

Manufacturer's Instructions for Lifeline® RC90 and RC90 LSZH Jacketed: One Hour and Two-Hour Fire-Resistive Cables – ULC-S139



Technical Information Sheet #400CA

This Technical Information Sheet (TIS) covers Lifeline® RC90 and RC90 LSZH Jacketed Single and Multi-Conductor: ULC Approved One-Hour and Two-Hour Fire-Resistive Power Cables.

Applications

Lifeline® RC90 Cables have been qualified and listed to the demanding requirements of ULC-S139, *Standard for Fire Test for Circuit Integrity of Fire-Resistive Cables*, and are CSA Listed Type RC90.

Lifeline® RC90 Cables meet industry code requirements of the National Building Code of Canada Articles 3.2.6 and 3.2.7.10, NFPA 70, NFPA 72, NFPA 101, NFPA 130, and NFPA 502 for fire resistance according to ULC-S139 standard when installed per applicable codes, including federal, state, local and municipal rules, laws and regulations, as well as Electrical Circuit Integrity Systems Certified for Canada - 51 and 51A (FHIT7.51 and FHIT7.51A). Note that Authorities Having Jurisdiction (AHJ) should be consulted for approval prior to cable purchase and installation.

Requirements

1) Codes / Laws / Regulations

Selection and installation compliance is dependent on the applicable issue of any code or addendum that covers the use of Lifeline® RC90, Fire-Resistive Cables.

2) ULC Electrical Circuit Integrity System #51 and #51A (FHIT7.51 and FHIT7.51A)

The most current listing details and supporting information applicable to Lifeline® RC90 Cables' circuit integrity rating (CIR) classification can be obtained from UL's UL Product IQ website by searching for keywords: FHIT7.51 or FHIT7.51A.

Where:

FHIT7.51 covers single-conductor and multi-conductor cables with 2-hour CIR at 600 volts utilization and includes optional taped splice for conductor sizes 2AWG and larger. Refer to TIS 403CA for splice installation instructions.

FHIT7.51A covers single-conductor and multi-conductor cables with 1-hour CIR at 600 volts utilization and optional ceramic stand-off splice for use with conductor sizes 14AWG to 350MCM. Refer to TIS 402CA for splice installation instructions.

3) Manufacturer's Instructions – TIS #400CA

All Lifeline® RC90 Cable products are covered by specific datasheets and supporting Technical Information Sheets that provide the user with information to properly select and install Lifeline® RC90 Cables in a reliable and trouble-free manner. Do not hesitate to contact your Lifeline® RC90 Cable representative should you have any questions.

Installation Parameters

1) Cable: Lifeline® RC90

Code compliant cable classified as one-hour or two-hour fire-resistive according to ULC-S139 when installed in accordance with FHIT7.51 or FHIT7.51A, the Canadian Electric Code (CEC), and all applicable federal, state, and municipal regulations.

2) Securing and Supporting Spacing

Code compliant fire-resistive installation in both horizontal and vertical orientations requires the cable be secured and supported at intervals not exceeding four feet (48 inches), at each side cable bends, and within one foot (12 inches) of cable connector terminations. Noted exception: support spacing described above is in lieu of support spacing allowed in the NEC and CEC, and is required for compliant two-hour fire-resistive installation.

3) Supports and Fasteners

Cables shall be secured to supports using steel two-piece single-bolt pipe clamps. Supports shall be steel components or other fire rated components (described in FHIT7.51 and FHIT7.51A) proven to meet the required fire resistance ratings. No substitute components are allowed.

4) Cable Bending

The minimum bending radius for Lifeline® RC90 cable is defined in two conditions.

1. The minimum pulling radius is 10 times the cable diameter when the cable is under tension and is being pulled around bends during installation (Example: if cable diameter is 1 inch, the minimum bend radius is 10 inches, and minimum diameter of sheaves or rollers used during installation is 20 inches).
2. The minimum training radius is 7 times the cable diameter when the cable is not under tension and when the cable is in final installation position. During installation and handling, the bend radius should be kept as large as possible using a sheave with the full minimum bending radius of the cable.

