COMPLETE PRODUCT CATALOG

Master Product Catalog

Fiber Optic · Low Voltage · Medium Voltage · High Voltage · Mining & Marine · Accessories

The complete Mirabel Energy product portfolio — engineered for utility infrastructure, AI data centers, industrial operations, mining, and marine applications. Manufactured to ANSI, IEEE, IEC, NEC, and MSHA standards. Stocked in Reno NV, Houston TX, and Salt Lake City UT for rapid delivery across North America.

7	40+	500kV+	MSHA
Product Divisions	Product Lines	Max Voltage	Mining Certified

DISTRIBUTED BY	STOCKING	CONTACT	WEB
GCP Energy LLC	Reno, NV · Houston, TX · Salt Lake City, UT	brady@gcpenergy.us favad@gcpenergy.us	mirabelenergy.us gcpenergy.us

Table of Contents

- Shipboard Cable — IEEE 1580
- Offshore Platform Cable
- Submersible Pump Cable

ACCESSORIES DIVISION

- Bushing Covers — Polyolefin & EPDM
- Busbar Connectors & Clamps
- Surge Arrester & Switch Covers
- Transformer & Feeder Bushing Covers
- EPDM Cold Shrink Kits — MV/HV
- Heat Shrink Kits — MV/HV
- Rubber Goods & Protective Equipment

PRICING & CONTACT

SECTION 1 · FIBER OPTIC DIVISION

Fiber Optic

Single-Mode · Multi-Mode · MTP/MPO · Aerial · OSP · Ribbon · Industrial · Hybrid

Full-spectrum fiber optic cable solutions for utility infrastructure, AI data centers, hyperscale networks, industrial automation, and outdoor plant deployment. Stocked in Reno NV, Houston TX, and Salt Lake City UT.

› OS2 Singlemode 9/125µm	› Multimode OM3/OM4/OM5	› MTP/MPO 12–32 Core Trunk
› ADSS Aerial & Armored OSP	› Rollable & Armored Ribbon	› Indoor/Outdoor Breakout
› Industrial Hybrid Composite	› HDPE Innerduct 1.25"	

MIRABEL ENERGY · FIBER OPTIC DIVISION

OS2 Singlemode Fiber — 9/125µm

ITU-T G.652.D / G.657 · Bend-Insensitive · AI Data Center & Long-Haul Transmission

≤0.4 dB/km	400G–1.6T	G.657 Rated	12–256F
Max Attenuation	Speed Support	Bend-Insensitive	Strand Options

PRODUCT OVERVIEW

Mirabel OS2 single-mode fiber is engineered for AI cluster interconnects, hyperscale data center backbone runs, and utility transmission requiring maximum reach with minimal attenuation. With a 9/125µm core/cladding geometry, OS2 supports distances exceeding 10km at 1310nm and 40km+ at 1550nm — the preferred medium for 400G, 800G, and emerging 1.6T transceivers. G.657.A1/A2 bend-insensitive variants maintain signal integrity in tightly packed AI infrastructure cable trays.

KEY APPLICATIONS

- AI cluster and GPU interconnects — hyperscale data centers
- Long-haul campus and inter-building backbone (10km–40km+)
- MTP/MPO trunk systems — 12, 24, 32-core parallel optics
- Utility substation and transmission fiber (OPGW/ADSS companion)
- Cloud data center spine-leaf architecture backbone
- High-density cable trays and tight-radius routing (G.657)

KEY SPECIFICATIONS

Fiber Standard	OS2 9/125µm — ITU-T G.652.D and G.657.A1/A2 bend-insensitive
Attenuation	≤0.40 dB/km @ 1310nm / ≤0.35 dB/km @ 1550nm (G.657.A2)
Speed Support	400G / 800G coherent and direct-detect; 1.6T ready
Connector Compat.	MTP/MPO 12/16/24/32-core high-density connector systems
Constructions	Tight-buffered, loose-tube, ribbon, and ADSS
Zero-Water-Peak	ZWP design — full E-band (1360–1460nm) compatibility
Operating Temp	-40°C to 70°C outdoor / -20°C to 70°C indoor
Jacket Options	LSZH, OFNP (plenum), OFNR (riser), and armored

TECHNICAL SPECIFICATIONS

Parameter	OS2 Standard	G.657.A2 Bend-Insensitive
Core/Cladding	9/125 µm	9/125 µm
Atten. @ 1310nm	≤0.40 dB/km	≤0.40 dB/km
Atten. @ 1550nm	≤0.40 dB/km	≤0.35 dB/km
Min Bend Radius	30 mm	7.5 mm (Class A2)
PMD Coefficient	≤0.20 ps/√km	≤0.20 ps/√km
Fiber Count Options	12–256 strands	12–256 strands

PART / ORDER INFO

12 · 24 · 48 · 144 · 256 strand counts Standard and custom reel lengths

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · FIBER OPTIC DIVISION

Multimode Fiber — OM3 / OM4 / OM5

IEC 60793-2-10 | 50/125µm | Data Center Server-to-Switch & High-Speed LAN

4700 MHz·km	28000 MHz·km	400G Ready	50/125µm
OM4 Bandwidth	OM5 Bandwidth	Max Speed	Core Diameter

PRODUCT OVERVIEW

Mirabel multimode fiber delivers cost-effective, high-bandwidth performance for server-to-switch, top-of-rack, and end-of-row connections in modern AI data centers and HPC environments. OM4 dominates 100G/400G short-reach links. OM5 (Wide Band Multimode — WBMMF) extends to 850–953nm enabling SWDM for 40G/100G/400G over fewer strands. All grades are laser-optimized for 850nm VCSELs and fully compatible with MTP/MPO high-density systems.

KEY APPLICATIONS

- Data center server-to-switch and top-of-rack (ToR)
- Storage area network (SAN) and NVMe fabric interconnects
- HPC and AI cluster short-reach links
- 40G/100G/400G parallel optic MTP/MPO installations
- Campus LAN backbone and intra-building distribution
- SWDM4 and BiDi transceiver applications (OM5)

KEY SPECIFICATIONS

OM3	2000 MHz·km EMB — 100G to 100m, 40G to 150m
OM4	4700 MHz·km EMB — 100G to 150m, 400G to 100m
OM5	28000 MHz·km — SWDM capable, 850–953nm wavelength range
Core Geometry	50/125µm laser-optimized graded-index for VCSEL compatibility
Jacket Color	Aqua (OM3/OM4) / Lime-green (OM5) per TIA standards
Constructions	Tight-buffered, loose-tube, breakout, distribution
Jacket Options	LSZH, OFNP (plenum), OFNR (riser), armored

TECHNICAL SPECIFICATIONS

Parameter	OM3	OM4	OM5
Core/Cladding	50/125 µm	50/125 µm	50/125 µm
Bandwidth (EMB)	2000 MHz·km	4700 MHz·km	28000 MHz·km
Atten. @ 850nm	≤3.5 dB/km	≤3.0 dB/km	≤3.0 dB/km
100G Reach	Up to 100m	Up to 150m	Up to 150m
400G Reach	N/A	Up to 100m	Up to 150m (SWDM)
Wavelength	850nm	850nm	850–953nm

PART / ORDER INFO

12 · 24 · 48 · 144 strand counts OM3, OM4, OM5 grades stocked

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · FIBER OPTIC DIVISION

MTP/MPO High-Density Trunk Systems

TIA-604-5 · IEC 61754-7 | 12–32 Core | OS2 / OM4 / OM5 | AI Data Center Parallel Optics

12/16/24/32	≤0.35 dB	≥26 dB	400G/800G
Core Options	Insertion Loss	Return Loss	Speed Support

PRODUCT OVERVIEW

MTP/MPO multi-fiber connectorized trunk cables are the workhorse of modern AI data center cabling. Parallel optical transmission across 12, 16, 24, or 32 fibers through a single connector dramatically reduces installation time, improves airflow, and provides density for 400G and 800G transceivers. Mirabel pre-terminated assemblies are factory-tested and precision-polished — eliminating on-site splicing and ensuring TIA/IEC insertion loss compliance.

