*</td>
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<td>16.6*</td>
<td>563</td>
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<tr>
<td>SSS0225AFESH-F3(FG)</td>
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<td>16.2*</td>
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<td>SSS0375AFESP-F3(FG)</td>
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<td>16.4*</td>
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<td>SSS0475AFESQ-F3(FG)</td>
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<td>17.3*</td>
<td>635</td>
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<tr>
<td>SSS0575AFESD-F3(FG)</td>
<td>5x2.50</td>
<td>18.3*</td>
<td>709</td>
<td>8.3</td>
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<tr>
<td>SSS0240AFESL-F3(FG)</td>
<td>2x4.00</td>
<td>17.1*</td>
<td>592</td>
<td>5.1</td>
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<tr>
<td>SSS0340AFESP-F3(FG)</td>
<td>3x4.00</td>
<td>17.3*</td>
<td>640</td>
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<tr>
<td>SSS0440AFESQ-F3(FG)</td>
<td>4x4.00</td>
<td>18.3*</td>
<td>725</td>
<td>5.1</td>
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<tr>
<td>SSS0540AFESD-F3(FG)</td>
<td>5x4.00</td>
<td>19.4*</td>
<td>815</td>
<td>5.1</td>
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<tr>
<td>SSS0260AFESL-F3(FG)</td>
<td>2x6.00</td>
<td>18.6*</td>
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<td>3x6.00</td>
<td>18.8*</td>
<td>786</td>
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<td>4x6.00</td>
<td>20.0**</td>
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<td>SSS0560AFESD-F3(FG)</td>
<td>5x6.00</td>
<td>22.0**</td>
<td>1132</td>
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<td>SSS0211AFESL-F3(FG)</td>
<td>2x10.00</td>
<td>20.6**</td>
<td>910</td>
<td>2.0</td>
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<td>SSS0311AFESP-F3(FG)</td>
<td>3x10.00</td>
<td>20.9**</td>
<td>1021</td>
<td>2.0</td>
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<td>SSS0411AFESQ-F3(FG)</td>
<td>4x10.00</td>
<td>23.1**</td>
<td>1303</td>
<td>2.0</td>
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<tr>
<td>SSS0511AFESD-F3(FG)</td>
<td>5x10.00</td>
<td>24.6**</td>
<td>1492</td>
<td>2.0</td>
</tr>
<tr>
<td>SSS0216AFESL-F3(FG)</td>
<td>2x16.00</td>
<td>24.1**</td>
<td>1306</td>
<td>1.3</td>
</tr>
<tr>
<td>SSS0316AFESP-F3(FG)</td>
<td>3x16.00</td>
<td>24.4**</td>
<td>1479</td>
<td>1.3</td>
</tr>
<tr>
<td>SSS0416AFESQ-F3(FG)</td>
<td>4x16.00</td>
<td>26.2**</td>
<td>1737</td>
<td>1.3</td>
</tr>
<tr>
<td>SSS0516AFESD-F3(FG)</td>
<td>5x16.00</td>
<td>28.3**</td>
<td>2022</td>
<td>1.3</td>
</tr>
<tr>
<td>SSS0227AFESL-F3(FG)</td>
<td>2x25.00</td>
<td>26.1**</td>
<td>1627</td>
<td>0.8</td>
</tr>
<tr>
<td>SSS0327AFESP-F3(FG)</td>
<td>3x25.00</td>
<td>26.5**</td>
<td>1888</td>
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<tr>
<td>SSS0427AFESQ-F3(FG)</td>
<td>4x25.00</td>
<td>28.8**</td>
<td>2266</td>
<td>0.8</td>
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<tr>
<td>SSS0527AFESD-F3(FG)</td>
<td>5x25.00</td>
<td>31.2**</td>
<td>2663</td>
<td>0.8</td>
</tr>
</tbody>
</table>

*Cables certified by LPCB BRE GLOBAL

** The Ramfirecro-F3 FIRE GROUND range with diameters greater than 20mm were tested in accordance with clause 17.4.2 annex L BS 7846:2015

*** If the cable SSS____ACESL-F3(FG)
**CONSTRUCTION**

**Formation:**
Plain annealed copper wire, solid and stranded

**Insulation:**
Special mix silicon rubber

**Wrapping:**
at least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Red or White

---

**STANDARD REFERENCES**

- EN 50200:2015 (Class PH120)
- IEC 60754-1:2014

---

**IDENTIFICATION OF CORES**

- 2 cores: 
- 3 cores: 
- 4 cores: 
- up/from 5 cores: Black Numbered

---

**CPR CLASSIFICATION**

EN 50575:2016 - C_{CA}s1A, d0, a1

---

**TEMPERATURE RANGE**

**During Operation:**
-30° C up to +180°C

**During Installation:**
-5° C up to +50°C

---

**ELECTRICAL DATA**

**Insulation Resistance @ 20°C:**
> 200 MOhm*Km

**Test Voltage Core-Core:**
5000 V

**Test Voltage Core-Screen:**
5000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
600/1000 V

---

**CHARACTERISTICS**

- Fire Resistant
- Min. Bending Radius
  8 x cable diameter
- Power Cable
## Solid Version (Bare Copper Cl.1)