5) Cable Pulling and Handling

Proper cable pulling and handling techniques are essential to ensure a damage free installation. The Lifeline® RC90 Installation Manual (TIS #401CA) describes the recommended best practices.

Additional Features Available

1) Optional Outer Jacket

A corrosion resistant outer jacket is available over copper armor for applications with destructive corrosive conditions.

2) Splices

A two-hour and one-hour ULC approved fire resistive splices are available for Lifeline RC90 and Lifeline RC90 LSZH Cables. See FHIT7.51 and FHIT7.51A and contact your Lifeline® RC90 Cable representative for additional instructions.

Lifeline® RC90: One-Hour and Two-Hour Fire Resistive Multiconductor Cables – ULC-S139



Fire Resistive Cable for Survivability in a Fire



APPLICATIONS

Lifeline® RC90 fire resistive cables were designed to meet and have successfully passed one-hour and two-hour fire rating certification tests per ULC-S139, *Standard for Fire Test for Circuit Integrity of Fire-Resistive Cables* and are classified in Electrical Circuit Integrity Systems Certified for Canada (FHIT7) No. 51 and No. 51A

Lifeline® RC90 Cables can be used in the following applications to provide survivability during a fire:

- Tall Buildings
- Fire Pumps
- Emergency Feeder Cables
- Ventilating Fans
- Stairwell Pressurization
- Exit Lighting
- Elevators / OEO
- Emergency lighting for roadway and transit tunnels when cables include optional LSZH jacket over armor

Lifeline® RC90 Cables are preferred over Mineral Insulated (MI) cables, concrete encasement or the construction of fire rated assemblies based on the facts that Lifeline® RC90 Cables are less costly and easier to install for many applications.

Fire resistive cables are required per National Building Code of Canada Articles 3.2.6 and 3.2.7.10, NFPA 70/NEC, Articles 517, 695, 700, 708, 728 and 760 as well as NFPA 72 and NFPA 101.



RoHS
COMPLIANT

SPECIFICATIONS & RATINGS

- Listed to CSA C22.2 No.123 *Metal Sheathed Cables*, as the following type:
 - Type RC90 600 Volt, Rated 90°C
- For Wet Locations per CEC Rule 12-702
- For Cable Tray Use IEEE 1202/ FT4 Rated, STI Limited Smoke
- Classified to ULC-S139, *Standard for Fire Test for Circuit Integrity of Fire-Resistive Cables*, with one-hour and two-hour Circuit Integrity Rating (CIR)
- Electrical Circuit Integrity System (FHIT7) No. 51 of the UL Fire Resistance Directory with 2-hour CIR at 600 volts utilization covers cable constructions in table below and optional taped splice for conductor sizes 2AWG and larger.
- Electrical Circuit Integrity System (FHIT7) No. 51A of the UL Fire Resistance Directory with 1-hour FRR at 600 volts utilization, covers multi-conductor cable constructions in the table below and optional ceramic stand-off splice for conductor sizes 14AWG to 350MCM.
- NFPA 70, NFPA 72, NFPA 101 compliant
- Corrugated Copper Armor meets Equipment Bonding Conductor requirements of CEC Rule 10-610

DESIGN PARAMETERS

CONDUCTORS: Bare stranded copper, 14 AWG through 600 kcmil

INSULATION: Ceramifiable Silicone Zero Halogen (LSZH)

INNER BINDER JACKET: Ceramifiable Silicone Zero Halogen (LSZH)

ARMOR: Continuously Welded and Corrugated Copper

IDENTIFICATION:

ORIGIN USA PRYSMIAN MA P/N [#####] [X]/C [Y]AWG [Z]mm²
LIFELINE® (cUL) RC90 600V SILICONE -40C (ULC) S139 CIR 2HR
FHIT7 51¹ 600V UTILIZATION or CIR 1HR FHIT7 51A² 600V UTILIZATION
([mm]/[yr]) (SEQUENTIAL FOOTAGE)