KEY APPLICATIONS

- AI data center spine-leaf fabric — GPU cluster interconnects
- 400G/800G QSFP-DD and OSFP transceiver patching
- Pre-terminated plug-and-play data hall trunk infrastructure
- Structured cabling backbone — colocation and hyperscale
- Migration path to 1.6T — future-proofed infrastructure

KEY SPECIFICATIONS

Connector Options	MTP Elite / MPO-16 / MPO-24 / MPO-32
Polarity	Type A, B, and C — compatible with all major OEM switch platforms
Fiber Types	OS2 9/125µm (SM) and OM4/OM5 50/125µm (MM)
Testing	Factory-terminated; 100% insertion loss tested
Insertion Loss	≤0.35 dB per mated pair
Return Loss	≥26 dB PC/UPC | ≥65 dB APC
Standard Lengths	3m–100m; custom lengths on request
Jacket	LSZH — data center fire code compliant

TECHNICAL SPECIFICATIONS

Parameter	OS2 (SM)	OM4/OM5 (MM)
Core Count	12/24/32	12/24/32
Insertion Loss	≤0.35 dB	≤0.35 dB
Return Loss (UPC)	≥26 dB	≥20 dB
Return Loss (APC)	≥65 dB	N/A
Wavelength	1310/1550nm	850/953nm
Standard Lengths	3–100m	3–100m

PART / ORDER INFO

12 · 16 · 24 · 32-core | OS2 / OM4 / OM5 Type A/B/C polarity available

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · FIBER OPTIC DIVISION

ADSS Aerial & Armored/All-Dielectric OSP Fiber

IEEE 1222 · IEC 60794-4 · Telcordia GR-20 | Utility Overhead & Underground OSP

Up to 800m+	Up to 500kV	Steel/Al Armor	12–144F
ADSS Max Span	Voltage Class	Armored OSP	Fiber Counts

PRODUCT OVERVIEW

Mirabel ADSS aerial fiber attaches to utility transmission and distribution structures without messenger wire or grounding — all-dielectric construction eliminates induced voltage risk, making ADSS ideal for protection relay, SCADA, and grid modernization on energized corridors (AT jacket: up to 115kV; AP jacket: up to 500kV). Armored loose tube OSP fiber adds steel or aluminum armor for crush resistance and rodent protection on underground duct and direct burial runs. All-dielectric loose tube (ADCF) provides the same protection without metallic elements for lightning-prone and HV corridor environments.

KEY APPLICATIONS

- Transmission/distribution protection relay fiber (OPGW alternative)
- SCADA, EMS, and grid automation on utility ROW
- Industrial plant fiber backbone with armored mechanical protection
- Utility substation relay house and control building interconnects
- Renewable energy site fiber — aerial, duct, and direct burial
- Underground duct runs and conduit-constrained environments

KEY SPECIFICATIONS

ADSS Construction	All-dielectric — no induced voltage, no grounding on HV corridors
ADSS Jacket Grades	AT (low E-field, ≤115kV) and AP (high E-field, ≤500kV)
ADSS Span Ratings	100m to 800m+ depending on tensile member selection
Armored OSP Armor	Interlocked aluminum (IAC) or corrugated steel armor
Water Blocking	Gel-free dry-block on all OSP constructions
Fiber Types	OS2 9/125µm single-mode; OM4 available on armored
Fiber Counts	12 · 24 · 48 · 96 · 144 strands
Operating Temp	-40°C to 70°C

TECHNICAL SPECIFICATIONS

Parameter	ADSS (AT/AP)	Armored Loose Tube	All-Dielectric Loose Tube
Metallic Content	None	Steel/Al Armor	None
Max Span	Up to 800m+	N/A (duct/burial)	N/A (duct/aerial)
Max Voltage	500kV (AP)	N/A	No limit (dielectric)
Fiber Counts	12–144	12–144	12–144
Water Block	Dry-block	Dry-block	Dry-block
Burial Rating	Aerial only	Conduit/direct	Conduit/direct

PART / ORDER INFO

12 · 24 · 48 · 96 · 144 strand counts AT/AP jacket grades | Armored | All-Dielectric

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · FIBER OPTIC DIVISION

Rollable Ribbon & Armored Ribbon Fiber

IEC 60793-2-50 · TIA-598 · ITU-T G.652.D | Up to 6,912 Fibers | Mass-Fusion Ready

6,912 Fibers	~30 sec	Rollable Core	Steel/Al Option
Max Count	Splice/Ribbon	Ribbon Type	Armored Variant

PRODUCT OVERVIEW

Rollable ribbon fiber delivers the highest-density deployment technology available for hyperscale data center backbone, long-haul telecom, and metro networks. Rollable ribbon units flex for compact cross-sections while fanning out flat for mass-fusion splicing in ~30 seconds per 12-fiber ribbon. Available from 144 to 6,912 fiber counts in OS2. Armored ribbon variants add interlocked steel or aluminum armor for underground OSP runs and industrial environments requiring both high fiber count and mechanical protection.

KEY APPLICATIONS

- Hyperscale data center backbone and intra-campus high-count runs
- Long-haul and metro fiber — conduit-constrained corridors
- Telecom central office and PoP feeder cable
- Utility fiber backbone alongside transmission line ROW
- Underground duct and direct burial with armored protection

KEY SPECIFICATIONS

Fiber Counts	144 · 288 · 432 · 864 · 1728 · 3456 · 6912 (rollable) | 12–144 (armored)
Fiber Standard	OS2 9/125µm ITU-T G.652.D — ≤0.35 dB/km @ 1550nm
Splice Speed	Mass-fusion: 12-fiber ribbon in ~30 seconds
Water Blocking	Gel-free / dry-block — no gel cleanup at splice points
Armor (armored)	Interlocked aluminum (IAC) or corrugated steel; flat or rollable
Jacket Type	LSZH / PE / Armored PE depending on variant
Constructions	Central tube and stranded loose-tube available
Cassette Compat.	Compatible with ribbon fan-out and MTP/MPO cassette systems

TECHNICAL SPECIFICATIONS

Parameter	Rollable Ribbon (std)	High-Count (≥1728F)	Armored Ribbon
Fiber Type	OS2 9/125µm	OS2 9/125µm	OS2/OM4
Fiber Counts	144–864	1728–6912	12–144
Atten. @ 1550nm	≤0.35 dB/km	≤0.35 dB/km	≤0.35 dB/km
Water Blocking	Dry-block	Dry-block	Dry-block
Armor	None	None	IAC / Steel

PART / ORDER INFO

144–6912F (rollable) | 12–144F (armored) OS2/OM4 | Flat and rollable ribbon variants

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · FIBER OPTIC DIVISION

Indoor/Outdoor Breakout, Industrial Hybrid & HDPE Innerduct

NEC Art.770/IEC 60794-1/ASTM F2160 | Dual-Rated · Ruggedized · Fiber+Copper · Microduct

OFNP/OFNR	Up to 90W	-40°C	1.25" (33mm)
Fire Rating	Hybrid PoE	Min Install Temp	Innerduct Size

PRODUCT OVERVIEW

Indoor/outdoor dual-rated breakout cables eliminate the building entry transition splice — meeting both outdoor UV/moisture and indoor NEC plenum (OFNP) or riser (OFNR) fire ratings in a single cable. Individually jacketed sub-units enable direct LC/SC/ST connector termination without fanout kits. Industrial hybrid cables combine fiber strands with copper conductors (PoE+ 30W / PoE++ 90W) in a single TPE/PUR jacket rated for continuous flex to -40°C in harsh environments. HDPE innerduct (1.25") provides dedicated fiber pathway protection within conduit systems.

KEY APPLICATIONS

- Building entry — single continuous run from OSP to termination panel
- Direct LC/SC/ST connector termination without fanout hardware
- IP surveillance — fiber data + PoE copper in single hybrid run
- Industrial automation, SCADA, and IoT sensor network fiber
- Renewable energy site monitoring and control fiber
- HDPE innerduct for fiber cable protection within conduit systems

KEY SPECIFICATIONS

Indoor/Outdoor Ratings	Outdoor UV/moisture + indoor NEC OFNP (plenum) or OFNR (riser)
Breakout Sub-units	Individually 900µm tight-buffered per fiber — direct termination
Fiber Counts I/O	2 · 4 · 6 · 12 · 24 · 48 fibers
Hybrid Fiber+Copper	2–12 OS2/OM4 fibers + 2–8 copper conductors; PoE+/++ rated
Hybrid Jacket	Heavy-duty TPE or PUR — oil, chemical, UV resistant
Operating Temp	Hybrid: -40°C to 85°C standard | -55°C to 85°C extreme cold
Innerduct Size	1.25" (33mm) OD HDPE — smooth bore, 500/1000ft reels
Innerduct Std	ASTM F2160 · NEMA TC-7

TECHNICAL SPECIFICATIONS

Parameter	Indoor/Outdoor Breakout	Industrial Hybrid	HDPE Innerduct
Sub-Units	Individually jacketed	Fiber+copper pairs	N/A
Termination	Direct (no fanout)	Via hybrid adapter	N/A
Jacket	OFNP/OFNR/LSZH	TPE/PUR	HDPE
Flex Rating	Standard	Continuous flex	N/A
PoE Capable	No	Yes (up to 90W)	N/A
Fiber Counts	2–48	2–12	N/A

PART / ORDER INFO

2–48 strand breakout | Hybrid custom configs 1.25" innerduct — 500/1000ft reels

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

SECTION 2 · LOW VOLTAGE DIVISION

Low Voltage

Building Wire · Power Cable · Service Entrance · Control & Instrumentation

Full range of low voltage building wire, power cable, and specialty cable products for commercial, industrial, utility, and data center construction. NEC compliant. Manufactured to UL standards.

