



ARCTIC ULTRAFLEX BLUE™

Premium Arctic Grade Wire

ARCTIC ULTRAFLEX BLUE™ is the premier Arctic grade wire rated and proven to work in extreme temperature ranges of -55°C to 105°C. This highly flexible wire combines finely stranded copper construction with a jacket material that resists the abuses of oil, gasoline, sunlight, salt water, acids, and chemicals.

ARCTIC ULTRAFLEX BLUE™ has high abrasion resistance and can be used in most 600 VOLT applications. UL listed as AWM (Appliance Wiring Material).

ARCTIC ULTRAFLEX BLUE™ is available in a multitude of primary colors, gauges, and configurations.

ARCTIC ULTRAFLEX BLUE™ has numerous applications, including those approved under NEC article 400 and associated articles.

Applications

- UL 508A Industrial control panels
- Machine tool wiring
- Internal wiring of appliances and equipment
- Inverter cables and wiring
- Load banks
- Motor lead
- Welding cable
- Marine, RV and automotive wiring
- Batteries and chargers
- Power hookup cable



Insulation Properties

Properties	Test Method	Performance
Specific Gravity (±.02)	ASTM D-792	1.30
Durometer Shore "A" (±.02) INST./15 seconds	ASTM D-2240	77/65
Tensile Strength (60 mil)	ASTM D-412	2000
Elongation (%)	ASTM D-412	300
Brittle Point (C)	ASTM D-746	-55°C
Oxygen Index %	ASTM D-2863	25.0
Oil Aged 18 Hours @ 121°C		
% Retention of Tensiles	UL Standard	129%
% Retention of Elongation	UL Standard	72%
Air Aged 7 Days @ 136°C		
% Retention of Tensiles	ASTM D412-80	109%
% Retention of Elongation	ASTM D412-80	100%
Oil Aged 7 Days @ 60°C		
% Retention of Tensiles	ASTM D412-80	124%
% Retention of Elongation	ASTM D412-80	89%
VW-1 Flame Test	UL Standard	Pass
Product Cold Bend Test	UL Standard	Pass
Voltage Rating	UL Standard	600

Polar Wire Products, Inc.
is the exclusive manufacturer of
ARCTIC ULTRAFLEX BLUE™





Class K Copper Stranded Construction Specifications

Size AWG	Class K Copper Stranding*	Conductor OD Inches	Insulation Thickness Inches	Finished OD Inches	Finished Weight lbs/Mft	OHMS Resistance/ Mft	Ampacity 30°C (86°F) Ambient	Ampacity 40°C (104°F) Ambient
18 AWG	(16/30) TC	.045	.030	.105	10	6.740	n/a	n/a
16 AWG	(26/30) TC	.058	.030	.118	14	4.000	26	24
14 AWG	(41/30) TC	.070	.030	.130	19	2.660	38	36
12 AWG	(65/30) TC	.089	.030	.149	31	1.680	44	41
10 AWG	(105/30) TC	.114	.030	.174	42	0.980	60	56
8 AWG	(168/30) BC	.144	.045	.234	70	0.660	85	81
6 AWG	(266/30) BC	.204	.060	.324	112	0.417	115	106
4 AWG	(420/30) BC	.257	.060	.377	167	0.264	150	142
2 AWG	(665/30) BC	.338	.060	.458	253	0.167	205	193
1 AWG	(836/30) BC	.365	.080	.525	323	0.133	240	223
1/0	(1064/30) BC	.451	.080	.611	397	0.105	285	264
2/0	(1330/30) BC	.496	.080	.656	401	0.084	325	304
3/0	(1666/30) BC	.533	.080	.693	608	0.067	380	355
4/0	(2107/30) BC	.670	.080	.830	753	0.053	440	411
250 MCM	(2527/30) BC	.716	.095	.906	970	n/a	495	461
350 MCM	(3458/30) BC	.826	.095	1.016	1140	n/a	620	512
500 MCM	(5054/30) BC	.988	.110	1.208	1930	n/a	760	710

Note: Ampacities based on single conductor in free air, 30°C (86°F) or 40°C (104°F) ambient temperature as specified, 105°C (221°F) conductor temperature, per table 310-17 of the NEC (adjusted for 105°C). Free air ratings assume a one-cable diameter spacing between adjacent conductors.

*TC = Tinned Copper, BC = Bare Copper



Arctic UltraFlex Blue™
Single Conductor 18–10 AWG Wire
 is spooled in 100' and 500' lengths,
 and packaged in lengths to 35'.
 Bulk quantities available on request.