Notes: [#] is cable part number

[X] is the number of conductors

[Y] is cable size in AWG or kcmil

[Z] is cable size in mm²

¹ CIR 2HR FHIT7#51 includes taped splice for cables with conductor sizes 2AWG to 600MCM

² CIR 1HR FHIT7#51A applies ceramic stand-off splice for cables with 14AWG to 350MCM conductors

Lifeline® RC90: One-Hour and Two-Hour Fire Resistant Multiconductor Cables – ULC-S139



Fire Resistant Cable for Survivability in a Fire

LIFELINE® Part Number	Conductor Size AWG /MCM	Number of Conductors	Nominal Core Diameter (in)	Nominal Armor Diameter (in)	Ampacity* 75°C Amps	Ampacity* 90°C Amps
LMC03014C	14AWG	3	0.55	0.85	20**	25**
LMC05014C	14AWG	5	0.66	0.96	20**	25**
LMC02012C	12AWG	2	0.56	0.85	25**	30**
LMC03012C	12AWG	3	0.59	0.90	25**	30**
LMC04012C	12AWG	4	0.64	0.96	25**	30**
LMC05012C	12AWG	5	0.70	0.96	25**	30**
LMC02010C	10AWG	2	0.61	0.85	35**	40**
LMC03010C	10AWG	3	0.64	0.96	35**	40**
LMC04010C	10AWG	4	0.70	0.96	35**	40**
LMC05010C	10AWG	5	0.77	1.08	35**	40**
LMC07010C	10AWG	7	0.85	1.27	35**	40**
LMC02008C	8AWG	2	0.70	0.96	50	55
LMC03008C	8AWG	3	0.75	1.08	50	55
LMC04008C	8AWG	4	0.82	1.20	50	55
LMC05008C	8AWG	5	0.90	1.27	50	55
LMC02006C	6AWG	2	0.78	1.08	65	75
LMC03006C	6AWG	3	0.83	1.20	65	75
LMC04006C	6AWG	4	0.91	1.27	65	75
LMC05006C	6AWG	5	1.00	1.35	65	75
LMC03004C	4AWG	3	0.95	1.35	85	95
LMC04004C	4AWG	4	1.04	1.35	85	95
LMC05004C	4AWG	5	1.15	1.57	85	95
LMC03003C	3AWG	3	1.00	1.35	100	115
LMC04003C	3AWG	4	1.11	1.40	100	115
LMC03002C	2AWG	3	1.07	1.40	115	130
LMC04002C	2AWG	4	1.18	1.57	115	130
LMC03001C	1AWG	3	1.24	1.77	130	145
LMC04001C	1AWG	4	1.37	1.77	130	145
LMC031/0C	1/0AWG	3	1.33	1.77	150	170
LMC041/0C	1/0AWG	4	1.47	1.83	150	170
LMC032/0C	2/0AWG	3	1.41	1.83	175	195
LMC042/0C	2/0AWG	4	1.56	1.98	175	195
LMC033/0C	3/0AWG	3	1.52	1.98	200	225
LMC043/0C	3/0AWG	4	1.69	2.15	200	225
LMC034/0C	4/0AWG	3	1.64	2.15	230	260
LMC044/0C	4/0AWG	4	1.82	2.27	230	260
LMC03250C	250MCM	3	1.81	2.27	255	290
LMC04250C	250MCM	4	2.00	2.48	255	290
LMC03350C	350MCM	3	2.04	2.48	310	350
LMC04350C	350MCM	4	2.26	2.73	310	350
LMC03400C	400MCM	3	2.13	2.73	335	380
LMC04400C	400MCM	4	2.37	2.79	335	380
LMC03500C	500MCM	3	2.31	2.79	380	430
LMC04500C	500MCM	4	2.57	3.08	380	430
LMC03600C	600MCM	3	2.54	3.08	420	475
LMC04600C	600MCM	4	2.83	3.35	420	475

* Ampacities are based on Table 2 of the Canadian Electrical Code (CEC) for 3 current carrying conductors at 30°C ambient.

** Overcurrent protection limitations per CEC Rule 14-104: (Subrule 2a) 14AWG – 15amps, (Subrule 2b) 12AWG – 20amps, (Subrule 2c) 10AWG – 30amps.