› THHN / THWN-2 Building Wire	› XHHW-2 XLPE Wire	› NM-B / AC / Flexible Cord
› Service Entrance SER/SEU	› USE-2 / RHH / RHW-2	› MC Metal-Clad Cable
› Tray Cable (TC) — Power & Control	› Control & Instrumentation Cable	

MIRABEL ENERGY · LOW VOLTAGE DIVISION

THHN / THWN-2 Building Wire

UL 83 · NEC Art.310 | 90°C Dry / 75°C Wet | Conduit & Raceway Installation

600V	90°C Dry	14AWG–1000 kcmil	NEC Art.310
Voltage Rating	Temp Rating	Size Range	Standard

PRODUCT OVERVIEW

Mirabel THHN/THWN-2 is the most widely specified building wire in commercial, industrial, and utility construction. PVC insulation with nylon jacket provides excellent resistance to heat, moisture, oil, and gasoline. Rated 90°C in dry locations and 75°C in wet locations (600V), it is suitable for use in conduit, raceways, cable trays, and open wiring in accordance with NEC Article 310. Available in solid and stranded configurations from 14 AWG through 1000 kcmil in all standard colors.

KEY APPLICATIONS

- Commercial and industrial building wiring in conduit and raceways
- Utility substation control building internal wiring
- Data center power distribution — conduit runs
- Panel feeders and branch circuit wiring
- Motor and equipment wiring in industrial facilities
- Solar PV array and inverter DC and AC wiring

KEY SPECIFICATIONS

Voltage Rating	600V (THHN) / 600V wet-rated (THWN-2)
Temperature	90°C dry / 75°C wet
Insulation	PVC (Thermoplastic)
Jacket	Nylon (THHN) — abrasion and oil resistant
Conductor	Solid or stranded bare copper; aluminum available
Size Range	14 AWG – 1000 kcmil
Standards	UL 83 · NEC Article 310
Colors	Black, white, red, blue, green, yellow, orange, brown, gray, plus custom

TECHNICAL SPECIFICATIONS

AWG/kcmil	Stranded Area (mm²)	Ampacity @ 90°C (conduit)	OD (approx.)
12 AWG	3.31	30A	4.5mm
10 AWG	5.26	40A	5.2mm
8 AWG	8.37	55A	6.3mm
4 AWG	21.1	95A	8.9mm
1/0 AWG	53.5	150A	12.7mm
350 kcmil	177	350A	20.3mm
500 kcmil	253	430A	23.1mm

PART / ORDER INFO

14 AWG – 1000 kcmil | Solid & stranded | All standard colors

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

XHHW-2 — Cross-Linked Polyethylene Wire

UL 44 · NEC Art.310 | 90°C Wet/Dry | XLPE Insulation | Conduit & Tray

600V	90°C Wet/Dry	XLPE	14AWG–1000 kcmil
Voltage Rating	Temp Rating	Insulation Type	Size Range

PRODUCT OVERVIEW

Mirabel XHHW-2 wire features cross-linked polyethylene (XLPE) insulation providing superior moisture and heat resistance compared to standard PVC — rated 90°C in both wet and dry locations at 600V. XLPE insulation offers improved dielectric properties, enhanced thermal stability, and better resistance to chemical and UV exposure. Suitable for conduit, cable trays, and open wiring in commercial, industrial, and utility applications. Widely specified for solar PV, underground raceways, and wet industrial environments where THHN is insufficient.

KEY APPLICATIONS

- Solar PV array wiring — wet-rated XLPE required for outdoor conduit
- Underground raceways and conduit in wet or damp locations
- Industrial plant wiring in chemical or moisture-exposed areas
- Utility substation and switchyard internal cable runs
- Cable tray installations requiring 90°C wet-rated conductor
- Direct replacement for RHW-2 in conduit applications

KEY SPECIFICATIONS

Voltage Rating	600V
Temperature	90°C wet and dry (dual-rated)
Insulation	Cross-linked polyethylene (XLPE)
Conductor	Stranded bare copper; aluminum available
Size Range	14 AWG – 1000 kcmil
Jacket	No jacket (direct insulation) — suitable for conduit/tray
Standards	UL 44 · NEC Article 310
Advantages	Superior moisture resistance vs. THHN; no separate THWN rating needed

TECHNICAL SPECIFICATIONS

AWG/kcmil	Insulation Thickness	Ampacity @ 90°C (conduit)
12 AWG	0.045"	30A
10 AWG	0.045"	40A
8 AWG	0.060"	55A
4 AWG	0.060"	95A
2/0 AWG	0.080"	175A
4/0 AWG	0.095"	230A
500 kcmil	0.110"	430A

PART / ORDER INFO

14 AWG – 1000 kcmil | Stranded copper | 600V XLPE

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · LOW VOLTAGE DIVISION

NM-B / AC Cable / Flexible Cord

UL 719 · UL 4 · NEC Art.334/320 | Residential & Light Commercial | Flexible Power

600V	90°C	Steel Armor	SJOOW/SOW
Voltage Rating	NM-B Conductor	AC Cable	Flex Cord Grades

PRODUCT OVERVIEW

Mirabel NM-B (Romex) is the standard non-metallic sheathed cable for residential and light commercial construction, featuring THHN conductors with a PVC outer jacket, rated 90°C (60°C ampacity) at 600V. AC Cable (Armored Cable / BX) adds interlocked steel armor for mechanical protection in commercial locations where exposed wiring requires protection from physical damage. Flexible cord products cover portable power applications from light-duty extension cords (SPT/SJT/SJ) through heavy-duty portable power cord (SO/SOW) for industrial equipment and machinery.

KEY APPLICATIONS

- Residential wiring — branch circuits, outlets, fixtures (NM-B)
- Commercial construction in walls, attics, and floor assemblies
- Locations requiring mechanical protection from physical damage (AC)
- Portable power tools, appliances, and equipment (flexible cord)
- Extension cords and portable equipment connections
- Industrial machinery and heavy equipment portable power (SO/SOW)

KEY SPECIFICATIONS

NM-B Voltage	600V | 90°C conductor / 60°C ampacity rating
NM-B Jacket	PVC outer jacket, THHN conductors
NM-B Sizes	14/2, 14/3, 12/2, 12/3, 10/2, 10/3 AWG with ground
AC Cable Armor	Interlocked galvanized steel — mechanical protection
AC Cable Sizes	14–8 AWG; 2 and 3 conductor configurations
Flex Cord Types	SPT, SJT, SJOOW, SO, SOW — light through heavy-duty
Flex Cord Rating	300V–600V; 60°C to 90°C depending on type
Flex Cord Jacket	PVC or rubber; oil-resistant SOW for industrial use

TECHNICAL SPECIFICATIONS

Product	Type	Voltage	Temp Rating	Jacket
NM-B (Romex)	Non-metallic sheathed	600V	90°C conductor	PVC
AC Cable (BX)	Armored cable	600V	90°C conductor	Steel interlocked
SJT Cord	Light-duty flexible	300V	60°C	PVC
SJOOW Cord	Industrial flex	300V	60°C	Rubber, oil-res.
SO / SOW	Heavy portable	600V	60°C	Rubber, oil-res.

PART / ORDER INFO

NM-B 14/2 through 10/3 w/ground | AC 14–8 AWG Flex cord — custom lengths and configurations

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · LOW VOLTAGE DIVISION

Service Entrance & Feeder Cable — SER / SEU

UL 854 · NEC Art.230/338 | 600V | Overhead & Underground Service Entrance

600V	Wet Rated	Al or Cu	NEC Art.230
Voltage Rating	Location Rating	Conductor Material	Standard

PRODUCT OVERVIEW

Mirabel SER (service entrance cable, round) and SEU (service entrance cable, unarmored) are engineered for the service entrance application from the utility meter to the main panel, as well as feeder runs from the main panel to subpanels. Both types feature XHHW-2 or RHW-2 rated conductors suitable for use in wet locations, with a PVC or polyethylene outer jacket designed to withstand the mechanical and environmental demands of service entrance installation. Available in aluminum or copper conductors.