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAR0211IF-WFA10210</td>
<td>2x1.00*</td>
<td>8.0*</td>
<td>81</td>
<td>18.8</td>
</tr>
<tr>
<td>SAR0311IF-WFA10210</td>
<td>3x1.00</td>
<td>8.5</td>
<td>101</td>
<td>18.8</td>
</tr>
<tr>
<td>SAR0411IF-WFA10210</td>
<td>4x1.00</td>
<td>9.2</td>
<td>124</td>
<td>18.8</td>
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<tr>
<td>SAR0214IF-WFA10215</td>
<td>2x1.50*</td>
<td>8.7*</td>
<td>97</td>
<td>12.6</td>
</tr>
<tr>
<td>SAR0214IF-WFA10215</td>
<td>3x1.50</td>
<td>9.2</td>
<td>124</td>
<td>12.6</td>
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<tr>
<td>SAR0214IF-WFA10215</td>
<td>4x1.50</td>
<td>10.0</td>
<td>153</td>
<td>12.6</td>
</tr>
<tr>
<td>SAR0218IF-WFA10225</td>
<td>2x2.50*</td>
<td>9.7*</td>
<td>126</td>
<td>7.7</td>
</tr>
<tr>
<td>SAR0218IF-WFA10225</td>
<td>3x2.50</td>
<td>10.2</td>
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<tr>
<td>SAR0218IF-WFA10225</td>
<td>4x2.50</td>
<td>11.1</td>
<td>207</td>
<td>7.7</td>
</tr>
</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* if the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR____IC-WFA_____

## Stranded Version (Bare Copper Cl.2)

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS0210IF-WFA10210</td>
<td>2x1.00*</td>
<td>8.3*</td>
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<td>SAS0310IF-WFA10210</td>
<td>3x1.00</td>
<td>8.8</td>
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<td>18.8</td>
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<td>SAS0410IF-WFA10210</td>
<td>4x1.00</td>
<td>9.5</td>
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<td>SAS0215IF-WFA10215</td>
<td>2x1.50*</td>
<td>9.0*</td>
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<td>12.6</td>
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<tr>
<td>SAS0215IF-WFA10215</td>
<td>3x1.50</td>
<td>9.5</td>
<td>130</td>
<td>12.6</td>
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<tr>
<td>SAS0215IF-WFA10215</td>
<td>4x1.50</td>
<td>10.4</td>
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<td>12.6</td>
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<tr>
<td>SAS0225IF-WFA10225</td>
<td>2x2.50*</td>
<td>10.1*</td>
<td>133</td>
<td>7.7</td>
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<td>SAS0225IF-WFA10225</td>
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<td>10.7</td>
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<td>7.7</td>
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<td>4x2.50</td>
<td>11.7</td>
<td>218</td>
<td>7.7</td>
</tr>
</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS____IC-WFA_____

---

FIRE MOON ENHANCED

EN 50200:2015 Class PH 120

Multi-Core, Solid or Stranded CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

---

Via Marzorati, 15 - 20014  Nerviano - Milan - Italy / www.ramcro.it
# CONSTRUCTION

**Formation:**
Plain annealed copper wire, solid

**Insulation:**
- Polyethylene - PE
- Fiber Glass Tape

**Wrapping:**
at least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Red

# ELECTRICAL DATA

**Insulation Resistance @ 20°C:**
> 200 MOhm*Km

**Test Voltage Core-Core:**
2000 V

**Test Voltage Core-Screen:**
2000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
300 V

# STANDARD REFERENCES

- IEC 60331-21:1999
- IEC 60332-1-2:2004
- IEC 61034-2:2005
- EN 60754-1:2014

# IDENTIFICATION OF CORES

<table>
<thead>
<tr>
<th>1 pair:</th>
<th>2 pair:</th>
<th>3 pair:</th>
<th>4 pair:</th>
</tr>
</thead>
</table>

# TEMPERATURE RANGE

**During Operation:**
-30°C up to +180°C

**During Installation:**
-5°C up to +50°C

# CABLE PRINTING

LANFIRECRO–F3 IEC 60331 - FIRE RESISTENT Data Cable Cat. 6 - 4x2x22AWG + E - LPCB 568g/01 – LSZH 90 min. 750 - IEC 60331-21 - 300 V - BATCH N° + METER MARKING

# CHARACTERISTICS

- Fire Resistant
- Min. Bending Radius
  
  8 x cable diameter

- Data LAN

---

**LANFIRECRO-F3**

EIA/TIA 568A, ISO/IEC 11801

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

---
### RAMCRO CODE FORMATION

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
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<td>4x2x22AWG*</td>
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<td>75.0</td>
</tr>
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</table>

### Frequency (MHz) | Max. Insertion Loss (dB/100 m) | Min. NEXT (dB) | Min. PSNEXT (dB) | Min. ACR (dB) | Min. PSACR (dB) | Min. ACFR (ELFEXT) (dB) | Min. PSACRF (PSELFEXT) (dB) | Min. RL (Return Loss) (dB) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
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<td>59.5</td>
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<td>16.8</td>
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</table>

* Cables certified by LPCB BRE GLOBAL.
**CONSTRUCTION**

**Formation:**
Plain annealed copper wire, Multistrand

**Insulation:**
Special mix silicon rubber

**Wrapping:**
at least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Red or White

---

**STANDARD REFERENCES**

- EN 50200:2015 (Class PH30)
- EN 60754-1:2014

---

**IDENTIFICATION OF CORES**

2 cores: ⚫ ⚫

---

**CPR CLASSIFICATION**

EN 50575:2016 - C_{CA}s1A, d0, a1

**TEMPERATURE RANGE**

**During Operation:**
-30°C up to 180°C

**During Installation:**
-5°C up to +50°C

---

**ELECTRICAL DATA**

**Insulation Resistance @ 20°C:**
> 200 MOhm*Km

**Test Voltage Core-Core:**
2000 V

**Test Voltage Core-Screen:**
2000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
100/100 V

---

**CHARACTERISTICS**

- Fire Resistant
- Min. Bending Radius
  8 x cable diameter
- Low Smoke Halogen Free
## RAMCRO CODE FORMATION

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
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<td>2x1.00*</td>
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* Cables certified by LPCB BRE GLOBAL
* if the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR___HCESL-F3(IE)
**CONSTRUCTION**

