

Brand Rex
BRAND

Polyrad® XT

POWERING YOUR
MASS TRANSIT
CABLING CONNECTIONS



Serving the Rapid Transit & Locomotive Markets

- Power Cables
- Head-End Power Cables
- Control Cables
- Instrumentation Cables
- Signal Cables
- Electronic Cables
- Data Communication Cables
- Fiber Optic Cables

 **General Cable**

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Polyrad® XT

**Serving the Rapid Transit &
Locomotive Markets**

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Why General Cable?

For rapid transit, locomotive applications and rolling stock, General Cable provides the toughest cables to meet the most demanding requirements for long-term performance and reliability. As an industry leader in a challenging marketplace, General Cable is structured to deliver results:

- Leadership in Material Development
- Dedicated Engineering Expertise
- ISO 9001 Quality Assurance Program
- Advanced Customer eBusiness Tools



- **A Wide Range of Products**

- Car/Locomotive Wiring
- Control Cables
- Coupler Cables
- Electronically Controlled Pneumatic Brake (ECP) Cables
- Data Communication Cables
- Diesel-Electric Locomotive (DLO) Cables
- Fire Protection Cables
- Head-End Power Cables
- Heating & Lighting Cables
- Motor Lead Cables
- Off-Road Equipment Cables
- Power Cables

- **Major End-Users Supplied**

- Transit Agencies
- Transit Car Builders
- Specification Design Consultants
- Original Equipment Manufacturers (OEM)
- Electrical Contractors
- Wholesale Electrical Distributors
- Specialty Distributors

Capabilities

General Cable powers your rapid transit and locomotive applications with a wide range of wire and cable products. Our copper and fiber cable technology provides the working links that tie systems, power and communications together.

General Cable's **copper transit products** are engineered to meet demanding physical, mechanical and electrical requirements. With a breadth of sizes and configurations, our insulation and jacket materials range from general-purpose thermoplastics and polyolefins, to high-performance thermosets, such as radiation-cured low-smoke cross-linked polymers that provide superior protection and flexibility.

With the increased demand for safety, security and information integrity, **fiber optic cables** are rapidly gaining acceptance in the transit industry. From industrial-grade process control and outside-plant fiber optic cables to commercial-grade cables and blown optical fiber systems, General Cable has a fiber optic solution to meet the most stringent requirements with long-term performance and reliability. Our ultra-rugged low-smoke, zero-halogen (LSZH) irradiated cables are designed for today's data transmission and communications applications.

General Cable has extensive engineering expertise in the design and manufacturing of **hybrid multi-core cables**. A combination of General Cable's power, control, fiber optic and coaxial cables meet special purpose requirements for even the most difficult applications. By combining quality materials and efficient manufacturing processes, General Cable is one of the few companies that supplies multiple industries with custom cabling solutions.

The Willimantic, Connecticut plant is one of the most diverse manufacturing facilities of its kind. More than 600,000 square feet of modern manufacturing space is dedicated to design, development, engineering and manufacturing, as well as a wide-range of in-house testing and technical support. General Cable's Industrial & Specialty facility has the expertise to design and develop an extensive variety of material into thousands of cable constructions for sustained and continuous operations in challenging environments. With our resources focused on providing outstanding quality, service and technical support on behalf of our customers, General Cable is the best partner for current and next generation transit cabling systems.



Polyrad® XT Flexible Rapid Transit & Locomotive Wire and Cable

General Cable's Brand Rex Brand Polyrad XT rapid transit and locomotive wire and cable is the chosen solution for demanding environments throughout the U.S. and the world. Polyrad XT is found extensively on all types of rapid transit and freight cars, heavy- and light-rail cars, diesel-electric locomotives, wayside equipment and off-road vehicles.

Polyrad XT transit cable is specifically designed for original equipment and retrofit use in power and control circuits, and in motor leads. Polyrad XT's superior heat, flexibility and abrasion resistance—combined with its reduced size—simplifies cable installation and permits higher ampacities. Brand Rex Polyrad XT cables are fully tested to meet all applicable specifications and provide lifelong dependable service for transit, off-road and diesel-powered locomotives.

Unlike conventional insulating systems, Polyrad XT offers excellent overall balance of properties. Polyrad XT single conductor rapid transit and locomotive car cables are dual rated 125°C/110°C and supplied in both 600 Volt and 2000 Volt constructions. Polyrad XT multi-conductor shielded and non-shielded rapid transit and locomotive car cables are rated at 125°C and supplied in a 600 Volt construction.



Insulation System and Construction

Brand Rex Polyrad XT insulation features a highly engineered and refined low-smoke polyolefin formulation used in conjunction with soft annealed, tinned copper conductors per ASTM B33. This insulation system combines **outstanding flame retardance with excellent moisture-stable electrical values**. The construction is further enhanced by radiation cross-linking, which transforms the original thermoplastic into a rugged thermosetting material. The result is a compound with **excellent thermal stability—it will not soften or flow at elevated temperatures**.