KEY APPLICATIONS

- Utility meter to main electrical panel service entrance
- Main panel to subpanel feeder applications
- Overhead service drop and meter socket connections
- Underground service lateral — conduit or direct burial
- Manufactured housing and mobile home service entrance
- Commercial building main service and feeder applications

KEY SPECIFICATIONS

Voltage Rating	600V — wet and dry locations
Temperature	75°C wet / 90°C dry
Conductors	XHHW-2 or RHW-2 rated; aluminum or copper
SER Construction	Two insulated conductors + bare aluminum neutral; round cross-section
SEU Construction	Two insulated conductors; concentric neutral — flat configuration
Sizes Available	#4 AWG through 500 kcmil; 2-wire + neutral configurations
Standards	UL 854 · NEC Articles 230, 338
Jacket	PVC or polyethylene outer jacket

TECHNICAL SPECIFICATIONS

Size	Conductors	Typical Use	Ampacity (Cu/Al)
#4 AWG	2+N	Small residential	85A/65A
#2 AWG	2+N	Standard residential	95A/75A
#1/0 AWG	2+N	Large residential/light commercial	150A/120A
#2/0 AWG	2+N	200A residential service	175A/135A
#4/0 AWG	2+N	Large commercial	230A/180A
350 kcmil	2+N	Heavy commercial	310A/255A

PART / ORDER INFO

#4 AWG – 500 kcmil | Aluminum or copper SER (round) and SEU (flat) configurations

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

USE-2 / RHH / RHW-2 Underground & Wet-Rated Cable

UL 44 · NEC Art.310/338 | 600V | Solar PV · Underground · Wet Locations

600V	90°C Wet/Dry	XLPE	Solar PV Listed
Voltage Rating	Temp Rating (RHW-2)	Insulation Type	USE-2

PRODUCT OVERVIEW

Mirabel USE-2 (Underground Service Entrance, 2) is a single-conductor cable designed for underground service entrance applications and direct burial in conduit or trench. RHH and RHW-2 are cross-linked polyethylene (XLPE) insulated conductors rated for high temperature dry (RHH: 90°C) and wet locations (RHW-2: 90°C wet/dry) — widely specified for solar PV systems (UL listed for PV use), underground raceways, and industrial wet locations where superior moisture and thermal performance is required.

KEY APPLICATIONS

- Solar PV array DC wiring — USE-2 and RHH/RHW-2 listed for PV
- Underground service entrance from meter to panel
- Underground conduit and direct burial wiring runs
- Industrial wet locations requiring 90°C wet-rated conductors
- Utility substation underground cable runs in conduit
- Replacement for THWN in applications requiring XLPE insulation

KEY SPECIFICATIONS

Voltage Rating	600V (USE-2, RHH, RHW-2)
Temperature RHH	90°C dry only
Temperature RHW-2	90°C wet and dry — fully wet-rated
Insulation	Cross-linked polyethylene (XLPE)
USE-2 Feature	UL listed for direct burial; approved for solar PV applications
Conductor	Stranded bare copper; aluminum available
Size Range	14 AWG – 1000 kcmil
Standards	UL 44 · NEC Articles 310, 338

TECHNICAL SPECIFICATIONS

Type	Voltage	Wet Rating	Dry Rating	Solar PV Listed
USE-2	600V	Yes	Yes	Yes
RHH	600V	No	90°C	No
RHW-2	600V	90°C	90°C	No
XHHW-2	600V	90°C	90°C	No

PART / ORDER INFO

14 AWG – 1000 kcmil | Stranded copper | USE-2 solar PV listed

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · LOW VOLTAGE DIVISION

MC Metal-Clad & TC Tray Cable

UL 1569 · UL 1277 · NEC Art.330/392 | 600V | Commercial & Industrial

600V	Al/Steel Armor	Multi-Conductor	NEC Art.330/392
Voltage Rating	MC Cable	TC Cable	Standards

PRODUCT OVERVIEW

Mirabel MC (Metal-Clad) cable features THHN or XHHW-2 conductors in an interlocked aluminum or galvanized steel armor, providing mechanical protection for exposed wiring in commercial and industrial buildings without conduit. Available in 2, 3, and 4-conductor configurations with separate equipment grounding conductor. TC (Tray Cable) is a multi-conductor power and control cable listed for use in cable trays, conduit, and direct burial — the workhorse of industrial power distribution, process control wiring, and instrumentation in manufacturing, utilities, and data centers.

KEY APPLICATIONS

- Commercial construction — branch circuit and feeder wiring without conduit (MC)
- Industrial plant exposed wiring requiring mechanical protection (MC)
- Cable tray power distribution in industrial and utility facilities (TC)
- Process control wiring — PLC panels to field devices (TC)
- Data center power distribution in open cable tray systems (TC)
- Multi-conductor control and instrumentation runs (TC)

KEY SPECIFICATIONS

MC Cable Armor	Interlocked aluminum or galvanized steel armor
MC Cable Conductors	THHN or XHHW-2 insulated; separate bare/green equipment ground
MC Cable Sizes	14 AWG – 2/0 AWG; 2, 3, and 4 conductor configurations
MC Cable Rating	600V, 90°C
TC Cable Construction	Twisted or parallel conductors; PVC or LSZH jacket
TC Cable Sizes	18 AWG – 2/0 AWG; 2–37 conductor configurations
TC Cable Rating	600V, 75°C or 90°C depending on insulation type
TC Cable Uses	Power, control, and instrumentation tray wiring

TECHNICAL SPECIFICATIONS

Product	Voltage	Armor	Conductor	Sizes
MC Cable (Al armor)	600V	Interlocked Al	THHN/XHHW-2	14–2/0 AWG
MC Cable (steel armor)	600V	Interlocked steel	THHN/XHHW-2	14–2/0 AWG
TC Power Cable	600V	None (jacket)	THHN/XHHW-2	12–2/0 AWG
TC Control Cable	600V	None (jacket)	THWN/XHHW-2	18–10 AWG
TC Instrumentation	600V	Overall shield	TFFN	22–18 AWG

PART / ORDER INFO

MC: 14–2/0 AWG | TC: 18 AWG – 2/0 AWG 2–37 conductor configurations available

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · LOW VOLTAGE DIVISION

Control & Instrumentation Cable

UL 508 · UL 2250 · NEC Art.725 | 300V–600V | Shielded & Unshielded

300V–600V	Overall + IP Shield	2–37 Pairs	LSZH Option
Voltage Range	Shield Options	Conductor Config	Jacket

PRODUCT OVERVIEW

Mirabel control and instrumentation cables provide reliable signal transmission and control circuit wiring for industrial automation, process control, and utility SCADA systems. Available in shielded (individually and overall foil or braid) and unshielded configurations, these multi-pair and multi-conductor cables are engineered for noise rejection, flexibility, and long-term performance in demanding industrial environments. LSZH jacket options are available for enclosed and sensitive facilities.

KEY APPLICATIONS

- PLC panel to field device control wiring
- Instrumentation and sensor signal cables — 4–20mA, RTD, thermocouple
- SCADA and DCS system field wiring in utility and industrial plants
- Building automation and HVAC control systems
- Data center PDU and UPS control wiring
- Safety system instrumentation and emergency shutdown (ESD) wiring

KEY SPECIFICATIONS

Voltage Rating	300V (instrumentation) to 600V (control)
Conductor Sizes	22 AWG – 12 AWG; solid or stranded tinned copper
Pair Counts	2–37 pairs; also multi-conductor (non-paired) configurations
Shielding Options	Individual pair foil + drain | Overall foil + drain | Braid overall + foil IP
Insulation	PVC or XLPE
Jacket Options	PVC, LSZH, or armored LSZH for industrial environments
Operating Temp	-40°C to 75°C (PVC) / -40°C to 90°C (XLPE insulated)
Standards	UL 508, UL 2250, NEC Article 725 Class 1/2/3

TECHNICAL SPECIFICATIONS

Configuration	Shielding	Voltage	Application
Multi-pair (2–37 pairs)	Individual foil + drain	300V	Analog instrumentation
Multi-pair (2–37 pairs)	Overall foil + drain	300V	General control/signals
Multi-conductor (2–12C)	Overall braid	600V	PLC control circuits
Multi-conductor armored	IP foil + armor	600V	Harsh environment control
Thermocouple ext.	IP foil + drain	300V	Temperature measurement

PART / ORDER INFO

22–12 AWG | 2–37 pairs | Shielded & unshielded PVC, XLPE, LSZH jacket options

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

SECTION 3 · MEDIUM VOLTAGE DIVISION

Medium Voltage

5kV · 15kV · 25kV · 35kV · MV-105 · URD · Armored MV

Utility and industrial grade medium voltage cables from 5kV through 35kV — XLPE and EPR insulated, in standard and MV-105 high-temperature ratings. URD concentric neutral and armored MV available.