- **Formation:** Plain annealed copper wire, Multistrand
- **Insulation:** Special mix silicon rubber
- **Wrapping:** at least 1 layer of plastic tape 0,023 mm
- **Collective Screen:** 0,026 mm Aluminium / PETP tape over copper drain wire
- **Outer Sheath:** Thermoplastic Low Smoke, Halogen Free
- **Colour Outer Sheath:** Red or Violet

---

**STANDARD REFERENCES**

- CEI 20-105
- UNI 9795
- CEI 20-36 PH 30 / 90
- EN 50200 PH 30 / 90
- CEI EN 60332-3-25

---

**IDENTIFICATION OF CORES**

- 2 cores: ☐ ☐
- 4 cores: ☐ ☐ ☐ ☐

**CABLE PRINTING**

RAMFIRECRO-F3 FIRE COMET CEI 20-105 FG4OHM1 2x1.00 mmq UNI9795 CEI 20-36/4-0 PH30/90
CEI EN 60332-3-25 EN 50575:2014+A1:2016 CPR Class Cca - s1a, d0, a1 - 100/100 V Uo=400 V BATCH + MM/YY

**ELECTRICAL DATA**

- **Insulation Resistance @ 20°C:** > 200 MOhm*Km
- **Test Voltage Core-Core:** 2000 V
- **Test Voltage Core-Screen:** 2000 V
- **Mutual Capacitance:** < 150 nF/km
- **Inductance:** < 1 mH/km
- **Operating Voltage:** 100/100 V

**CHARACTERISTICS**

- Fire Resistant
- Min. Bending Radius
- Low Smoke Halogen Free
- Italian Market
### RAMCRO CODE FORMATION

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* Cables certified by IMQ

---

### Cables for EVAC voice evacuation systems - Violet Sheath

<table>
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* Cables certified by IMQ
### Construction

**Formation:**
Plain annealed copper wire, Multistrand

**Insulation:**
Special mix silicon rubber

**Wrapping:**
At least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Red or Violet

### Standard References

- CEI 20-105
- UNI 9795
- CEI 20-36 PH 120
- EN 50200 PH 120
- CEI EN 60332-3-25

### Identification of Cores

2 cores: [ ] [ ]
4 cores: [ ] [ ] [ ] [ ]

### CPR Classification

EN 50575:2016 - C_{CA}s1A, d0, a1

### Temperature Range

- **Fixed Installation:** -30°C up to +70°C
- **During Installation:** -5°C up to +50°C

### Cable Printing

RAMFIRECRO-F3 FIRE COMET CEI 20-105 FG4OHM1 2x1.00 mmq UNI9795 CEI 20-36/4-0 PH120

CEI EN 60332-3-25 EN 50575:2014+A1:2016 CPR Class Cca - s1a, d0, a1 - 100/100 V Uo= 400 V + MM/YY

### Electrical Data

**Insulation Resistance @ 20°C:**
> 200 MOhm*Km

**Test Voltage Core-Core:**
2000 V

**Test Voltage Core-Screen:**
2000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
100/100 V

### Characteristics

- Fire Resistant
- Low Smoke Halogen Free
- Italian Market
- Min. Bending Radius 8 x cable diameter
# FIRE COMET

**CEI 20-105 - FG4OHM1 PH120**

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

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<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
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Cables for **EVAC** voice evacuation systems - Violet Sheath

<table>
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<th>RAMCRO CODE</th>
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</table>
Fire Comet
CEI 20-105 - FTE4OHM1 PH30/90
Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Construction
Formation:
Plain annealed copper wire, Multistrand
Insulation:
Mica Tape + Cross Liked Polyethylene - XLPE
Wrapping:
at least 1 layer of plastic tape 0,023 mm
Collective Screen:
0,026 mm Aluminium / PETP tape over copper drain wire
Outer Sheath:
Thermoplastic Low Smoke, Halogen Free
Colour Outer Sheath:
Red or Violet

Standard References
- CEI 20-105
- UNI 9795
- CEI 20-36 PH 30 / 90
- EN 50200 PH 30 / 90
- CEI EN 60332-3-25

Identification of Cores
2 cores: ❌❌
4 cores: ❌❌〇〇

Temperature Range
Fixed Installation:
-30°C up to +70°C
During Installation:
-5°C up to +50°C

Cable Printing
RAMFIRECRO-F3 FIRE COMET CEI 20-105 FTE4OHM1 2x1.00 mmq UNI 9795 CEI 20-36/4-0 PH30/90
CEI EN 60332-3-25 - 100/100 V - Uo=400 V + BATCH + MM/YY

Electrical Data
Insulation Resistance @ 20°C:
> 200 MOhm*Km
Test Voltage Core-Core:
2000 V
Test Voltage Core-Screen:
2000 V
Mutual Capacitance:
< 150 nF/km
Inductance:
< 1 mH/km
Operating Voltage:
100/100 V

Characteristics
- Fire Resistant
- Min. Bending Radius
  8 x cable diameter
- Low Smoke Halogen Free
- Italian Market
### FIRE COMET

**CEI 20-105 - FTE4OHM1 PH30/90**

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

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<tbody>
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### Cables for EVAC voice evacuation systems - Violet Sheath

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<td>39.8</td>
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<td>SAS0275HXEOH-F3FTE</td>
<td>2x0.75</td>
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</tr>
</tbody>
</table>
## Construction

**Formation:**
Plain annealed copper wire, Multistrand

**Insulation:**
Mica Tape + Cross Liked Polyethylene - XLPE

**Wrapping:**
at least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Red or Violet

## Standard References
- CEI 20-105
- UNI 9795
- CEI 20-36 PH 120
- EN 50200 PH 120
- CEI EN 60332-3-25

## Identification of Cores

<table>
<thead>
<tr>
<th>Cores</th>
<th>Code</th>
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<tbody>
<tr>
<td>2</td>
<td>🟢🟢</td>
</tr>
<tr>
<td>4</td>
<td>🟢🟢🟢🟢</td>
</tr>
</tbody>
</table>