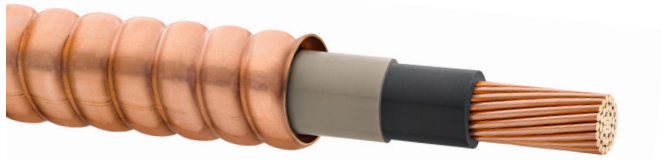
*** Refer to Table 5C of the Canadian Electrical Code (CEC) for more than 3 current-carrying conductors.

The above dimensions are approximate and subject to normal manufacturing tolerances. Information subject to change

Lifeline® RC90: One-Hour and Two-Hour Fire Resistive Single Conductor Cables – ULC-S139



Fire Resistive Cable for Survivability in a Fire



APPLICATIONS

Lifeline® RC90 fire-resistive single conductor cables were designed to meet and have successfully passed one-hour and two-hour fire rating certification tests per ULC-S139, *Standard for Fire Test for Circuit Integrity of Fire- Resistive Cables* and are classified in Electrical Circuit Integrity Systems Certified for Canada (FHIT7) No. 51 and No. 51A.

Lifeline® RC90 Single Conductor Cables can be used in the following applications to provide survivability during a fire:

- Tall Buildings
- Fire Pumps
- Emergency Feeder Cables
- Ventilating Fans
- Stairwell Pressurization
- Exit Lighting
- Elevators / OEO
- Emergency lighting for roadway and transit tunnels when cables include optional LSZH jacket over armor

Lifeline® RC90 Single Conductor Cables are preferred over Mineral Insulated (MI) cables, concrete encasement or the construction of fire rated assemblies based on the facts that Lifeline® RC90 Cables are less costly and easier to install for many applications.

Fire resistive cables are required per National Building Code of Canada Articles 3.2.6 and 3.2.7.10, NFPA 70/NEC, Articles 517, 695, 700, 708, 728 and 760 as well as NFPA 72 and NFPA 101.



RoHS
COMPLIANT

SPECIFICATIONS & RATINGS

- Listed to CSA C22.2 No. 123 *Metal Sheathed Cables*, as the following type:
 - Type RC90 600 Volt, Rated 90°C
- For Wet Locations per CEC Rule 12-702
- For Cable Tray Use IEEE 1202/ FT4 Rated, STI Limited Smoke
- Classified to ULC-S139, *Standard for Fire Test for Circuit Integrity of Fire- Resistive Cables*, with one-hour and two-hour Circuit Integrity Rating (CIR).
- Electrical Circuit Integrity System (FHIT7) No. 51 of the UL Fire Resistance Directory with 2-hour CIR at 600 volts utilization covers cable constructions in table below and optional taped splice.
- Electrical Circuit Integrity System (FHIT7) No. 51A of the UL Fire Resistance Directory with 1-hour FRR at 600 volts utilization, covers cable constructions in the table below and optional ceramic stand-off splice for conductor sizes up to 350MCM.²
- NFPA 70, NFPA 72, NFPA 101 compliant
- Corrugated Copper Armor meets Equipment Bonding Conductor requirements of CEC Rule 10-610

DESIGN PARAMETERS

CONDUCTORS: Bare stranded copper, 1/0 AWG through 750 kcmil

INSULATION: Ceramifiable Silicone Zero Halogen (LSZH)

INNER BINDER JACKET: Ceramifiable Silicone Zero Halogen (LSZH)

ARMOR: Continuously Welded and Corrugated Copper

IDENTIFICATION:

ORIGIN USA PRYSMIAN MA P/N [#####] 1/C [X]AWG [Y] mm²
LIFELINE® (cUL) RC90 600V SILICONE -40C (ULC) S139 CIR 2HR FHIT7 51¹ 600V UTILIZATION or CIR 1HR FHIT7 51A² 600V UTILIZATION ([mm]/[yr]) (SEQUENTIAL FOOTAGE)

Notes: [#] is cable part number

[X] is cable size in AWG or kcmil

[Y] is cable size in mm²

¹ CIR 2HR FHIT7#51 includes taped splice for cables with conductor sizes 1/0AWG to 750MCM