› 5kV Distribution Cable	› 15kV Primary Distribution	› 25kV Subtransmission
› 35kV Subtransmission	› MV-105 High-Temp Cable	› URD Concentric Neutral
› Armored Medium Voltage	› EPR Insulated MV	

MIRABEL ENERGY · MEDIUM VOLTAGE DIVISION

5kV / 15kV Primary Distribution Cable

ICEA S-94-649 · UL 1072 · AEIC CS8 | 90°C Continuous | Utility Distribution

5kV / 15kV	90°C / 130°C	XLPE or EPR	100% / 133%
Voltage Class	Cont./Emergency	Insulation	Insulation Level

PRODUCT OVERVIEW

Mirabel 5kV and 15kV medium voltage cables are the backbone of North American utility distribution systems — engineered for continuous operation at 90°C conductor temperature with an emergency overload rating of 130°C and short-circuit withstand of 250°C. XLPE-insulated cables offer superior dielectric performance, moisture resistance, and thermal stability versus EPR. Available in 100% and 133% insulation levels for solidly grounded and resistance grounded systems respectively.

KEY APPLICATIONS

- Utility overhead-to-underground conversion (URD and primary feeder)
- Industrial plant medium voltage power distribution
- Substation yard and switchgear feed cables
- Renewable energy — wind and solar farm collector system MV cables
- Data center utility point of delivery (POD) MV feed cable
- Commercial building primary service entrance at 5kV–15kV

KEY SPECIFICATIONS

Voltage Classes	5kV and 15kV (8.7/15kV full rating)
Insulation Levels	100% (solidly grounded) and 133% (resistance grounded)
Insulation Types	XLPE (cross-linked polyethylene) or EPR (ethylene propylene rubber)
Conductor	Compact round or sector-shaped; copper or aluminum
Concentric Neutral	Copper wires or copper tape; helically applied
Jacket	PVC, LSZH, or polyethylene; sunlight resistant available
Operating Temp	90°C continuous | 130°C emergency | 250°C short-circuit
Standards	ICEA S-94-649 · UL 1072 · AEIC CS8 · IEEE 576

TECHNICAL SPECIFICATIONS

Voltage	Insulation Level	Conductor Range	Insulation (XLPE)
5kV (5/5kV)	100% / 133%	#2 AWG – 1000 kcmil	4.93 mm (133%)
15kV (8.7/15kV)	100% / 133%	#1 AWG – 1000 kcmil	5.59 mm (133%)
15kV EPR	100% / 133%	#1 AWG – 750 kcmil	5.59 mm (133%)

PART / ORDER INFO

#2 AWG – 1000 kcmil | Cu or Al | XLPE or EPR 100% and 133% insulation levels

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · MEDIUM VOLTAGE DIVISION

25kV / 35kV Subtransmission & MV-105 Cable

ICEA S-94-649 · UL 1072 · AEIC CS8/CS9 | 90°C/105°C | Subtransmission & Industrial

25kV / 35kV	90°C or 105°C	EPR / XLPE	133% Insulation
Voltage Class	Temp Rating	Insulation	Resistance Grounded

PRODUCT OVERVIEW

Mirabel 25kV (14.4/25kV) and 35kV (20/35kV) medium voltage cables serve subtransmission feeders, large industrial plants, and utility interconnection circuits where standard 15kV class is insufficient. The MV-105 designation (105°C continuous rating) provides approximately 25% more ampacity compared to standard 90°C MV cable in the same conductor size — ideal for high-load applications where increasing conductor size is impractical. Available with EPR insulation and CPE jacket for maximum flexibility and chemical resistance.

KEY APPLICATIONS

- Utility subtransmission feeders at 25kV and 35kV
- Large industrial plant primary service at 25kV–35kV
- Wind and solar farm medium voltage collector at higher voltages
- Substation bus and transformer interconnection cable
- Mining operations primary power distribution
- Data center campus subtransmission feed cable

KEY SPECIFICATIONS

Voltage Classes	25kV (14.4/25kV) and 35kV (20/35kV)
MV-105 Rating	105°C continuous — higher ampacity; 140°C emergency
Insulation	EPR (ethylene propylene rubber) or XLPE; flexible for 35kV+
Concentric Neutral	Copper wires; 1/3 neutral, full neutral, or drain wire options
CPE Jacket	Chlorinated polyethylene — chemical resistant, flexible
Conductor	Compact or standard round; copper or aluminum
Insulation Level	133% standard for 35kV distribution
Standards	ICEA S-94-649 · UL 1072 · AEIC CS8/CS9

TECHNICAL SPECIFICATIONS

Voltage	Conductor Range	Insulation (XLPE)	Notes
25kV (14.4/25kV)	#1 AWG – 1000 kcmil	7.87 mm	133% level
35kV (20/35kV)	#1 AWG – 750 kcmil	10.29 mm (EPR)	133% level standard
35kV MV-105 (EPR/CPE)	1/0 AWG – 750 kcmil	EPR — max flex	105°C rated

PART / ORDER INFO

#1 AWG – 1000 kcmil | Cu or Al | XLPE or EPR 25kV and 35kV | MV-105 high-temp grades

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · MEDIUM VOLTAGE DIVISION

URD Concentric Neutral & Armored MV Cable

ICEA S-97-682 · ICEA S-94-649 | 15kV–35kV | Underground Residential & Industrial

15kV / 35kV	Direct Burial	Steel/Al Armor	Cu Neutral
Voltage Class	URD Installation	Armored Variant	Concentric Neutral

PRODUCT OVERVIEW

Mirabel URD (Underground Residential Distribution) concentric neutral cables are engineered specifically for the utility direct-buried feeder and service lateral market — the most widely installed MV cable type in North America. The helically applied concentric neutral wires serve as both the system neutral and the cable shield, providing simple, low-cost installation without a separate neutral conductor. Armored MV cable adds interlocked steel or aluminum armor over the concentric neutral cable construction for environments requiring mechanical protection from excavation, rodent damage, or direct burial without conduit.

KEY APPLICATIONS

- Utility direct-buried feeder and service lateral (URD standard application)
- Underground residential and commercial distribution circuits
- Industrial plant underground MV primary distribution
- Direct buried primary feeder without conduit (URD)
- Armored: MV cable in rocky or corrosive soil conditions
- Armored: Mine and industrial environments with mechanical hazards

KEY SPECIFICATIONS

URD Construction	Single or 3-conductor; helical copper concentric neutral wires
Neutral Options	Full neutral, 1/3 neutral, or 1/6 neutral; copper only
Voltage Classes	15kV (8.7/15kV) and 35kV (20/35kV) URD configurations
URD Jacket	Linear low-density polyethylene (LLDPE) outer jacket
Armored Variant	Interlocked aluminum or steel armor over URD construction
Burial Rating	Rated for direct burial per ICEA S-97-682
Insulation	XLPE standard; EPR available
Standards	ICEA S-97-682 (URD) · ICEA S-94-649 (armored MV)

TECHNICAL SPECIFICATIONS

Product	Voltage	Neutral	Armor	Burial
URD Single-Conductor	15kV	Cu concentric neutral	None	Direct burial
URD 3-Conductor	15kV/35kV	Cu concentric neutral	None	Direct burial
Armored URD (IAC)	15kV/35kV	Cu concentric neutral	Interlocked Al/Steel	In conduit or direct

PART / ORDER INFO

#6 AWG – 1000 kcmil | Cu or Al 15kV and 35kV | Full, 1/3, and 1/6 neutral options

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

SECTION 4 · HIGH VOLTAGE DIVISION

High Voltage

69kV · 138kV · 230kV · 345kV · 500kV · HVDC · Submarine

Transmission-grade high voltage cable from 69kV through 500kV+ in XLPE and EPR — including HVDC, SCFF/pipe-type, submarine, and complete HV cable accessory systems. Project engineering available.

› 69kV / 138kV XLPE & EPR	› 230kV XLPE Transmission	› 345kV / 500kV Bulk Transmission
› HVDC XLPE Cable	› SCFF / Pipe-Type Cable	› Submarine Subsea HV Cable
› HV Joints & Terminations		

MIRABEL ENERGY · HIGH VOLTAGE DIVISION

69kV / 138kV XLPE & EPR Transmission Cable

IEEE 404 · AEIC CG5/CG6 · IEC 60840 | 69kV–138kV | Underground Transmission

69kV / 138kV	XLPE or EPR	250–2500 kcmil	IEEE 404
Voltage Class	Insulation	Conductor Range	Standard

PRODUCT OVERVIEW

Mirabel 69kV and 138kV extruded cables represent the most commonly specified underground transmission voltage class for utility interconnections, substation-to-substation feeds, and urban underground transmission circuits. XLPE-insulated designs provide excellent dielectric performance, low dielectric losses, and ease of installation. EPR variants offer superior flexibility and resistance to moisture treeing for challenging installations. Copper or aluminum conductors are available from 250 kcmil through 2500 kcmil.