## Temperature Range
- **Fixed Installation:** -30°C up to +70°C
- **During Installation:** -5°C up to +50°C

## Cable Printing
RAMFIRECRO–F3 FIRE COMET CEI 20-105 FTE4OHM1 2x1.00 mmq UNI 9795 CEI 20-36/4-0 PH120
CEI EN 60332-3-25 - 100/100 V - Uo=400 V + BATCH + MM/YY

## Electrical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation Resistance @ 20°C:</td>
<td>&gt; 200 MOhm*Km</td>
</tr>
<tr>
<td>Test Voltage Core-Core:</td>
<td>2000 V</td>
</tr>
<tr>
<td>Test Voltage Core-Screen:</td>
<td>2000 V</td>
</tr>
<tr>
<td>Mutual Capacitance:</td>
<td>&lt; 150 nF/km</td>
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<tr>
<td>Inductance:</td>
<td>&lt; 1 mH/km</td>
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<tr>
<td>Operating Voltage:</td>
<td>100/100 V</td>
</tr>
</tbody>
</table>

## Characteristics
- Fire Resistant
- Min. Bending Radius
  - 8 x cable diameter
- Low Smoke Halogen Free
- Italian Market

---

**RAMFIRECRO–F3 - FIRE COMET - CEI 20-105 - FTE4OHM1**
## FIRE COMET

**CEI 20-105 - FTE4OHM1 PH120**

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS0250HFEOH-F3FTE120</td>
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<td>4x0.50</td>
<td>7.8</td>
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<td>39.8</td>
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<tr>
<td>SAS0275HFEOH-F3FTE120</td>
<td>2x0.75</td>
<td>7.5</td>
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<td>4x2.50</td>
<td>11.9</td>
<td>232</td>
<td>8.1</td>
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</table>

Cables for **EVAC** voice evacuation systems - Violet Sheath

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
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<tbody>
<tr>
<td>SAS0250HXEOH-F3FTE120</td>
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<td>39.8</td>
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<td>39.8</td>
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<td>26.5</td>
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<td>26.5</td>
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<td>19.9</td>
</tr>
<tr>
<td>SAS0215HXEOH-F3FTE120</td>
<td>2x1.50</td>
<td>9.2</td>
<td>100</td>
<td>13.6</td>
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<tr>
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<tr>
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<td>2x2.50</td>
<td>10.7</td>
<td>143</td>
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</tr>
<tr>
<td>SAS0225HXEOH-F3FTE120</td>
<td>4x2.50</td>
<td>11.9</td>
<td>232</td>
<td>8.1</td>
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</tbody>
</table>
**TELRAMFEU**

**NBN 713-020 CR1-C1**

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

### Construction

**Formation:**
Plain annealed copper wire, Solid

**Insulation:**
Special Mix Silicon Rubber

**Collective Screen:**
Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Orange

### Standard References

- NBN 713-020
- NF C32-070 CAT. C1 & C2
- EN 50200
- NBN C 30-004 F2 FR2
- NF C32-310

### Identification of Cores

1 Pair: 
2 Pair: 
3 Pair: 

### Temperature Range

**Fixed Installation:**
-30°C up to +180°C

**During Installation:**
-5°C up to +50°C

### Cable Printing

**RAMFIRECRO-F3 TELRAMFEU - 2PR 9/10 - CR1/C1 NF C 32-070 & IEC 60331 0.5 kV HALOGEN FREE + BATCH + METER MARKING**

### Electrical Data

**Insulation Resistance @ 20°C:**
> 200 MOhm*Km

**Test Voltage Core-Core:**
2000 V

**Test Voltage Core-Screen:**
2000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
100/100 V

### Characteristics

- Fire Resistant
- Min. Bending Radius
  8 x cable diameter
- Low Smoke Halogen Free
- French Market

### Standard References (cont.)

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

**Cable Printing**

**Identification of Cores**

1 Pair: 
2 Pair: 
3 Pair: 

**Temperature Range**

- Fixed Installation:
  -30°C up to +180°C
- During Installation:
  -5°C up to +50°C

**Cable Printing**

**Identification of Cores**

1 Pair: 
2 Pair: 
3 Pair: 

**Temperature Range**

- Fixed Installation:
  -30°C up to +180°C
- During Installation:
  -5°C up to +50°C

**Cable Printing**

**Identification of Cores**

1 Pair: 
2 Pair: 
3 Pair: 

**Temperature Range**

- Fixed Installation:
  -30°C up to +180°C
- During Installation:
  -5°C up to +50°C

**Cable Printing**

**Identification of Cores**

1 Pair: 
2 Pair: 
3 Pair: 

**Temperature Range**

- Fixed Installation:
  -30°C up to +180°C
- During Installation:
  -5°C up to +50°C
### TELRAMFEU

**NBN 713-020 CR1-C1**  
Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1x2x0.90</td>
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<td>10.6</td>
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</table>
**CONSTRUCTION**

**Formation:**
Plain annealed copper wire, Solid

**Insulation:**
Special Mix Silicon Rubber

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Orange

---

**STANDARD REFERENCES**

- NBN 713-020
- NF C32-070 CAT. C1 & C2
- EN 50200
- NBN C 30-004 F2 FR2
- NF C32-310

---

**ON REQUEST**

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

---

**IDENTIFICATION OF CORES**

In acc. to HD 308

---

**TEMPERATURE RANGE**

**Fixed Installation:**
-30°C up to +180°C

**During Installation:**
-5°C up to +50°C

---

**CABLE PRINTING**

RAMFIRECRO-F3 PUISSRAMFEU - 2x1.50 mm² - 300/500 V - CR1/C1 - week.prod./19 - BATCH + METER MARKING