- Polyrad XT has increased toughness
- Greater resistance to cut-through
- Superior oil resistance
- Excellent low-temperature performance
- Excellent flexibility

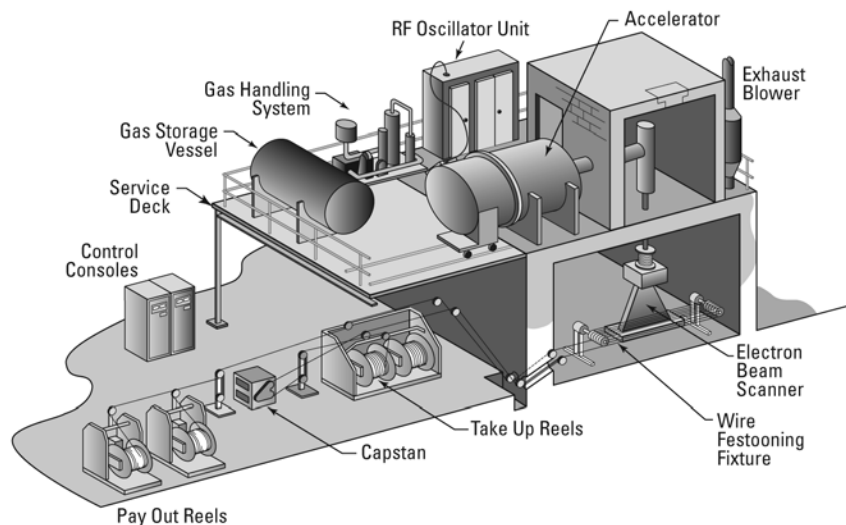
Product Features and Benefits

Polyrad XT wire and cables combine **superior properties and performance** for rapid transit, locomotive and off-road equipment applications.

- Dual 125°C/110°C temperature rating for long life, higher ampacities and protection from thermal overloads (single wires)
- Maximum flame retardance as demonstrated by VW-1 and for multi-conductor cables, the IEEE 383 (70,000 & 210,000 BTU/hr.) and IEEE 1202 (70,000 BTU/hr.)
- Excellent oil and chemical resistance
- Maximum dependability and mechanical toughness
- Higher ampacities and simplified installations made possible by small outside diameters, flexible stranding and insulation

Polyrad® XT Wire & Cable Testing

General Cable has perfected the technique of radiation processing. Cross-linking the insulation and jacket using our unique radiation process creates a more flexible product. In radiation cross-linking, a scanner accurately and uniformly directs a high-energy electron beam from a power source over the wire insulation, resulting in a precise degree of cross-linking. This technique enables General Cable to effectively process smaller wires with thin insulation walls to meet the transit market's critical demand for high-density cabling.



Electrical Properties

Requirement ICEA S-95-658		Typical General Cable*
Insulation Resistance @ 125°C (megohms-Mft)	2.0 Min.	8.3
Insulation Resistance Constant (K)	10,000 Min.	30,600
Long-Term Insulation Resistance 26 Weeks @ 90°C in water (megohms-Mft)	10 Min.	15
Accelerated Water Absorption Electrical SIC 24 hours @ 75°C	6.0 Max.	4.9
Increase in Capacitance, Percent		
1-14 Days	3.0 Max.	2.5
7-14 Days	1.5 Max.	1.3
Stability Factor after 14 days	1.0 Max.	0.18

Physical Properties

Requirement AAR RP-585 (S-501)		Typical General Cable*
Unaged Requirement		
Tensile Strength, Min. PSI	1400 Min.	2710
Elongation at Rupture, Min. %	200 Min.	260
Aged Requirement		
After Air Oven 7 days @ 158°C ± 2°C		
Tensile Strength (% of original)	90 Min.	100
Elongation (% of original)	50 Min.	69
Oil Immersion Aging – ASTM #2		
18 hours @ 120°C		
Tensile Strength (% of original)	50 Min.	69
Elongation (% of original)	50 Min.	65
7 days @ 70°C		
Tensile Strength (% of original)	70 Min.	76
Elongation (% of original)	70 Min.	74
Hot Oil Resistance, % Swell		
100 hours @ 150°C	60 Max.	32
Cold Bend @ -55°C	No Cracks	No Cracks
Cold Shock 1 hour @ -40°C	No Cracks	No Cracks
Cut-Through Penetration		
10 minutes @ 125°C	No Failure	Pass

* Typical values are from various General Cable and independent laboratory testing.