ARCTIC ULTRAFLEX BLUE™ Single Conductor Wire 10–18 AWG

ARCTIC ULTRAFLEX BLUE™ Wire Colors and Package Size

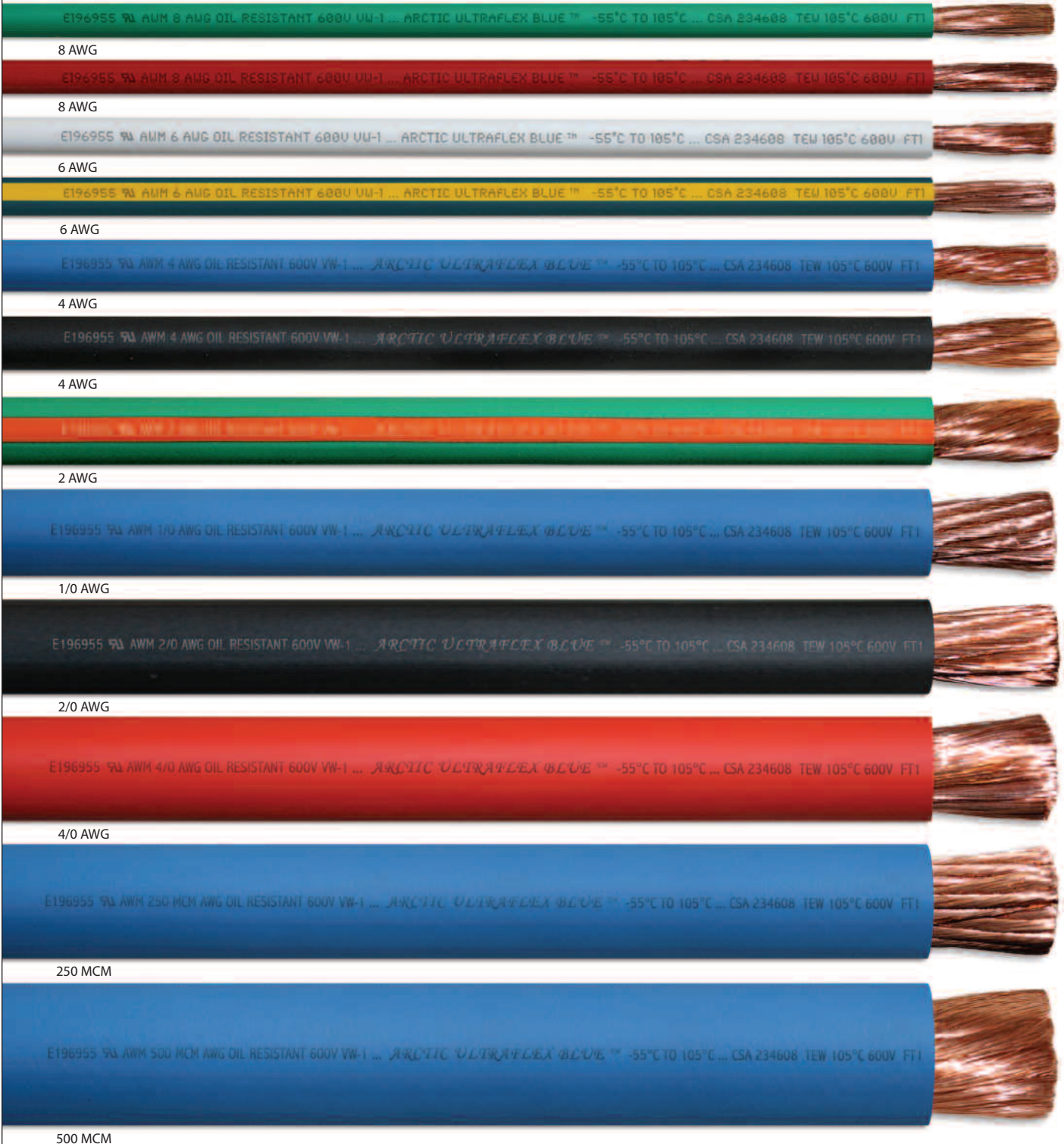
AWG	Stocked Wire Color	Part Number Bulk Spool	Part Number 500' Spool	Part Number 100' Spool	Part Number Clam-Shell Pkg	Clam-Shell Footage
18 AWG	● Black	AUF-18BLK	AUF-18BLK-500	AUF-18BLK-100	BP-18BLK	35'
18 AWG	● Blue	AUF-18BLU	AUF-18BLU-500	AUF-18BLU-100	BP-18BLU	35'
18 AWG	● Brown	AUF-18BRN	AUF-18BRN-500	AUF-18BRN-100	BP-18BRN	35'
18 AWG	● Green	AUF-18GRN	AUF-18GRN-500	AUF-18GRN-100	BP-18GRN	35'
18 AWG	● Gray	AUF-18GRY	AUF-18GRY-500	AUF-18GRY-100	BP-18GRY	35'
18 AWG	● Orange	AUF-18ORG	AUF-18ORG-500	AUF-18ORG-100	BP-18ORG	35'
18 AWG	● Red	AUF-18RED	AUF-18RED-500	AUF-18RED-100	BP-18RED	35'
18 AWG	● White	AUF-18WHT	AUF-18WHT-500	AUF-18WHT-100	BP-18WHT	35'
18 AWG	● Yellow	AUF-18YEL	AUF-18YEL-500	AUF-18YEL-100	BP-18YEL	35'
16 AWG	● Black	AUF-16BLK	AUF-16BLK-500	AUF-16BLK-100	BP-16BLK	30'
16 AWG	● Blue	AUF-16BLU	AUF-16BLU-500	AUF-16BLU-100	BP-16BLU	30'
16 AWG	● Brown	AUF-16BRN	AUF-16BRN-500	AUF-16BRN-100	BP-16BRN	30'
16 AWG	● Green	AUF-16GRN	AUF-16GRN-500	AUF-16GRN-100	BP-16GRN	30'
16 AWG	● Gray	AUF-16GRY	AUF-16GRY-500	AUF-16GRY-100	BP-16GRY	30'
16 AWG	● Orange	AUF-16ORG	AUF-16ORG-500	AUF-16ORG-100	BP-16ORG	30'