---

**ELECTRICAL DATA**

- **Insulation Resistance @ 20°C:**
  > 200 MOhm*Km
- **Test Voltage Core-Core:**
  2000 V
- **Test Voltage Core-Screen:**
  2000 V
- **Mutual Capacitance:**
  < 150 nF/km
- **Inductance:**
  < 1 mH/km
- **Operating Voltage:**
  100/100 V

---

**CHARACTERISTICS**

- **Fire Resistant**
- **Min. Bending Radius**
  8 x cable diameter
- **Low Smoke Halogen Free**
- **French Market**

---
<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
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</thead>
<tbody>
<tr>
<td>PYR0215-R-100</td>
<td>2x1.50</td>
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<tr>
<td>PYR0225-R-100</td>
<td>4x2.50</td>
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<td>18.7</td>
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<td>1.83</td>
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</tbody>
</table>
**CONSTRUCTION**

**Formation:**
Plain annealed copper wire, Solid or Stranded

**Insulation:**
- Mica Tape
- Cross Liked Polyeilene - XLPE
- Special mix silicon rubber

**Wrapping:**
at least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over tinned copper drain wire

**Outer Sheath:**
Thermoplastic Low Smoke, Halogen Free

**Colour Outer Sheath:**
Red or White

---

**STANDARD REFERENCES**

- BS 7629-1:2015 Enhanced 120
- EN 50200:2015 Annex E (30 mins)
- EN 50200:2015 (Class PH120)
- BS 8434-2:2003+A2:2009 (120 mins)
- EN 60754-1:2014

---

**IDENTIFICATION OF CORES**

2 cores: [ ]
3 cores: [ ]
4 cores: [ ]
up/from 5 cores: Black Numbered

---

**TEMPERATURE RANGE**

**During Operation:**
-30° C up to +180°C

**During Installation:**
-5° C up to +50°C

---

**CABLE PRINTING**

RAMFIRECRO-F3 - FIRE STAR - FIRE RESISTANT ELECTRIC CABLE – LSZH - 300/500V - BS 7629-1:2015 ENHANCED 120 - 2x1,5 mmq + E - 2018 H - LPCB 568j/01 - MADE IN ITALY - BATCH N°

---

**ELECTRICAL DATA**

**Insulation Resistance @ 20°C:**
> 5000 MΩhm*Km

**Test Voltage Core-Core:**
2000 V

**Test Voltage Core-Screen:**
2000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
300/500 V

---

**CHARACTERISTICS**

**Fire Resistant**

**Min. Bending Radius**
8 x cable diameter

**Low Smoke Halogen Free**
### Solid Version (Bare Copper Cl.1)

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n² x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
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<tbody>
<tr>
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<td>3x1.50*</td>
<td>9.9*</td>
<td>183</td>
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<td>11.1*</td>
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<td>SAR0318HFEOP-F3EN120</td>
<td>3x2.50*</td>
<td>10.8*</td>
<td>201</td>
<td>7.6</td>
</tr>
<tr>
<td>SAR0418HFEOQ-F3EN120</td>
<td>4x2.50*</td>
<td>12.0*</td>
<td>253</td>
<td>7.6</td>
</tr>
</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* if the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR___HCESL-F3(IE)

### Stranded Version (Bare Copper Cl.2)

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n² x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS0210HFEOL-F3EN120</td>
<td>2x1.00*</td>
<td>9.2*</td>
<td>105</td>
<td>18.5</td>
</tr>
<tr>
<td>SAS0310HFEOP-F3EN120</td>
<td>3x1.00*</td>
<td>9.7*</td>
<td>135</td>
<td>18.5</td>
</tr>
<tr>
<td>SAS0410HFEOQ-F3EN120</td>
<td>4x1.00*</td>
<td>10.7*</td>
<td>165</td>
<td>18.5</td>
</tr>
<tr>
<td>SAS0215HFEOL-F3EN120</td>
<td>2x1.50*</td>
<td>9.7*</td>
<td>126</td>
<td>12.3</td>
</tr>
<tr>
<td>SAS0315HFEOP-F3EN120</td>
<td>3x1.50*</td>
<td>10.3*</td>
<td>160</td>
<td>12.3</td>
</tr>
<tr>
<td>SAS0415HFEOQ-F3EN120</td>
<td>4x1.50*</td>
<td>11.5*</td>
<td>203</td>
<td>12.3</td>
</tr>
<tr>
<td>SAS0225HFEOL-F3EN120</td>
<td>2x2.50*</td>
<td>10.6*</td>
<td>161</td>
<td>7.6</td>
</tr>
<tr>
<td>SAS0325HFEOP-F3EN120</td>
<td>3x2.50*</td>
<td>11.5*</td>
<td>214</td>
<td>7.6</td>
</tr>
<tr>
<td>SAS0425HFEOQ-F3EN120</td>
<td>4x2.50*</td>
<td>12.6*</td>
<td>265</td>
<td>7.6</td>
</tr>
<tr>
<td>SAS0240HFEOL-F3EN120</td>
<td>2x4.00*</td>
<td>13.0*</td>
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<td>4.7</td>
</tr>
<tr>
<td>SAS0340HFEOL-F3EN120</td>
<td>3x4.00*</td>
<td>13.9*</td>
<td>321</td>
<td>4.7</td>
</tr>
<tr>
<td>SAS0440HFEOL-F3EN120</td>
<td>4x4.00*</td>
<td>15.3*</td>
<td>398</td>
<td>4.7</td>
</tr>
</tbody>
</table>

* Cables certified by LPCB BRE GLOBAL
* if the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR___HCESL-F3(IE)
**FIRE ALARM - FPLR - UL 1424**

**CONSTRUCTION**

**Formation:**
Plain annealed copper wire, Solid

**Insulation:**
Hi Temperature Polyvinylchloride - PVC HT 105°C

**Wrapping:**
at least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Outer Sheath:**
High Performance Polyvinyl chloride - Hi-PVC