KEY APPLICATIONS

- Underground utility substation-to-substation transmission interconnects
- Urban underground transmission — street and tunnel installation
- Industrial plant HV service at 69kV–138kV
- Renewable energy plant HV collection and export at 69kV
- Substation bus and transformer high-side cable connections
- EHV underground circuits replacing overhead transmission

KEY SPECIFICATIONS

Voltage Classes	69kV (39/69kV) and 138kV (79.6/138kV)
Insulation	XLPE (cross-linked PE) or EPR; extruded triple-layer
Conductor	Compact round copper or aluminum; 250–2500 kcmil
Semi-Con Screens	Extruded conducting screens — inner and outer
Metallic Shield	Copper tape or wire corrugated aluminum; longitudinal water blocking
Jacket	PE or LSZH; corrugated PE for self-extinguishing
Operating Temp	90°C continuous | 130°C emergency
Standards	IEEE 404 · AEIC CG5/CG6 · IEC 60840

TECHNICAL SPECIFICATIONS

Voltage Class	Insulation Thickness (XLPE)	Conductor Range	Metallic Shield
69kV (39/69kV)	14mm XLPE	250–2500 kcmil	Cu tape/wire
138kV (79.6/138kV)	18mm XLPE	250–2500 kcmil	Cu corrugated Al
69kV EPR	14mm EPR	250–1500 kcmil	Cu tape
138kV EPR	18mm EPR	250–1500 kcmil	Cu tape/wire

PART / ORDER INFO

250 kcmil – 2500 kcmil | Cu or Al 69kV and 138kV | XLPE and EPR

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · HIGH VOLTAGE DIVISION

230kV / 345kV / 500kV XLPE Bulk Transmission

IEC 62067 · IEEE 1532 · AEIC CG7 | 230kV–500kV | EHV Underground Bulk Power

230kV–500kV	XLPE Triple-Layer	Cu/Al Sheath	Duct or Burial
Voltage Class	Insulation	Metallic Barrier	Installation

PRODUCT OVERVIEW

Mirabel extra high voltage (EHV) XLPE cables at 230kV, 345kV, and 500kV represent the pinnacle of underground power transmission technology — enabling utility-scale bulk power transfer equivalent to overhead line ratings in urban, environmentally sensitive, and congested right-of-way corridors. These cables feature precision extruded triple-layer XLPE insulation, corrugated aluminum metallic sheaths with longitudinal and radial water blocking, and oversized conductor designs optimized for maximum thermal ampacity in duct and direct burial systems.

KEY APPLICATIONS

- Bulk power transmission — underground alternative to EHV overhead lines
- Urban underground transmission in congested ROW corridors
- Submarine crossing approach cables at 230kV–500kV
- Grid interconnection projects and underground tie lines
- Offshore wind farm export cable at 230kV–500kV
- Underground reliability upgrade for critical urban substations

KEY SPECIFICATIONS

Voltage Classes	230kV (133/230kV), 345kV (199/345kV), 500kV (289/500kV)
Insulation	Extruded triple-layer XLPE; clean room cross-head extrusion required
Conductor	Compact round or Milliken copper; 1000–3500 kcmil typical
Metallic Sheath	Corrugated aluminum or lead alloy; longitudinal + radial water blocking
Jacket	HDPE or LLDPE; corrosion protection coating available
Operating Temp	90°C continuous | 130°C emergency | 250°C short-circuit
Installation	Duct bank, direct burial, tunnel, or J-tube submarine approach
Standards	IEC 62067 · IEEE 1532 · AEIC CG7

TECHNICAL SPECIFICATIONS

Voltage Class	Insulation Thickness (XLPE)	Conductor Size	Metallic Sheath
230kV (133/230kV)	~28mm XLPE	500–3000 kcmil	Corrugated Al
345kV (199/345kV)	~35mm XLPE	1000–3500 kcmil	Corrugated Al/Lead
500kV (289/500kV)	~42mm XLPE	1000–3500 kcmil	Lead alloy / Al

PART / ORDER INFO

230kV, 345kV, and 500kV 500 kcmil – 3500 kcmil | Custom project engineering

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

HVDC XLPE & SCFF/Pipe-Type Cable

IEC 62895 (HVDC XLPE) · IEEE 1350 (SCFF) | DC Transmission & Legacy Fluid-Filled

HVDC XLPE	±200kV–±525 kV	SCFF Available	IEC 62895
DC Transmission	DC Voltage Range	Legacy Fluid-Filled	HVDC Standard

PRODUCT OVERVIEW

Mirabel HVDC XLPE cables are engineered for the rapidly growing market of high-voltage direct current transmission — including offshore wind HVDC export, long-distance bulk transmission, and back-to-back HVDC interconnections. HVDC XLPE differs fundamentally from AC XLPE in space charge management, compound formulation, and testing requirements. Self-contained fluid-filled (SCFF) and pipe-type cables serve existing fluid-filled system upgrades, cable accessories, and spare conductor applications for utilities with legacy HPFF or SCFF infrastructure.

KEY APPLICATIONS

- Offshore wind farm HVDC export cables to shore and converter stations
- Long-distance HVDC transmission bipoles and monopoles
- Underground HVDC back-to-back interconnections between AC grids
- Replacement conductor and accessories for legacy SCFF/HPFF systems
- Submarine HVDC crossings — rivers, straits, and short sea crossings
- Grid modernization — AC-to-DC underground transmission conversion

KEY SPECIFICATIONS

HVDC XLPE Voltage	±200kV to ±525kV mass-impregnated or XLPE designs
HVDC Insulation	Specially formulated XLPE for DC space charge management
HVDC Conductor	Milliken or compact round copper; 1000–3500 kcmil
HVDC Sheath	Lead alloy or corrugated aluminum with moisture barrier
SCFF Design	Single-core self-contained fluid-filled with pressurized insulating oil
SCFF Application	Legacy system maintenance, spare conductors, and accessories
Standards	IEC 62895 (HVDC XLPE) · IEEE 1350 (SCFF)
Testing	Type tested per IEC 62895 pre-qualification protocol

TECHNICAL SPECIFICATIONS

Type	Voltage Range	Application	Insulation
HVDC XLPE	±200kV–±525kV	New HVDC projects	XLPE (DC-grade)
HVDC XLPE Sub.	±200kV–±320kV	Offshore/submarine	XLPE + wire armor
SCFF	Up to 500kV AC/DC	Legacy system upgrade	Fluid-filled (oil)
Pipe-Type (HPFF)	Up to 345kV	Legacy infrastructure	Fluid-filled

PART / ORDER INFO

HVDC ±200kV–±525kV | SCFF to 500kV Project engineering required — contact GCP Energy

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · HIGH VOLTAGE DIVISION

Submarine / Subsea HV Cable & HV Accessories

CIGRE B1 · IEC 60502-4 | 69kV–500kV | Subsea Transmission & Cable Accessories

69kV–500kV	Steel Wire Armor	Pre-Molded	HVAC & HVDC
Voltage Range	Submarine Const.	Accessories	Both Available

PRODUCT OVERVIEW

Mirabel submarine high voltage cables are engineered for underwater power transmission in offshore wind, island interconnections, river crossings, and subsea grid links. Construction includes armored designs with galvanized steel wire armor (SWA) for tensile strength during installation and service on the seabed. HVDC and HVAC submarine variants are available from 69kV through 500kV. HV cable accessories (joints and terminations) are factory-prefabricated, pre-molded EPDM or silicone rubber components engineered to match the cable dielectric design — maintaining system integrity at voltages from 69kV through 500kV.