Important Advantages of Radiation Cross-Linking

Advantage	Reason
More flexible cable	Pressure-applied insulation and jacket are not required
No separator tapes	Less pressure is applied during the radiation process
Free stripping	Insulation is not driven into the conductor stranding
Better electrical properties	No chemical catalyst required. No residues which lower electrical properties and corrode copper
Cables and interstices kept free of water	Water is not used in the radiation cure operation
Range of insulation thickness	Radiation process can economically cross-link thin or heavy walls
Permanent colors	Radiation does not change or fade colors. Tracer colors remain vivid

Standards

Polyrad XT cables are manufactured, tested and inspected in accordance with the latest issue of the following standards:

AAR RP-585	Wiring and Cable Specification
ASTM B33	Tinned Soft or Annealed Copper Wire
ASTM D149	Test for Dielectric Breakdown Voltage and Dielectric Strength of Electrical Insulating Materials at Commercial Power Frequencies
ICEA S-95-658	Standard for Non-Shielded Power Cables Rated 2000V or Less for the Distribution of Electrical Energy
UL 44	Standard for Rubber Insulated Wire and Cable
IEEE 1202	Standard for Flame Testing of cables for use in cable tray within Industrial and Commercial occupancies

Brand Rex
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General Cable

Polyrad® XT Flexible Wire and Cable

600V, Single Conductor, Dual Rated – 125°C/110°C

Product Construction

Conductor:

- 20 AWG thru 1111 kcmil soft annealed tinned copper per ASTM B33, B8 and B172

Insulation:

- Polyrad XT flame-retardant, low-smoke irradiated Cross-Linked Polyolefin (XLPO)

Print:

- GENERAL CABLE BRAND REX BRAND (WC) POLYRAD XT 125C/110C XXAWG 600V YEAR/ MONTH

Options:

- Available in multi-conductor constructions
- Class K Stranding
- Available in colors other than dark gray
- Cables meeting NYCTA TX Specification available upon request

Applications

- Ideally suited for use where environmental factors require cable characteristics to perform with a high degree of flame-retardancy and excellent moisture-stable electrical values. Where reliability is the major concern and where maximum performance will be demanded
- Engineered and manufactured for both original equipment and retrofit use in power and control circuits, and in motor leads
- Extensively found on all types of heavy- and light- rail cars, rapid transit cars, diesel-electric locomotives, freight cars, wayside equipment and off-road vehicles

Features

- Dual temperature rating at 125°C/110°C for long life, higher ampacities and protection from thermal overloads
- Excellent flexibility & free stripping
- Higher ampacities and simplified installations possible due to small outside diameters, flexible stranding and insulation
- Outstanding thermal stability at elevated temperatures
- Maximum flame-retardance and low toxicity
- Excellent low-temperature performance; suitable for installation in sub zero conditions
- Extra tough, mechanically rugged irradiated thermoset insulation
- Resistant to most oils and chemicals
- Meets cold bend test at -55°C
- Meets cold impact test at -40°C

Compliances

Industry:

- AAR S-501/AAR RP-585
- ICEA S-95-658

Flame Test:

- IEEE 1202 (70,000 BTU/hr)
- IEEE 383 (70,000 BTU/hr)
- VW-1

Other:

- BSS 7239
- SMP 800-C
- ASTM E662
- Meets requirements of 49 CFR Part 238 for flame and smoke requirements

Packaging

- Standard reel put-up



600 VOLT CHART

CATALOG NUMBER STOCK*	CONDUCTOR (AWG/kcmil) SIZE AND STRANDING		NOMINAL CONDUCTOR DIAMETER		NOMINAL INSULATION THICKNESS		NOMINAL CABLE DIAMETER		COPPER WEIGHT		NET CABLE WEIGHT		AMPACITY (Free Air 40° C Ambient)	
			INCHES	MM	MILS	MM	INCHES	MM	lbs./1000'	kg/km	lbs./1000'	kg/km	110° C	125° C
315130	20	19/32	0.038	0.95	30	0.76	0.098	2.49	4	6	8	12	24	26
280710*	18	19/30	0.048	1.21	30	0.76	0.108	2.74	6	9	11	16	30	32
280720*	16	19/29	0.054	1.37	30	0.76	0.114	2.90	8	12	13	19	35	38
280700*	14	19/27	0.067	1.70	30	0.76	0.127	3.23	12	18	17	25	41	44
296420*	12	19/25	0.086	2.18	30	0.76	0.146	3.71	19	28	26	39	52	56
303910*	10	27/24	0.117	2.97	30	0.76	0.177	4.50	34	50	42	63	73	79
296490	8	37/24	0.135	3.43	45	1.14	0.225	5.72	47	70	61	91	85	92
330230*	6	61/24	0.174	4.42	45	1.14	0.264	6.71	76	114	95	142	120	130
355320	5	91/24	0.219	5.56	45	1.14	0.309	7.85	116	173	139	207	160	173
318420	4	105/24	0.262	6.65	45	1.14	0.352	8.94	137	204	162	241	168	181
355330	3	125/24	0.285	7.24	45	1.14	0.375	9.53	167	249	191	284	199	215
355340	2	150/24	0.307	7.80	45	1.14	0.397	10.08	190	283	218	325	214	231
355350	1	225/24	0.380	9.65	55	1.40	0.490	12.45	287	427	346	515	268	289
355360	1/0	275/24	0.410	10.41	55	1.40	0.520	13.21	351	522	414	616	304	328
355370	2/0	325/24	0.470	11.94	55	1.40	0.580	14.73	407	606	471	701	338	364
355380	3/0	450/24	0.549	13.94	55	1.40	0.659	16.74	594	884	652	970	414	446
355390	4/0	550/24	0.593	15.06	55	1.40	0.703	17.86	696	1036	771	1147	472	509
355400	262	650/24	0.630	16.00	65	1.65	0.760	19.30	820	1220	913	1359	524	565
355410	313	775/24	0.685	17.40	65	1.65	0.815	20.70	987	1469	1089	1621	590	636
355420	373	925/24	0.750	19.05	65	1.65	0.880	22.35	1176	1750	1289	1918	657	708
355430	444	1100/24	0.820	20.83	65	1.65	0.950	24.13	1413	2207	1537	2287	734	791
355440	535	1325/24	0.895	22.73	80	2.03	1.055	26.80	1697	2525	1862	2771	828	893
355450	646	1600/24	0.980	24.89	80	2.03	1.140	28.96	2020	3006	2202	3277	931	1004
355460	777	1925/24	1.075	27.31	80	2.03	1.235	31.37	2435	3624	2564	3816	1047	1129
355470	929	2300/24	1.230	31.24	80	2.03	1.390	35.31	3117	4638	3401	5061	1168	1259
355480	1111	2750/24	1.328	33.73	95	2.41	1.518	38.56	3400	5060	3915	5826	1254	1352