**Colour Outer Sheath:**
Red

**STANDARD REFERENCES**

- UL 1424 (FPRL Type)
- NEC Article 760
- NEC Article 725
- UL 1666
- ASTM D 1329
- NF C 32-020
- IRAM IAP
- EN 50266-2
- IEC 60332-1
- IEC 60332-3

---

**IDENTIFICATION OF CORES**

2 cores: ⬤ ⬤

**TEMPERATURE RANGE**

During Operation:
-30°C up to +105°C

During Installation:
-5°C up to +50°C

---

**CABLE PRINTING**

RAMCRO S.p.A. – (UL) Listed E475091 Type FPLR - 2 C 18AWG - Shielded - 105°C + BATCH + METER

**MARKING**

---

**ELECTRICAL DATA**

**Insulation Resistance @ 20°C:**
> 25 MOhm*Km

**Test Voltage Core-Core:**
2000 V

**Test Voltage Core-Screen:**
2000 V

**Mutual Capacitance:**
< 150 nF/km

**Inductance:**
< 1 mH/km

**Operating Voltage:**
300 V

---

**CHARACTERISTICS**

- Fire Resistant
- Min. Bending Radius
  8 x cable diameter
- Low Smoke Halogen Free
## Screened Version

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAR0204HFOCH-UL-FA</td>
<td>2x20AWG</td>
<td>3.3</td>
<td>20</td>
<td>34.0</td>
</tr>
<tr>
<td>SAR0203HFOCH-UL-FA</td>
<td>2x18AWG</td>
<td>3.8</td>
<td>27</td>
<td>21.4</td>
</tr>
<tr>
<td>SAR0202HFOCH-UL-FA</td>
<td>2x16AWG</td>
<td>4.1</td>
<td>38</td>
<td>13.5</td>
</tr>
<tr>
<td>SAR0201HFOCH-UL-FA</td>
<td>2x14AWG</td>
<td>5.7</td>
<td>70</td>
<td>8.5</td>
</tr>
<tr>
<td>SAR0251HFOCH-UL-FA</td>
<td>2x12AWG</td>
<td>6.5</td>
<td>90</td>
<td>5.3</td>
</tr>
</tbody>
</table>

## Unscreened Version

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSR0204HFOCH-UL-FA</td>
<td>2x20AWG</td>
<td>3.5</td>
<td>22</td>
<td>34.0</td>
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<tr>
<td>SSR0203HFOCH-UL-FA</td>
<td>2x18AWG</td>
<td>3.9</td>
<td>29</td>
<td>21.4</td>
</tr>
<tr>
<td>SSR0202HFOCH-UL-FA</td>
<td>2x16AWG</td>
<td>4.2</td>
<td>35</td>
<td>13.5</td>
</tr>
<tr>
<td>SSR0201HFOCH-UL-FA</td>
<td>2x14AWG</td>
<td>5.8</td>
<td>75</td>
<td>8.5</td>
</tr>
<tr>
<td>SSR0251HFOCH-UL-FA</td>
<td>2x12AWG</td>
<td>6.6</td>
<td>92</td>
<td>5.3</td>
</tr>
</tbody>
</table>
### CONSTRUCTION

**Formation:**
Plain annealed copper wire, Solid

**Insulation:**
Hi Temperature Polyvinylchloride - PVC HT 105°C

**Wrapping:**
at least 1 layer of plastic tape 0,023 mm

**Collective Screen:**
0,026 mm Aluminium / PETP tape over copper drain wire

**Inner Sheath:**
High Performance Polyvinyl chloride - Hi-PVC

**Armour:**
Galvanized steel wire armour - SWA

**Outer Sheath:**
High Performance Polyvinyl chloride - Hi-PVC

**Colour Outer Sheath:**
Red

### STANDARD REFERENCES

- UL 1424 (FPRL Type)
- NEC Article 760
- NEC Article 725
- UL 1666
- ASTM D 1329
- NF C 32-020
- IRAM IAP
- EN 50266-2
- IEC 60332-1
- IEC 60332-3

### TEMPERATURE RANGE

**During Operation:**
-30°C up to +105°C

**During Installation:**
-5°C up to +50°C

### CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E475091 Type FPLR - 2 C 18AWG - Shielded - 105°C + BATCH + METER

### ELECTRICAL DATA

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation Resistance @ 20°C</td>
<td>&gt; 25 MOhm*Km</td>
</tr>
<tr>
<td>Test Voltage Core-Core</td>
<td>2000 V</td>
</tr>
<tr>
<td>Test Voltage Core-Screen</td>
<td>2000 V</td>
</tr>
<tr>
<td>Mutual Capacitance</td>
<td>&lt; 150 nF/km</td>
</tr>
<tr>
<td>Inductance</td>
<td>&lt; 1 mH/km</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>300 V</td>
</tr>
</tbody>
</table>

### CHARACTERISTICS

- Fire Resistant
- Min. Bending Radius 8 x cable diameter
- Low Smoke Halogen Free
### Screened Version

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAR0204AFOCH-UL-FA</td>
<td>2x20AWG</td>
<td>7.9</td>
<td>30</td>
<td>34.0</td>
</tr>
<tr>
<td>SAR0203AFOCH-UL-FA</td>
<td>2x18AWG</td>
<td>8.4</td>
<td>41</td>
<td>21.4</td>
</tr>
<tr>
<td>SAR0202AFOCH-UL-FA</td>
<td>2x16AWG</td>
<td>8.7</td>
<td>57</td>
<td>13.5</td>
</tr>
<tr>
<td>SAR0201AFOCH-UL-FA</td>
<td>2x14AWG</td>
<td>10.3</td>
<td>105</td>
<td>8.5</td>
</tr>
<tr>
<td>SAR0251AFOCH-UL-FA</td>
<td>2x12AWG</td>
<td>11.1</td>
<td>135</td>
<td>5.3</td>
</tr>
</tbody>
</table>