KEY APPLICATIONS

- Offshore wind farm inter-array and export subsea cables
- Island and peninsula HV interconnections — subsea link
- River, strait, and fjord AC/DC power transmission crossings
- Submarine approach cables for land-based transmission
- In-line joints and transition joints for EHV underground circuits
- Outdoor and GIS terminations for 69kV–500kV substation termination

KEY SPECIFICATIONS

Submarine Cable	Single or 3-conductor; galvanized steel wire armor (SWA)
Voltage Range	69kV through 500kV HVAC; ±200kV–±525kV HVDC submarine
Armor	Single layer SWA (shallow) or double SWA (deep water ≥500m)
Filler/Bedding	PP yarn bedding; bitumen-coated armor wires
HV Joints	Pre-molded EPDM or silicone; straight/transition joints, 69–500kV
HV Terminations	Outdoor and GIS-type; oil-filled or dry-design
Factory Testing	Each joint and termination type-tested per IEEE 48/404
Installation	Cable lay vessel, J-tube pull-in, and ROV burial

TECHNICAL SPECIFICATIONS

Accessory Type	Voltage Class	Design	Application
Straight Joint	69kV–500kV	Pre-molded EPDM/SiR	Field splicing of cable sections
Transition Joint	69kV–345kV	Pre-molded hybrid	XLPE-to-XLPE or XLPE-to-SCFF
Outdoor Termination	69kV–500kV	Composite or porcelain	Air-insulated substation
GIS Termination	69kV–500kV	Oil-filled or dry	Gas-insulated switchgear
Submarine Joint	69kV–320kV	Factory joint (rigid)	Subsea factory jointing

PART / ORDER INFO

Submarine: 69kV–500kV | Accessories: 69kV–500kV Project engineering and factory testing included

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

SECTION 5 · MINING & MARINE DIVISION

Mining & Marine

MSHA Trailing · Portable Power · Shipboard IEEE 1580 · Submersible

MSHA-compliant mining cable, portable power cable, marine shipboard cable, offshore platform cable, and submersible pump cable — engineered for the most demanding environments on earth.

› Type SHD-GC Trailing (MSHA)	› Type W / G / G-GC Portable	› Shuttle Car Machine Cable
› Marine Power Cable	› Shipboard IEEE 1580	› Offshore Platform Cable
› Submersible Pump Cable		

MIRABEL ENERGY · MINING & MARINE DIVISION

Type SHD-GC Trailing Cable — MSHA

MSHA 30 CFR Part 18 · ICEA S-75-381 | Underground Mining | Shielded Ground Check

MSHA Compliant	Individually Shielded	CPE/CR Jacket	2kV / 5kV
30 CFR Part 18	Phase Construction	Flame Resistant	Voltage Rating

PRODUCT OVERVIEW

Mirabel Type SHD-GC (Shielded, Heavy-Duty, Ground Check) trailing cable is the primary cable for underground coal mining trailing applications — including continuous miners, longwall shearers, shuttle cars, and face equipment. The shielded construction (individually shielded phases) and integrated ground check conductor meet the full requirements of MSHA 30 CFR Part 18. Flame-resistant CPE jacket and insulation compound provide fire safety compliance in classified mining environments.

KEY APPLICATIONS

- Underground coal mine continuous miner trailing cable
- Longwall shearer and AFC drive trailing cable
- Shuttle car and ram car power cable
- Roof bolter and other mobile mining equipment
- Face conveyor and stage loader drive cable
- Any MSHA Part 18-regulated mining cable application

KEY SPECIFICATIONS

MSHA Standard	30 CFR Part 18 — full compliance; MSHA acceptance required
Voltage Rating	2000V (2kV) and 5000V (5kV) configurations
Conductor Insulation	EPR (ethylene propylene rubber) — thermoset, flame resistant
Shielding	Individual phase copper tape or braid shield with drain wire
Ground Check	Integrated ground check conductor for continuous ground monitoring
Jacket	CPE (chlorinated polyethylene) or CR (neoprene) — flame resistant
Temperature Rating	90°C conductor; -35°C cold bend rating
Flex/Torsion	Engineered for continuous trailing duty with torsional stress

TECHNICAL SPECIFICATIONS

Voltage	Conductors	Ground Check	MSHA Accepted
2kV	3/C + GC	Yes	Yes
5kV (SHD-GC)	3/C + GC	Yes	Yes
5kV (SHDC)	3/C + GC + control	Yes	Yes
2kV Heavy Longwall	3/C + GC + pilot	Yes	Yes

PART / ORDER INFO

Custom AWG, conductor count, and reel lengths MSHA documentation and test data available

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · MINING & MARINE DIVISION

Type W / G / G-GC Portable Power Cable

UL 62 · MSHA 30 CFR Part 18 | 600V–2kV | Portable & Trailing Cable

600V–2000V	MSHA G/G-GC	EPR Insulated	Multiple AWG
Voltage Range	Mining Rated	Thermoset	Conductor Range

PRODUCT OVERVIEW

Mirabel Type W and Type G portable power cables are flexible, durable cables designed for portable power applications from light industrial use through heavy mining environments. Type W (600V) provides flexible portable power for generators, welders, and industrial equipment. Type G (2000V) and Type G-GC (2000V with integrated ground check) are MSHA-compliant heavy portable cables for surface and underground mining equipment, quarry operations, and industrial drag line applications — offering superior durability and flexibility in demanding field conditions.

KEY APPLICATIONS

- Type W: portable power for generators, welders, and compressors
- Type W: construction site temporary power distribution
- Type G: surface mining — draglines, shovels, and portable equipment
- Type G-GC: underground and surface mining with ground check
- Quarry and aggregate processing portable power
- Industrial plant maintenance and temporary power applications

KEY SPECIFICATIONS

Type W Voltage	600V — flexible portable power; EPR or neoprene insulation
Type G Voltage	2000V — heavy portable mining cable
Type G-GC	2000V with integrated ground check conductor — MSHA compliant
Conductor	Flexible stranded bare copper; Class G and H stranding
Insulation	EPR (Type G/G-GC) or CR/EPDM (Type W)
Jacket	CPE, CR, or rubber depending on type
MSHA Compliance	Types G and G-GC: MSHA 30 CFR Part 18 compliant
Temperature	-40°C to 90°C depending on grade

TECHNICAL SPECIFICATIONS

Type	Voltage	Ground Check	MSHA	Application
Type W	600V	No	No	Portable industrial
Type G	2kV	No	Yes	Surface mining
Type G-GC	2kV	Yes	Yes	Underground mining
Type W Heavy	600V	No	No	Welding/generator

PART / ORDER INFO

Type W: 10 AWG – 500 kcmil | Type G/G-GC: custom All standard and custom conductor counts

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

MIRABEL ENERGY · MINING & MARINE DIVISION

Shuttle Car, Mining Machine & Marine Power Cable

IEEE 1580 · MSHA 30 CFR Part 18 | Mining Machine & Shipboard | Specialized Construction

MSHA Shuttle Car	IEEE 1580	CPE/Rubber	Torsion Rated
Mining Rated	Shipboard	Flame Resistant	Shuttle Car

PRODUCT OVERVIEW

Mirabel shuttle car and mining machine cable is specifically engineered for the severe torsional, compressive, and flex stress of shuttle car trailing applications — featuring special construction with helically applied conductors, multiple ground wires, and heavy-duty CPE jacket to withstand the unique winding drum and cable management systems of underground shuttle cars and continuous haulage systems. Mirabel marine power cable and shipboard cable (IEEE 1580) serves vessel power distribution, offshore platform electrical systems, and marine industrial applications requiring flame-retardant, oil-resistant, and moisture-resistant construction.

KEY APPLICATIONS

- Underground shuttle car and ram car trailing cable (mining)
- Continuous haulage machine cable — tailgate and headgate
- Marine vessel power distribution (IEEE 1580 shipboard)
- Offshore oil and gas platform electrical power cable
- Dockside and shore power connection cables
- Industrial marine crane and winch cable

KEY SPECIFICATIONS

Shuttle Car Construction	Helical phase conductors; multiple ground/pilot conductors for winding drum
Shuttle Car Voltage	2000V (mining standard); MSHA 30 CFR Part 18 compliant
Shuttle Car Jacket	Heavy CPE — resistant to mine acids, oils, and flame
IEEE 1580 Standard	Shipboard cable rated per IEEE 1580 Type P or Type SIS
Marine Cable Voltage	600V–2000V; flame-retardant per IEEE 1202 / UL 1685
Marine Jacket	LSZH or flame-retardant rubber; oil and moisture resistant
Marine Temp Range	-40°C to 90°C
Marine Applications	Class D, Class F, and Class H marine cable configurations available

TECHNICAL SPECIFICATIONS

Product	Voltage	Standard	Jacket	Application
Shuttle Car Cable	2kV	MSHA Part 18	Heavy CPE	Mining shuttle car
Mining Machine Cable	2kV	MSHA Part 18	CPE/rubber	Continuous miner
Marine Power (IEEE 1580)	600V–2kV	IEEE 1580	FR rubber/LSZH	Shipboard distribution
Offshore Platform	600V–15kV	IEC 60092	LSZH/armored	Platform wiring
Submersible Pump Cable	600V–4kV	UL 854	Rubber/EPDM	Submersible pumps

PART / ORDER INFO

Custom conductor counts and reel lengths MSHA documentation and IEEE 1580 certifications available

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

SECTION 6 · ACCESSORIES DIVISION

Accessories

Bushing Covers · Cold Shrink · Heat Shrink · Rubber Goods

Radiation cross-linked polyolefin and EPDM bushing covers, EPDM cold shrink MV termination kits, heat shrink cable accessories, and Class 0–4 rubber goods protective equipment.