Dimensions and weights are nominal; subject to industry tolerances.

Note: At the option of the purchaser, the manufacturer's standard type of stranding will be acceptable providing that the conductor diameter does not exceed the values shown. The total number of wires shall be as specified, plus or minus one percent, except 150/24 which may vary by minus two percent, providing that the conductor diameter does not exceed the values shown.

*Standard Stock Items

Polyrad® XT Flexible Wire and Cable

2000V, Single Conductor, Dual Rated – 125°C/110°C



2000 VOLT CHART – STANDARD INSULATION THICKNESS

CATALOG NUMBER STOCK*	CONDUCTOR (AWG/kcmil) SIZE AND STRANDING		NOMINAL CONDUCTOR DIAMETER		NOMINAL INSULATION THICKNESS		NOMINAL CABLE DIAMETER		COPPER WEIGHT		NET CABLE WEIGHT		AMPACITY (Free Air 40°C Ambient)	
			INCHES	MM	MILS	MM	INCHES	MM	lbs./1000'	kg/km	lbs./1000'	kg/km	110°C	125°C
364980	20	19/32	0.038	0.95	45	1.14	0.128	3.25	4	6	10	15	24	26
300620*	18	19/30	0.048	1.21	45	1.14	0.138	3.51	6	9	14	21	30	32
300890*	16	19/29	0.054	1.37	45	1.14	0.144	3.66	8	12	16	24	35	38
280740*	14	19/27	0.067	1.70	45	1.14	0.157	3.99	12	18	22	33	41	44
303480*	12	19/25	0.086	2.18	45	1.14	0.176	4.47	19	28	31	46	52	56
301260*	10	27/24	0.117	2.97	45	1.14	0.207	5.26	34	50	47	70	73	79
269970*	8	37/24	0.135	3.43	55	1.40	0.245	6.22	47	70	66	98	85	92
297970*	6	61/24	0.174	4.42	55	1.40	0.284	6.96	76	114	100	149	120	130
355490	5	91/24	0.219	5.56	55	1.40	0.329	8.36	116	173	144	214	160	173
301270*	4	105/24	0.262	6.65	55	1.40	0.372	9.45	137	204	169	252	168	181
325290	3	125/24	0.285	7.24	55	1.40	0.395	10.03	167	249	197	293	199	215
302440*	2	150/24	0.307	7.80	55	1.40	0.417	10.59	190	283	226	336	214	231
355500*	1	225/24	0.380	9.65	65	1.65	0.510	12.95	287	427	353	525	268	289
296500*	1/0	275/24	0.410	10.41	65	1.65	0.540	13.72	351	522	420	625	304	328
301280*	2/0	325/24	0.470	11.94	65	1.65	0.600	15.24	407	606	481	716	338	364
300900*	3/0	450/24	0.549	13.94	65	1.65	0.679	17.25	594	884	663	987	414	446
296510*	4/0	550/24	0.593	15.06	65	1.65	0.723	18.36	696	1036	792	1179	472	509
267040	262	650/24	0.630	16.00	75	1.91	0.780	19.81	820	1220	931	1386	524	565
296520*	313	775/24	0.685	17.40	75	1.91	0.835	21.21	987	1469	1108	1649	590	636
304020	373	925/24	0.750	19.05	75	1.91	0.900	22.86	1176	1750	1310	1950	657	708
300180	444	1100/24	0.820	20.83	75	1.91	0.970	24.64	1413	2207	1561	2323	734	791
263400	535	1325/24	0.895	22.73	90	2.29	1.075	27.31	1697	2525	1888	2810	828	893
355570	646	1600/24	0.980	24.89	90	2.29	1.160	29.46	2020	3006	2231	3320	931	1004
260080	777	1925/24	1.075	27.31	90	2.29	1.255	31.88	2435	3624	2681	3990	1047	1129
355600	929	2300/24	1.230	31.24	90	2.29	1.410	35.81	3117	4638	3431	5106	1168	1259
355620	1111	2750/24	1.328	33.73	110	2.79	1.548	39.32	3400	5060	3972	5911	1254	1352