### Unscreened Version

<table>
<thead>
<tr>
<th>RAMCRO CODE</th>
<th>FORMATION [n° x mm²]</th>
<th>OUTER DIAMETER [mm]</th>
<th>WEIGHT [kg/km]</th>
<th>MAX RESISTANCE AT 20°C [Ohm/km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSR0204AFOCH-UL-FA</td>
<td>2x20AWG</td>
<td>8.1</td>
<td>33</td>
<td>34.0</td>
</tr>
<tr>
<td>SSR0203AFOCH-UL-FA</td>
<td>2x18AWG</td>
<td>8.5</td>
<td>44</td>
<td>21.4</td>
</tr>
<tr>
<td>SSR0202AFOCH-UL-FA</td>
<td>2x16AWG</td>
<td>8.8</td>
<td>52</td>
<td>13.5</td>
</tr>
<tr>
<td>SSR0201AFOCH-UL-FA</td>
<td>2x14AWG</td>
<td>10.4</td>
<td>113</td>
<td>8.5</td>
</tr>
<tr>
<td>SSR0251AFOCH-UL-FA</td>
<td>2x12AWG</td>
<td>11.2</td>
<td>138</td>
<td>5.3</td>
</tr>
</tbody>
</table>
These Fiber Optic cables can incorporate up to 24 single mode fibers. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial or latched installations. Comply with IEC 60332-3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively.

**CONSTRUCTION**

**Fibres:**
Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications color coded for easy identification

**Tubes:**
PBT tube.

**Filling:**
The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

**Tubes Fillers:**
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

**Armouring:**
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

**Sheath:**
A UV resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

**Rip cords:**
laid under the steel tape to facilitate the jacket removal.

**IDENTIFICATION OF FIBER**

**STANDARD REFERENCES**

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014
MULTI MODE OM3 50/125 μm - 50/125 μm - 62.5/125 μm

These Fiber Optic cables can incorporate up to 24 single mode fibers. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial or latched installations. Comply with IEC 60332-3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively.

CONSTRUCTION

Fibres:
Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications color coded for easy identification

Tubes:
PBT tube.

Filling:
The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

Tubes Filles:
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

Sheath:
UV resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Ripcords:
laid under the steel tape to facilitate the jacket removal.

CONSTRUCTION

Fibres:
Up to 432 optical single mode fibers color coded for easy identification

Tubes:
PBT tube he tubes are SZ stranded around a dielectric central member

Filling:
The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

Tubes Filles:
Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

Sheath:
UV resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Ripcords:
laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBER

STANDARD REFERENCES

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014
This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Karen Coull 18 September 2018 27 October 2003
Signed for BRE Global Ltd. Certification Scheme Manager Date of Issue Date of First issue

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Certificate of Product Approval
Certificate Number: 568a Issue: 15

RAMCRO S.p.A.
Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB® mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s): Ramfirecro-F3 FIRE PLANET 568a/02

Standard(s) (see Appendix for details):
- BS 6387:2013
- EN 60754-1:2014
- EN 61034-2:2005
- EN 50200:2015 (Class PH60 & PH120)

Appendix to Certificate No: 568a
RAMCRO S.p.A.

Product name: Ramfirecro-F3 FIRE PLANET

<table>
<thead>
<tr>
<th>Nominal cross</th>
<th>Core Construction</th>
<th>BS 6387</th>
<th>EN 02756-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 (1)</td>
<td>C, W, Z</td>
<td>≥0.5% HC</td>
<td></td>
</tr>
<tr>
<td>1.5 (1)</td>
<td>C, W, Z</td>
<td>≥0.5% HC</td>
<td></td>
</tr>
<tr>
<td>2.5 (1)</td>
<td>C, W, Z</td>
<td>≥0.5% HC</td>
<td></td>
</tr>
<tr>
<td>4 (1)</td>
<td>C, W, Z</td>
<td>≥0.5% HC</td>
<td></td>
</tr>
</tbody>
</table>

Uo/U 300/500V
Notes:
1. Stranded conductors only.
2. Solid conductor only.

Karen Coull 18 September 2018 27 October 2003
Signed for BRE Global Ltd. Certification Scheme Manager Date of Issue Date of First issue

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STANDARD FIRE SUN
BS 7629-1:2008
Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath
Certificate of Product Approval
Certificate Number: 568d Issue: 06

RAMCRO S.p.A
Via Marzorati 15
20014 Nerviano MI
ITALY

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s) Cable Types as listed below:
Ramfirecro-F3 FIRE SAFE
See Certificate Appendix for details

Standard(s) (see Appendix for details)
IEC 60331-21:1999
EN 50267-2-1:1999
EN 61034-2:2005

Notes:
1. Nominal CSA of conductor (mm²)
2. Core Construction (excluding drain wire and earth)

- 1.0(1) 2, 3 & 4 Complies <0.5% HCI >60%
- 1.5(1) 2, 3 & 4 Complies <0.5% HCI >60%
- 2.5(1) 2, 3 & 4 Complies <0.5% HCI >60%

Certificate No: 568d Issue: 06

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Karen Coull 20 September 2017 01 August 2009
Signed for BRE Global Ltd. Certification Scheme Manager Date of Issue Date of First Issue

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Product(s)
Standard(s) (see Appendix for details)
Cable Types as listed below:
Ramfirecro-F3 FIRE SAFE
See Certificate Appendix for details

IEC 60331-21:1999
EN 50267-2-1:1999
EN 61034-2:2005

Notes:
1. Nominal CSA of conductor (mm²)
2. Core Construction (excluding drain wire and earth)

- 1.0(1) 2, 3 & 4 Complies <0.5% HCI >60%
- 1.5(1) 2, 3 & 4 Complies <0.5% HCI >60%
- 2.5(1) 2, 3 & 4 Complies <0.5% HCI >60%
Certificate of Product Approval
Certificate Number: 568e
Issue: 06

RAMCRO S.p.A.
Via Marzorati
20014 Nerviano
Milan
Italy

Product(s)
Cables: Typical are listed below; main features are listed on verso.