› Bushing Covers — Polyolefin & EPDM	› Transformer & Feeder Bushing Covers	› Busbar Connectors & Clamps
› Surge Arrester & Switch Covers	› EPDM Cold Shrink Kits 5kV–35kV	› Heat Shrink Kits LV–15kV
› Rubber Goods — Class 0–4 PPE		

MIRABEL ENERGY · ACCESSORIES DIVISION

Bushing Covers — Polyolefin & EPDM Insulating Products

IEC 60243 | Radiation Cross-Linked | Switchgear, Transformer & Substation Protection

Polyolefin/EPDM	Radiation X-Link	15kV–69kV	Custom Fit
Material	Cross-Linked	Voltage Range	Application

PRODUCT OVERVIEW

Mirabel insulating bushing covers provide reliable dielectric protection, mechanical enhancement, and long-term service life across switchgear, substation, and transformer applications. Manufactured from radiation cross-linked polyolefin or EPDM rubber, these covers are precision-engineered to fit standard transformer, switchgear, and bus duct bushing geometries. The complete line covers transformer primary and secondary bushings, feeder bushings, busbar and connector insulation, switch covers, surge arrester covers, and electrical connection covers — providing a comprehensive insulation solution for substation safety and maintenance programs.

KEY APPLICATIONS

- Transformer primary and secondary bushing protection and insulation
- Switchgear bushing covers for maintenance worker safety
- Busbar and connector insulation in switchgear cubicles
- Surge arrester insulating covers — transmission and distribution
- Switch and disconnect insulating covers — live-line safe working
- Substation safety upgrade for aging exposed bushing infrastructure

KEY SPECIFICATIONS

Materials	Radiation cross-linked polyolefin and EPDM rubber
Voltage Range	Distribution class through 69kV transmission voltage
Dielectric Strength	High dielectric strength per IEC 60243 / ASTM D149
Mechanical Protection	Resistant to UV, weathering, ozone, and electrical tracking
Product Lines	Transformer covers, feeder covers, busbar connectors, clamps, switch covers, surge arrester covers, electrical connection covers
Installation	Cold-shrink or slip-fit installation — no heat gun required for most types
Colors	Standard: red (live/phase), black (ground/neutral), custom colors available
Customization	OEM drawings and custom bushing cover geometries available on request

TECHNICAL SPECIFICATIONS

Product Line	Voltage Class	Material	Application
Transformer Bushing Covers	Up to 69kV	Polyolefin/EPDM	Transformer primary/secondary bushings
Feeder Bushing Covers	15kV–35kV	Polyolefin	Switchgear and feeder bushings
Busbar Connectors	Up to 38kV	EPDM	Busbar and connector insulation
Bushing Clamps	Up to 25kV	Polyolefin	Bus clamp and connector protection
Surge Arrester Covers	Up to 35kV	EPDM	Distribution surge arresters
Switch Covers	Up to 25kV	Polyolefin	Switch and disconnect contacts
Electrical Connection Covers	Up to 25kV	EPDM	Splice and connection protection

PART / ORDER INFO	STOCKING LOCATIONS	WEB & CONTACT
Full line of transformer, feeder, busbar, and switch covers Custom geometries available — drawings required	Reno, NV Houston, TX Salt Lake City, UT	mirabelenergy.us gcpenergy.us brady@gcpenergy.us

MIRABEL ENERGY · ACCESSORIES DIVISION

EPDM Cold Shrink, Heat Shrink & Rubber Goods

IEC 60502-4 · IEEE 404 · ASTM F2677 | MV/HV Cable Accessories & Worker Protection

5kV–35kV	EPDM	Class 0–4	No Heat Gun
Cold Shrink MV Range	Cold Shrink Material	Rubber Goods Rating	Cold Shrink Install

PRODUCT OVERVIEW

Mirabel EPDM cold shrink kits provide tool-free, reliable cable termination and splicing for medium voltage cables (5kV–35kV) — the coreless EPDM cold shrink tube is pre-expanded on a removable plastic support core, allowing installation by simply removing the core to allow the EPDM to contract onto the cable. Heat shrink kits use irradiated polyolefin or dual-wall adhesive-lined tubing for LV and MV applications requiring heat-activated sealing. Rubber goods (insulating blankets, sleeves, gloves, and line hose) provide Class 0 through Class 4 personal protective equipment and live-line working protection for utility line workers and substation electricians.

KEY APPLICATIONS

- MV cable termination (15kV–35kV) — cold shrink indoor and outdoor kits
- MV cable inline splicing and straight joints — cold shrink
- LV and MV cable heat shrink end-sealing and termination kits
- Insulating blanket protection for energized substation equipment
- Line hose for overhead distribution live-line work
- Insulating gloves and sleeves for substation and line work

KEY SPECIFICATIONS

Cold Shrink Material	EPDM rubber — radiation cross-linked; weatherproof and UV resistant
Cold Shrink Range	5kV through 35kV MV cable; indoor and outdoor termination kits
Cold Shrink Install	Remove plastic core spiral — no tools or heat source required
Heat Shrink Material	Irradiated polyolefin (clear/black) or dual-wall adhesive-lined
Heat Shrink Range	LV and MV (up to 15kV); end caps, breakout boots, tubing
Factory Acceptance	FAT per IEC 60502-4 — cold shrink dielectric test results available
Rubber Goods Classes	Class 0 (500V) through Class 4 (36kV) per ASTM F696/F2677
Rubber Goods Products	Insulating blankets, line hose, gloves, sleeves, pole clamp covers

TECHNICAL SPECIFICATIONS

Product	Application	Voltage Range	Material
Cold Shrink Termination Kit	MV cable end termination	5kV–35kV	EPDM
Cold Shrink Splice Kit	MV inline splice joint	5kV–35kV	EPDM
Heat Shrink End Cap	LV/MV sealing	LV–15kV	Polyolefin
Heat Shrink Tubing	Insulation / sealing	LV–15kV	Dual-wall adhesive
Insulating Blanket	Live-line protection	Up to 36kV	EPDM rubber
Insulating Gloves	PPE — hand protection	Up to 36kV (Class 4)	EPDM rubber
Line Hose	Overhead live-line	Up to 36kV	EPDM rubber

PART / ORDER INFO

Cold shrink: 5kV–35kV kits | Heat shrink: LV–15kV Rubber goods: Class 0–4 ASTM rated

STOCKING LOCATIONS

Reno, NV Houston, TX Salt Lake City, UT

WEB & CONTACT

mirabelenergy.us gcpenergy.us
brady@gcpenergy.us

PRICING & AVAILABILITY

Reach out directly to the GCP Energy managing partner for your region for pricing, availability, and project support on all Mirabel products.

BRADY JENKINS

Co-Founder & Managing Partner — GCP Energy LLC

■ Western U.S. — Salt Lake City, UT

MV/HV cable, mining cable (MSHA documentation available), fiber, and Western U.S. distributor relationships.

✉ brady@gcpenergy.us

■ gcpenergy.us

FAVAD JANJUA

Co-Founder & Managing Partner — GCP Energy LLC

■ Southern & Central U.S. — Houston, TX

MV/HV cable, fiber optic, and Southern U.S. / Gulf Coast distributor and contractor relationships out of Houston stock.

✉ favad@gcpenergy.us

■ gcpenergy.us

COMPLETE PRODUCT PORTFOLIO

Fiber OS2/OM3/OM4/OM5	MTP/MPO Trunk Systems	ADSS Aerial Fiber
Rollable Ribbon — 6,912F	Armored Direct Burial	Indoor/Outdoor Breakout
THHN/THWN-2 Building Wire	XHHW-2 / MC / TC Cable	Service Entrance / Feeder
5kV–35kV MV Distribution	69kV–500kV HV XLPE	HVDC Transmission Cable
Type SHD-GC Mining Cable	Marine IEEE 1580	Submersible Pump Cable
Bushing Covers — EPDM	Cold/Heat Shrink Kits	Rubber Goods & Accessories

MIRABEL ENERGY	GCP ENERGY LLC	STOCKING
mirabelenergy.us sales@mirabelenergy.us	gcpenergy.us brady@gcpenergy.us favad@gcpenergy.us	Reno, NV Houston, TX Salt Lake City, UT