2000 VOLT CHART – HEAVY WALL INSULATION THICKNESS

CATALOG NUMBER	CONDUCTOR (AWG/kcmil) SIZE AND STRANDING	NOMINAL CONDUCTOR DIAMETER	NOMINAL INSULATION THICKNESS	NOMINAL CABLE DIAMETER	COPPER WEIGHT	NET CABLE WEIGHT	AMPACITY (Free Air 40°C Ambient)
		INCHES	MM	INCHES	MM	lbs./1000'	kg/km
355510	4/0 550/24	0.593	15.06	105	2.67	0.803	20.40
355520	262 650/24	0.630	16.00	105	2.67	0.840	21.34
355530	313 775/24	0.685	17.40	105	2.67	0.895	22.73
355540	373 925/24	0.750	19.05	105	2.67	0.960	24.38
355550	444 1100/24	0.820	20.83	105	2.67	1.030	26.16
355560	535 1325/24	0.895	22.73	120	3.05	1.135	28.83
355580	646 1600/24	0.980	24.89	120	3.05	1.220	30.99
355590	777 1925/24	1.075	27.31	120	3.05	1.315	33.40
355610	929 2300/24	1.230	31.24	120	3.05	1.470	37.34
355630	1111 2750/24	1.328	33.73	120	3.05	1.568	39.83

Dimensions and weights are nominal; subject to industry tolerances.

Note #1: Where additional insulation thickness is desired for added mechanical protection, these values are noted in the second chart.

Note #2: At the option of the purchaser, the manufacturer's standard type of stranding will be acceptable providing that the conductor diameter does not exceed the values shown. The total number of wires shall be as specified, plus or minus one percent, except 150/24 which may vary by minus two percent, providing that the conductor diameter does not exceed the values shown.

*Standard Stock Items

Product Construction

Conductor:

- 20 AWG thru 1111 kcmil soft annealed tinned copper per ASTM B33, B8 and B172

Insulation:

- Polyrad XT flame-retardant, low-smoke irradiated Cross-Linked Polyolefin (XLPO)

Print:

- GENERAL CABLE BRAND REX BRAND (WC) POLYRAD XT 125C/110C XXAWG 2000V YEAR/MONTH

Options:

- Class K stranding
- Available in colors other than dark gray
- Cable meeting NYCTA TX specification available upon request

Applications

- Ideally suited for use where environmental factors require cable characteristics to perform with a high degree of flame-retardancy and excellent moisture-stable electrical values. Where reliability is the major concern and where maximum performance will be demanded
- Engineered and manufactured for both original equipment and retrofit use in power and control circuits, and in motor leads
- Extensively found on all types of heavy- and light- rail cars, rapid transit cars, diesel-electric locomotives, freight cars, wayside equipment and off-road vehicles

Features

- Dual temperature rating at 125°C/110°C for long life, higher ampacities and protection from thermal overloads
- Excellent flexibility and free stripping
- Higher ampacities and simplified installations possible due to small outside diameters, flexible stranding and insulation
- Outstanding thermal stability at elevated temperatures
- Maximum flame-retardance and low toxicity
- Excellent low-temperature performance; suitable for installation in sub zero conditions
- Extra tough, mechanically rugged irradiated thermoset insulation
- Resistant to most oils and chemicals
- Meets cold bend test at -55°C
- Meets cold impact test at -40°C

Compliances

Industry:

- AAR S-501/AAR RP-585
- ICEA S-95-658

Flame Test:

- IEEE 1202 (70,000 BTU/hr)
- IEEE 383 (70,000 BTU/hr)
- VV-1

Other:

- BSS 7239
- SMP 800-C
- ASTM E662
- Meets requirements of 49 CFR Part 238 for flame and smoke requirements

Packaging

- Standard reel put-up

Polyrad® ULTRA Wire and Cable

600V, Single Conductor 125°C, Reduced Weight, Smaller Diameter, Dual Wall

Through our wealth of experience in providing effective cabling solutions for challenging and hazardous environments, General Cable responds to yet another industry demand. As developments and opportunities in transit technology drive the adoption of more

sophisticated train networks, available space decreases and becomes more costly. As a result, the transit industry is experiencing an increasing demand for the reduction of both size and weight of cabling systems. Polyrad Ultra wire and cable offers better performance,

reduced weight and smaller diameters, defining the next generation of cable, ideal where high-density cabling is required. Polyrad Ultra singles can be designed into multi-conductor constructions that are 600 Volt and rated 125°C, and are ideal for high-density cabling applications.