² CIR 1HR FHIT7#51A applies ceramic stand-off splice for cables with 1/0AWG to 350MCM conductors

Lifeline® RC90: One-Hour and Two-Hour Fire Resistive Single Conductor Cables – ULC-S139



Fire Resistive Cable for Survivability in a Fire

LIFELINE® Part Number	Conductor Size AWG /MCM	Number of Conductors	Nominal Core Diameter (in)	Nominal Armor Diameter (in)	Ampacity* 75°C Amps	Ampacity* 90°C Amps
LMC011/0C	1/0AWG	1	0.65	0.90	230	260
LMC012/0C	2/0AWG	1	0.69	0.96	265	300
LMC013/0C	3/0AWG	1	0.74	1.08	310	350
LMC014/0C	4/0AWG	1	0.80	1.20	360	405
LMC01250C	250MCM	1	0.87	1.27	405	455
LMC01300C	300MCM	1	0.93	1.27	445	500
LMC01350C	350MCM	1	0.98	1.35	505	570
LMC01400C	400MCM	1	1.03	1.40	545	615
LMC01500C	500MCM	1	1.11	1.57	620	700
LMC01600C	600MCM	1	1.22	1.77	690	780
LMC01750C	750MCM	1	1.32	1.77	785	885

* Ampacities are based on Table 1 of the Canadian Electrical Code (CEC) for single current carrying conductors at 30°C ambient. The above dimensions are approximate and subject to normal manufacturing tolerances. Information subject to change

Lifeline® RC90 LSZH: One-Hour and Two-Hour Fire Resistive Multiconductor Cables – ULC-S139



Fire Resistive Cable for Survivability in a Fire



APPLICATIONS

Lifeline® RC90 LSZH fire resistive cables were designed to meet and have successfully passed one-hour and two-hour fire rating certification tests per ULC-S139, *Standard for Fire Test for Circuit Integrity of Fire-Resistive Cables* and are classified in Electrical Circuit Integrity Systems Certified for Canada (FHIT7) No. 51 and No. 51A.

Lifeline® RC90 LSZH Cables can be used in the following applications to provide survivability during a fire:

- Emergency Feeder Cables
- Ventilating Fans
- Exit Lighting
- Emergency lighting and ventilation for roadway and transit tunnels

Lifeline® RC90 LSZH Cables are preferred over Mineral Insulated (MI) cables, concrete encasement or the construction of fire rated assemblies based on the facts that Lifeline® RC90 LSZH Cables are less costly and easier to install for many life safety fire resistive applications in roadway and tunnel environments with a LSZH jacket to protect against corrosion.

Fire resistive cables are required per National Building Code of Canada Articles 3.2.6 and 3.2.7.10, NFPA 70, Articles 517, 695, 700, 708, 728 and 760 as well as NFPA 72, NFPA 101, NFPA 130 and NFPA 502.



RoHS
COMPLIANT

SPECIFICATIONS & RATINGS

- Listed to CSA C22.2 No. 123 *Metal Sheathed Cables*, as the following type:
 - Type RC90 600 Volt, Rated 90°C
- For Wet Locations
- For Cable Tray Use IEEE 1202/ FT4 Rated, ST1 Limited Smoke
- Sunlight resistance
- Direct Burial
- Classified to ULC-S139, Standard for Fire Test for Circuit Integrity of Fire-Resistive Cables, with one-hour and two-hour Circuit Integrity Rating (CIR)
- Electrical Circuit Integrity System (FHIT7) No. 51 of the UL Fire Resistance Directory with 2-hour CIR at 600 volts utilization covers cable constructions in table below and optional taped splice for conductor sizes 2AWG and larger.
- Electrical Circuit Integrity System (FHIT7) No. 51A of the UL Fire Resistance Directory with 1-hour FRR at 600 volts utilization, covers multi-conductor cable constructions in the table below and optional ceramic stand-off splice for conductor sizes 14AWG to 350MCM.
- NFPA 70, NFPA 72, NFPA 101, NFPA 130, NFPA 502 compliant
- Corrugated Copper Armor meets Equipment Bonding Conductor requirements of CEC Rule 10-610