Standard(s) (see Appendix for details)
BS 6387:2013 Cat. C-W-Z

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Steel Wire Armour, LSZH-Sheath

LPCB 568e/01

Certificate No: 568e
Issue: 06

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403-0341/06

Page 1 of 2

Notes:
1. Class 5 stranded conductor only.
2. The fire endurance and FIRE GROUND range with diameters greater than 20mm were tested in accordance with clause 17.6.2 and annex of BS 6387:2013.
3. Tested to be fire retardant to EN 60332-3-24.
**Certificate of Product Approval**

Certificate Number: 568f  
Issue: 04

**RAMCRO S.p.A**

Via Marzorati 14  
20015 Nerviano MI  
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

**Product(s)**

Cable Types as listed below: RAMFIRECRO-F3 ENHANCED FIRE MOON

**Standard(s) (see Appendix for details)**

<table>
<thead>
<tr>
<th>Product(s)</th>
<th>Standard(s) (see Appendix for details)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAMFIRECRO-F3 ENHANCED FIRE MOON</td>
<td>EN 50200:2015 (Class PH120)</td>
</tr>
<tr>
<td></td>
<td>IEC 60754-1:2014</td>
</tr>
</tbody>
</table>

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Karen Coull  
01 September 2017  
10 January 2017

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F: +44 (0)1923 664603  
E: enquiries@breglobal.com
Certificate of Product Approval
Certificate Number: 568g  Issue: 01

RAMCRO S.p.A.
Via Marzorati 15
20014 Nerviano
Milan
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)
Cable Types as listed below:
RAMFIRECRO-F3
Data Cable Category 6
See Certificate Appendix for details

Standard(s) (see Appendix for details)
IEC 60331-21:1999
IEC 60332-1-2:2004
EN 61034-2:2005
EN 60754-1:2014

Notes:
1. Solid conductors only.
2. The Data Cable Category 6 met the requirements of IEC 60331-21:1999 when tested at a temperature of 750°C for a duration of 90mins + 15mins cooling time at a voltage rating of 300V.

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Tony Baker 26 July 2017 26 July 2017
Signed for LPCB Certification Scheme Manager Date of Issue Date of First issue

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Product name
LPCB Ref.
No.
RAMFIRECRO-F3
568g/01

Data Cable Category 6
Nominal diameter of conductor (mm)
Core Construction (excluding drain wire and earth)
IEC 60331-21
IEC 60332-1-2
EN 61034-2
EN 60754-1

0.65(1) 4 Pairs Complies Complies >60% <0.5% HCI
Uo/U 300/500V

Notes:
1. Solid conductors only.
2. The Data Cable Category 6 met the requirements of IEC 60331-21:1999 when tested at a temperature of 750°C for a duration of 90mins + 15mins cooling time at a voltage rating of 300V.
FIRE COMET
EN 50200:2015 Class PH 30
Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath
FIRE STAR

LPCB 568j/01

BS 8434-2:2003+A2:2009 (120 min.)
Multi-Core, Solid or Stranded CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath
Cavi resistenti al fuoco a bassa tossicità e corrosività (FG4OHM1)

for the following products:
Cables resistant to fire with low toxicity and corrosivity (FG4OHM1)

Per il marchio:
For the licence to use the mark:

RAMCRO SPA
VIA MARZORATI 15
20014 NERVIANO MI
IT - Italy

Il presente certificato è soggetto alle condizioni previste dal Regolamento "MARCHI IMQ - REGOLAMENTO PER LA CERTIFICAZIONE DI PRODOTTI" (Annesso I) e dalle disposizioni dettagliate descritte nel Foglio A allegato al presente certificato.

This certificate is subjected to the conditions foreseen by Rules "IMQ MARKS - RULES for product certification" and to the details described in the annex to this certificate.

CA01.00716
SN.R000FQ
CERTIFICATE OF COMPLIANCE

Certificate Number: 20150827-E475091
Report Reference: E475091-20150827
Issue Date: 2015-AUGUST-27

Issued to: RAMCRO SPA
VIA MARZORATI 15
20014 NERVIANO MILANO ITALY

This is to certify that representative samples of POWER-LIMITED FIRE ALARM CABLE
Power-Limited Fire-Alarm Circuit Cable, Type FPLR

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 1424 STANDARD FOR CABLES FOR POWER-LIMITED FIRE-ALARM CIRCUITS

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL’s Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.
LPCB 568h/01

Certificate of Product Approval
Certificate Number: 568h   Issue: 01

RAMCRO S.p.A.
Via Marzorati 15
20014 Nerviano
Milan
Italy

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Tony Baker 26 July 2017 26 July 2017

Signed for LPCB Certification Scheme Manager Date of Issue Date of First issue

This certificate and appendix remain the property of BRE Global Ltd and is issued subject to terms and conditions (for details visit www.redbooklive.com/terms).

To check the validity of this certificate and appendix please visit www.redbooklive.com/check, scan the QR tag or contact us.

LPCB is part of BRE Global Ltd, Garston, Watford, WD25 9XX
T: +44 (0)333 321 8811  F: +44 (0)1923 664603  E: enquiries@breglobal.com

Certificate No: 568h   Issue: 01

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Notes:
1. The 6 FO Single Mode & 6 FO Multi Mode cables met the requirements of IEC 60331-25:1999 when tested at a temperature of 750°C for a duration of 90mins + 15mins cooling time.