UPTO 33% WEIGHT & SPACE SAVINGS



Product Construction

- Conductor:**
- 22 AWG thru 10 AWG soft annealed tinned copper per ASTM B33, B8 and B172
- Dual Insulation:**
- Polyrad Ultra flame-retardant, low-smoke irradiated Cross-Linked Polyolefin (XLPO)
 - Cross-Linked Fluoropolymer
- Print:**
- GENERAL CABLE BRAND REX BRAND (WC) POLYRAD ULTRA 125C XXAWG 600V
- Options:**
- Available in multi-conductor constructions
 - Available in colors other than dark gray

Applications

- Ideally suited for use where high-density cabling is required as this cable offers both size and weight advantages
- Engineered and manufactured for both original equipment and retrofit use in electronics equipment
- Utilized where environmental factors require cable characteristics to perform with a high degree of flame-retardancy and excellent moisture-stable electrical values. Where reliability is the major concern and where maximum performance will be demanded
- For use on all types of heavy- and light-rail cars, rapid transit cars and diesel-electric locomotives

Features

- Reduced diameter and lighter-weight transit wire—up to 33% smaller in diameter and lighter in weight than conventional Polyrad XT 600V
- Temperature rating at 125°C for long life, higher ampacities and protection from thermal overloads
- Higher ampacities and simplified installations possible due to small outside diameters, flexible stranding and insulation
- Outstanding thermal stability at elevated temperatures
- Maximum flame retardance
- Excellent low-temperature performance; suitable for installation in sub-zero conditions
- Extra-tough, mechanically rugged irradiated thermoset insulation
- Resistant to most oils, chemicals and moisture
- Meets cold bend test at -55°C

Compliances

- Industry:**
- ICEA S-95-658
 - UL 44
- Flame Test:**
- IEEE 1202 (70,000 BTU/hr)
 - IEEE 383 (70,000 BTU/hr)
 - VW-1
- Other:**
- BSS 7239
 - SMP 800-C
 - ASTM E662
 - Meets EPA 40 CFR, Part 261 for leachable lead content per TCLP method
 - OSHA acceptable
- Packaging**
- Standard reel put-up

600 VOLT CHART

CATALOG NUMBER	CONDUCTOR (AWG) SIZE AND STRANDING		NOMINAL CONDUCTOR DIAMETER		NOMINAL INSULATION THICKNESS		NOMINAL JACKET THICKNESS		NOMINAL CABLE DIAMETER		COPPER WEIGHT		NET CABLE WEIGHT	
			INCHES	MM	MILS	MM	MILS	MM	INCHES	MM	lbs./1000'	kg/km	lbs./1000'	kg/km
369550	22	19/34	0.030	0.76	10	0.254	5	0.127	0.060	1.53	2	3	4	6
369560	20	19/32	0.038	0.97	10	0.524	5	0.127	0.068	1.73	4	6	6	9
369570	18	19/30	0.048	1.22	10	0.254	5	0.127	0.078	1.98	6	9	8	12
369580	16	19/29	0.054	1.37	10	0.254	5	0.127	0.084	2.13	8	12	10	15
369590	14	19/27	0.067	1.70	10	0.254	5	0.127	0.097	2.46	12	18	15	22
369600	12	19/25	0.086	2.18	10	0.254	5	0.127	0.116	2.95	19	28	23	34
369610	10	27/24	0.117	2.97	10	0.254	5	0.127	0.150	3.81	34	51	38	57

Super Vu-Tron® Diesel Locomotive Cable⁽¹⁾

90°C 2000 Volt DLO, UL RHH/RHW 600 Volts, CSA R90, 1000 Volt



Product Construction

Conductor:

- 10 AWG through 777.7 kcmil stranded tinned annealed bare copper per AAR 589

Insulation:

- Premium grade 90°C EPDM

Jacket:

- Chlorinated polyethylene (CPE), Black

Jacket Marking:

- SIZES 10 THROUGH 1 - CAROL SUPER VU-TRON (SIZE) (STRANDING) 90°C DLO 2000 VOLTS P-7K-123040 MSHA CSA R90 1000V (UL) RHH or RHW 600 VOLTS
- SIZES 1/0 THROUGH 646.4 - CAROL SUPER VU-TRON (SIZE) 90°C DLO 2000 VOLTS P-7K-123040 MSHA CSA R90 1000V (-40°C) FT-1 - (UL) RHH or RHW 600 VOLTS SUNLIGHT RESISTANT FOR CT USE
- SIZE 777.7 KCMIL ONLY - CAROL SUPER VU-TRON E194120 C(UL) TYPE RHW-2 2KV VW-1 FOR CT USE TYPE DLO 2000V 90°C P-102099 MSHA

Note: 535.3 and 646.4 kcmil marked (UL) RHH OR RHW 2000 VOLTS

Applications

- Super Vu-Tron DLO provides maximum performance. Tough enough to withstand daily abuse, temperature extremes and high-stress industrial environments
- Diesel electric locomotives
- For applications where flexible power leads must be installed in conduit or raceway
- Motor leads