DESIGN PARAMETERS

CONDUCTORS: Bare stranded copper, 14 AWG through 600 kcmil

INSULATION: Ceramifiable Silicone Zero Halogen (LSZH)

INNER BINDER JACKET: Ceramifiable Silicone Zero Halogen (LSZH)

ARMOR: Continuously Welded and Corrugated Copper

JACKET: Thermoplastic Flame Resistant LSZH Jacket

IDENTIFICATION:

ORIGIN USA PRYSMIAN MA P/N [#####] [X]/C [Y]AWG [Z]mm²
LIFELINE® (cUL) RC90 600V SILICONE -40C SUN RES FT4-ST1 (ULC)
S139 CIR 2HR FHIT7#51¹ 600V UTILIZATION or CIR 1HR FHIT7#51A² 600V
UTILIZATION ([mm]/[yr]) (SEQUENTIAL FOOTAGE)

Notes: [#] is cable part number

[X] is the number of conductors

[Y] is cable size in AWG or kcmil

[Z] is cable size in mm²

¹ CIR 2HR FHIT7#51 includes taped splice for cables with conductor sizes 2AWG to 600MCM

² CIR 1HR FHIT7#51A applies ceramic stand-off splice for cables with 14AWG to 350MCM conductors

Lifeline® RC90 LSZH: One-Hour and Two-Hour Fire Resistive Multiconductor Cables – ULC-S139



Fire Resistive Cable for Survivability in a Fire

LIFELINE® Part Number	Conductor Size AWG /MCM	Number of Conductors	Nominal Core Diameter (in)	Nominal Armor Diameter (in)	Nominal Jacket Diameter (in)	Ampacity* 75°C Amps	Ampacity* 90°C Amps
LMCJ03014C	14AWG	3	0.55	0.85	0.95	20**	25**
LMCJ05014C	14AWG	5	0.66	0.96	1.06	20**	25**
LMCJ02012C	12AWG	2	0.56	0.85	0.95	25**	30**
LMCJ03012C	12AWG	3	0.59	0.90	1.00	25**	30**
LMCJ04012C	12AWG	4	0.64	0.96	1.06	25**	30**
LMCJ05012C	12AWG	5	0.70	0.96	1.06	25**	30**
LMCJ02010C	10AWG	2	0.61	0.85	0.95	35**	40**
LMCJ03010C	10AWG	3	0.64	0.96	1.06	35**	40**
LMCJ04010C	10AWG	4	0.70	0.96	1.06	35**	40**
LMCJ05010C	10AWG	5	0.77	1.08	1.18	35**	40**
LMCJ07010C	10AWG	7	0.85	1.27	1.37	35**	40**
LMCJ02008C	8AWG	2	0.70	0.96	1.06	50	55
LMCJ03008C	8AWG	3	0.75	1.08	1.18	50	55
LMCJ04008C	8AWG	4	0.82	1.20	1.30	50	55
LMCJ05008C	8AWG	5	0.90	1.27	1.37	50	55
LMCJ02006C	6AWG	2	0.78	1.08	1.18	65	75
LMCJ03006C	6AWG	3	0.83	1.20	1.30	65	75
LMCJ04006C	6AWG	4	0.91	1.27	1.37	65	75
LMCJ05006C	6AWG	5	1.00	1.35	1.45	65	75
LMCJ03004C	4AWG	3	0.95	1.35	1.45	85	95
LMCJ04004C	4AWG	4	1.04	1.35	1.45	85	95
LMCJ05004C	4AWG	5	1.15	1.57	1.69	85	95
LMCJ03003C	3AWG	3	1.00	1.35	1.45	100	115
LMCJ04003C	3AWG	4	1.11	1.40	1.50	100	115
LMCJ03002C	2AWG	3	1.07	1.40	1.50	115	130
LMCJ04002C	2AWG	4	1.18	1.57	1.69	115	130
LMCJ03001C	1AWG	3	1.24	1.77	1.89	130	145
LMCJ04001C	1AWG	4	1.37	1.77	1.89	130	145
LMCJ031/0C	1/0AWG	3	1.33	1.77	1.89	150	170
LMCJ041/0C	1/0AWG	4	1.47	1.83	1.95	150	170
LMCJ032/0C	2/0AWG	3	1.41	1.83	1.95	175	195
LMCJ042/0C	2/0AWG	4	1.56	1.98	2.10	175	195
LMCJ033/0C	3/0AWG	3	1.52	1.98	2.10	200	225
LMCJ043/0C	3/0AWG	4	1.69	2.15	2.27	200	225
LMCJ034/0C	4/0AWG	3	1.64	2.15	2.27	230	260
LMCJ044/0C	4/0AWG	4	1.82	2.27	2.42	230	260
LMCJ03250C	250MCM	3	1.81	2.27	2.42	255	290
LMCJ04250C	250MCM	4	2.00	2.48	2.63	255	290
LMCJ03350C	350MCM	3	2.04	2.48	2.63	310	350
LMCJ04350C	350MCM	4	2.26	2.73	2.88	310	350
LMCJ03400C	400MCM	3	2.13	2.73	2.88	335	380
LMCJ04400C	400MCM	4	2.37	2.79	2.94	335	380
LMCJ03500C	500MCM	3	2.31	2.79	2.94	380	430
LMCJ04500C	500MCM	4	2.57	3.08	3.25	380	430
LMCJ03600C	600MCM	3	2.54	3.08	3.25	420	475
LMCJ04600C	600MCM	4	2.83	3.35	3.52	420	475