Features

- 90°C temperature rating
- Excellent impact and abrasion resistance
- Resists oils, acids, alkalies, heat and flame
- Flexible tinned copper stranding

Industry Approvals

- UL Listed
- Accepted by MSHA for listing as flame-resistant
- CSA R90
- RoHS Compliant

Packaging

- Lengths cut to order

DLO – 2000 VOLTS – EP/CPE

CATALOG NUMBER	(AWG/kcmil) SIZE	COND STRAND	NOMINAL INS. THICKNESS		NOM. JACKET THICKNESS		NOMINAL O.D.		APPROX. NET WT. LBS/M ⁽²⁾
			INCHES	MM	INCHES	MM	INCHES	MM	
81910	10	27/24	0.045	1.14	.020	0.51	0.26	6.60	60
81908	8	37/24	0.060	1.52	.030	0.76	0.34	8.64	95
81906	6	61/24	0.060	1.52	.030	0.76	0.40	10.16	145
81904	4	105/24	0.060	1.52	.030	0.76	0.46	11.68	205
81902	2	154/24	0.060	1.52	.030	0.76	0.52	13.21	295
81901	1	224/24	0.080	2.03	.045	1.14	0.65	16.51	440
81911	1/0	280/24	0.080	2.03	.045	1.14	0.69	17.53	515
81920	2/0	329/24	0.080	2.03	.045	1.14	0.73	18.54	580
81930	3/0	456/24	0.080	2.03	.045	1.14	0.81	20.57	770
81940	4/0	551/24	0.080	2.03	.045	1.14	0.87	22.10	930
81926	262.6	646/24	0.095	2.41	.065	1.65	1.00	25.40	1130
81931	313.3	777/24	0.095	2.41	.065	1.65	1.06	26.92	1295
81937	373.7	925/24	0.095	2.41	.065	1.65	1.10	27.94	1545
81944	444.4	1110/24	0.095	2.41	.065	1.65	1.23	31.24	1820
81953 ⁽¹⁾	535.3	1332/24	0.120	3.05	.065	1.65	1.34	34.04	2195
81964 ⁽¹⁾	646.4	1600/24	0.120	3.05	.065	1.65	1.45	36.83	2560
81977	777.7	1924/24	0.120	3.05	.065	1.65	1.50	38.10	3050

⁽¹⁾ (UL) RHH/RHW 2000 Volts

⁽²⁾ Actual shipping weight may vary.

Electronically Controlled Pneumatic (ECP) Brake Cable

600V, Two Conductor



Product Construction

- Conductor:**
- 8 AWG soft annealed tinned copper per ASTM B33
- Insulation:**
- Cross-Linked Polyolefin (XLPO) - 125°C
- Shield:**
- 34 AWG tinned copper braid with drain wire
- Jacket:**
- Arctic-grade, heavy-duty reinforced Neoprene
- Optional Armor:**
- Galvanized steel or aluminum
- Print:**
- AAR ECP BRAKE CABLE S-4210 GENERAL CABLE BRAND REX BRAND (WC) T-75128 2/C 8 AWG 600V

Applications

- Designed specifically for installation both under and between freight cars
- Meets all AAR specification S-4210 requirements

Features

- 125°C rated cross-linked polyolefin (XLPO) insulation allows for routing through higher temperature areas. Insulation is also flexible and free stripping
- Tinned copper braided shield designed for significant EMI/RFI reduction
- Arctic-grade, heavy-duty reinforced Neoprene jacket offers the lowest diameter for easier conduit pull and can be used in a ¾" conduit in lieu of 1". Excellent low-temperature performance suitable for installation in sub-zero conditions. Tough mechanical properties
- Optional galvanized or aluminum armor over the cable jacket allows for conduit-free installations providing significant installed cost savings
- Temperature range of -45°C to +100°C
- Available in assemblies/cut-to-lengths/termination

Compliances

- Industry:**
- AAR S-4210
- Flame Test:**
- IEEE 1202 (70,000 BTU/hr)
 - IEEE 383 (70,000 BTU/hr)
 - VW-1
- Other:**
- Meets EPA 40 CFR, Part 261 for leachable lead content per TCLP method
 - OSHA acceptable

Packaging

- Material cut to length and shipped out on non-returnable wooden reels

ECP BRAKE CABLE

CATALOG NUMBER	NUMBER OF CONDUCTORS	CONDUCTOR (AWG) SIZE AND STRANDING		NOMINAL INSULATION THICKNESS		NOMINAL JACKET THICKNESS		NOMINAL CABLE DIAMETER		NET CABLE WEIGHT	
				MILS	MM	MILS	MM	INCHES	MM	lbs./1000'	kg/km
282400	2	8	37/24	40	1.02	100	2.54	0.725	18.42	334	497
287940 (ARMORED)	2	8	37/24	40	1.02	100	2.54	0.925	23.50	624	930

Category 5 Shielded Cable

Four Pair, 24 AWG



Product Construction

- Conductor:**
- 4 pair, 24 AWG 7/32 tinned copper: O.D.: .024" nom.
- Insulation:**
- Polyolefin: O.D.: .047" nom.
- Pairs:**
- Two conductors twisted together (each pair twisted with a different lay length)
 - Color Code:
 - P1: White/Blue, Blue
 - P3: White/Green, Green
 - P2: White/Orange, Orange
 - P4: White/Brown, Brown

Binding:

- Polyester tape, 25% min. lap.

Inner Shield:

- Aluminum/Polyester tape, 100% coverage

Outer Shield:

- Tinned copper braid, 65% coverage

Jacket:

- Polyrad XT flame-retardant, low-smoke, irradiated Cross-linked Polyolefin (XLPO), .025" nom. wall, Dark Gray: O.D.: .285" nom.

Print:

- Including but not limited to:
GENERAL CABLE (F) LO24P0045664 4PR/24 AWG SFTP CAT5 PATCH AAAAA* MO/YR** XXXXXX FT***
*Order Number **Date ***Footage
Markings every 2 ft

Applications

- For high speed data transmission. Tested to 100 MHz.
- Category 5 construction is suitable for use in transit applications with flexible stranding, overall shield and a Polyrad XT jacket.

Features

- Meets Category 5 electricals

Compliances

- Industry:**
- TIA/EIA-568-B.2 Patch

Flame Tests:

- 49 CFR Part 238 Appendix B for low voltage wire and cable

Other

- BSS 7239
- ASTM E662
- Meets requirements of 49 CFR Part 238 Appendix B for flame and smoke requirements

Catalog Number

- LO24P0045664

TRANSPOWER Head-End Power (HEP) Cable

600V, Single Conductor, 4/0 AWG



CATALOG NUMBER 650870.00.77

Product Construction

Conductor:

- 4/0 AWG 5320/34 rope bare copper

Insulation:

- Thermoplastic Elastomer (TPE)—.060" nominal wall

Jacket:

- Reinforced Neoprene, .085" nominal wall—black; 0.885" +/- 0.030" O.D.

Print:

- GENERAL CABLE BRAND REX BRAND (WC) 600V 4/0 AWG

Cable Weight:

- 872 lbs/1000 ft net

Applications

- Head-End Power Cable used in jumper assemblies locomotive-to-locomotive, locomotive-to-car and car-to-car for transmission of 480V, 3 phase 50/60 Hz
- Designed for heavy-duty service where severe flexing is encountered

Features

- Rated at 600V
- Normal operating temperature: +90°C to -55°C
- Extreme temperature resistance during molding operation: 375°F
- Excellent flexibility; withstands continuous vibrations
- Outstanding resistance to moisture, oils and fluids, abrasion, tearing, compression, ozone, sunlight, flame and heat
- Bend radius: 3.5" min. per ICEA S-19-81
- Ampacity: 400 Amps @ 30°C

Industry Compliances

- Amtrak Specification: D-77-24
- ASTM B3
- ASTM B172
- UL Standard 62
- ICEA S-95-658/NEMA WC 70 (formerly ICEA S-19-81)

TRANSPOWER Head-End Power (HEP) Cable

600V, Three Conductor, 10 AWG



CATALOG NUMBER 696420.00.77

Product Construction

Conductor:

- 10 AWG 259/34 tinned copper

Insulation:

- Thermoplastic Elastomer (TPE)—.047" nominal wall
- Color-code: Black, White, Red

Cable Core:

- Three (3) conductors and fillers cabled together with a left-hand lay

Binder:

- Polyester tape helically applied with a 25% minimum overlap

Jacket:

- Neoprene, .093" nominal wall—black; 0.685" +/- 0.015" O.D.

Print:

- GENERAL CABLE BRAND REX BRAND (WC) 600 VOLT TRANSPOWER 3/C 10 AWG

Cable Weight:

- 338 lbs/1000 ft net

Applications

- Head-End Power cable used in jumper assemblies locomotive-to-locomotive, locomotive-to-car and car-to-car for transmission of 480V, 3 phase 50/60 Hz
- Designed for heavy-duty service where severe flexing is encountered

Features

- Rated at 600V
- Normal operating temperature: +90°C to -55°C
- Extreme temperature resistance during molding operation: 375°F
- Excellent flexibility; withstands continuous vibrations
- Outstanding resistance to moisture, oils and fluids, abrasion, tearing, compression, ozone, sunlight, flame and heat

Industry Compliances

- Amtrak Specification: D-77-24
- ASTM B3
- ASTM B172
- UL Standard 62
- ICEA S-95-658/NEMA WC 70 (formerly ICEA S-19-81)



General Cable serves customers through a global network of 32 manufacturing facilities in 14 countries and sales representatives and distribution centers worldwide. The Company is solely dedicated to the production of high-quality energy, industrial, specialty and communications wire and cable products. In addition to its breadth of product line and strong brand recognition, the Company offers competitive strengths in such areas as technology, manufacturing, distribution and logistics, and sales and customer service. This combination enables General Cable to better serve its customers as they expand into new geographic markets.

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