* Ampacities are based on Table 2 of the Canadian Electrical Code (CEC) for 3 current carrying conductors at 30°C ambient.

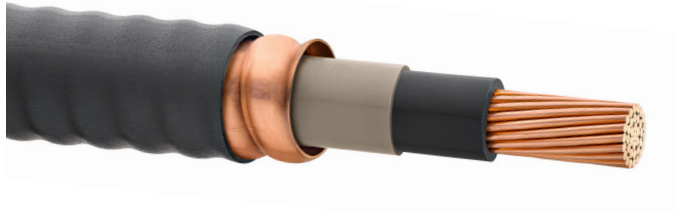
** Overcurrent protection limitations per CEC Rule 14-104: (Subrule 2a) 14AWG – 15amps, (Subrule 2b) 12AWG – 20amps, (Subrule 2c) 10AWG – 30amps.

*** Refer to Table 5C of the Canadian Electrical Code (CEC) for more than 3 current-carrying conductors.

The above dimensions are approximate and subject to normal manufacturing tolerances. Information subject to change

Lifeline® RC90 LSZH: One-Hour and Two-Hour Fire Resistive Single Conductor Cables – ULC-S139

Fire Resistive Cable for Survivability in a Fire



APPLICATIONS

Lifeline® RC90 LSZH fire-resistive single conductor cables were designed to meet and have successfully passed one-hour and two-hour fire rating certification tests per ULC-S139, *Standard for Fire Test for Circuit Integrity of Fire- Resistive Cables* and are classified in Electrical Circuit Integrity Systems Certified for Canada (FHIT7) No. 51 and No. 51A.

Lifeline® RC90 LSZH Single Conductor Cables can be used in the following applications to provide survivability during a fire:

- Emergency Feeder Cables
- Ventilating Fans
- Exit Lighting
- Emergency lighting and ventilation for roadway and transit tunnels

Lifeline® RC90 LSZH Cables are preferred over Mineral Insulated (MI) cables, concrete encasement or the construction of fire rated assemblies based on the facts that Lifeline® RC90 LSZH Cables are less costly and easier to install for many life safety fire resistive applications in roadway and tunnel environments with a LSZH jacket to protect against corrosion.

Fire resistive cables are required per National Building Code of Canada Articles 3.2.6 and 3.2.7.10, NFPA 70, Articles 517, 695, 700, 708, 728 and 760 as well as NFPA 72, NFPA 101, NFPA 130 and NFPA 502.



RoHS
COMPLIANT

SPECIFICATIONS & RATINGS

- Listed to CSA C22.2 No. 123 *Metal Sheathed Cables*, as the following type:
 - Type RC90 600 Volt, Rated 90°C
- For Wet Locations
- For Cable Tray Use IEEE 1202/ FT4 Rated, ST1 Limited Smoke
- Sunlight Resistance
- Direct Burial
- Classified to ULC-S139, Standard for Fire Test for Circuit Integrity of Fire- Resistive Cables, with one-hour and two-hour Circuit Integrity Rating (CIR)
- Electrical Circuit Integrity System (FHIT7) No. 51 of the UL Fire Resistance Directory with 2-hour CIR at 600 volts utilization covers cable constructions in table below and optional taped splice.
- Electrical Circuit Integrity System (FHIT7) No. 51A of the UL Fire Resistance Directory with 1-hour FRR at 600 volts utilization, covers cable constructions in the table below and optional ceramic stand-off splice for conductor sizes up to 350MCM.
- NFPA 70, NFPA 72, NFPA 101, NFPA 130, NFPA 502 compliant
- Corrugated Copper Armor meets Equipment Bonding Conductor requirements of CEC Rule 10-610.

DESIGN PARAMETERS

CONDUCTORS: Bare stranded copper, 1/0 AWG through 750 kcmil

INSULATION: Ceramifiable Silicone Zero Halogen (LSZH)

INNER BINDER JACKET: Ceramifiable Silicone Zero Halogen (LSZH)

ARMOR: Continuously Welded and Corrugated Copper

JACKET: Thermoplastic Flame Resistant LSZH Jacket

IDENTIFICATION:

ORIGIN USA PRYSMIAN MA P/N [#####] 1/C [X]AWG [Y] mm²
LIFELINE® (cUL) RC90 600V SILICONE -40C SUN RES FT4-ST1 (ULC)
S139 CIR 2HR FHIT7#51¹ 600V UTILIZATION or CIR 1HR FHIT7 51A² 600V
UTILIZATION (MONTH/YEAR) ([mm]/[yr]) (SEQUENTIAL FOOTAGE)

Notes: [#] is cable part number

[X] is cable size in AWG or kcmil

[Y] is cable size in mm²

¹ CIR 2HR FHIT7#51 includes taped splice for cables with conductor sizes 1/0AWG to 750MCM

² CIR 1HR FHIT7#51A applies ceramic stand-off splice for cables with 1/0AWG to 350MCM conductors

Lifeline® RC90 LSZH: One-Hour and Two-Hour Fire Resistive Single Conductor Cables – ULC-S139



Fire Resistive Cable for Survivability in a Fire

LIFELINE® Part Number	Conductor Size AWG /MCM	Number of Conductors	Nominal Core Diameter (in)	Nominal Armor Diameter (in)	Nominal Jacket Diameter (in)	Ampacity* 75°C Amps	Ampacity* 90°C Amps
LMCJ011/0C	1/0AWG	1	0.65	0.90	1.00	230	260
LMCJ012/0C	2/0AWG	1	0.69	0.96	1.06	265	300
LMCJ013/0C	3/0AWG	1	0.74	1.08	1.18	310	350
LMCJ014/0C	4/0AWG	1	0.80	1.20	1.30	360	405
LMCJ01250C	250MCM	1	0.87	1.27	1.37	405	455
LMCJ01300C	300MCM	1	0.93	1.27	1.37	445	500
LMCJ01350C	350MCM	1	0.98	1.35	1.45	505	570
LMCJ01400C	400MCM	1	1.03	1.40	1.50	545	615
LMCJ01500C	500MCM	1	1.11	1.57	1.69	620	700
LMCJ01600C	600MCM	1	1.22	1.77	1.89	690	780
LMCJ01750C	750MCM	1	1.32	1.77	1.89	785	885

* Ampacities are based on Table 1 of the Canadian Electrical Code (CEC) for single current carrying conductors at 30°C ambient.

The above dimensions are approximate and subject to normal manufacturing tolerances. Information subject to change