16 AWG	● Red	AUF-16RED	AUF-16RED-500	AUF-16RED-100	BP-16RED	30'
16 AWG	● White	AUF-16WHT	AUF-16WHT-500	AUF-16WHT-100	BP-16WHT	30'
16 AWG	● Yellow	AUF-16YEL	AUF-16YEL-500	AUF-16YEL-100	BP-16YEL	30'
14 AWG	● Black	AUF-14BLK	AUF-14BLK-500	AUF-14BLK-100	BP-14BLK	20'
14 AWG	● Blue	AUF-14BLU	AUF-14BLU-500	AUF-14BLU-100	BP-14BLU	20'
14 AWG	● Brown	AUF-14BRN	AUF-14BRN-500	AUF-14BRN-100	BP-14BRN	20'
14 AWG	● Green	AUF-14GRN	AUF-14GRN-500	AUF-14GRN-100	BP-14GRN	20'
14 AWG	● Gray	AUF-14GRY	AUF-14GRY-500	AUF-14GRY-100	BP-14GRY	20'
14 AWG	● Orange	AUF-14ORG	AUF-14ORG-500	AUF-14ORG-100	BP-14ORG	20'
14 AWG	● Purple	AUF-14PUR	AUF-14PUR-500	AUF-14PUR-100	BP-14PUR	20'
14 AWG	● Red	AUF-14RED	AUF-14RED-500	AUF-14RED-100	BP-14RED	20'
14 AWG	● White	AUF-14WHT	AUF-14WHT-500	AUF-14WHT-100	BP-14WHT	20'
14 AWG	● Yellow	AUF-14YEL	AUF-14YEL-500	AUF-14YEL-100	BP-14YEL	20'
12 AWG	● Black	AUF-12BLK	AUF-12BLK-500	AUF-12BLK-100	BP-12BLK	15'
12 AWG	● Blue	AUF-12BLU	AUF-12BLU-500	AUF-12BLU-100	BP-12BLU	15'
12 AWG	● Brown	AUF-12BRN	AUF-12BRN-500	AUF-12BRN-100	BP-12BRN	15'
12 AWG	● Green	AUF-12GRN	AUF-12GRN-500	AUF-12GRN-100	BP-12GRN	15'
12 AWG	● Gray	AUF-12GRY	AUF-12GRY-500	AUF-12GRY-100	BP-12GRY	15'
12 AWG	● Orange	AUF-12ORG	AUF-12ORG-500	AUF-12ORG-100	BP-12ORG	15'
12 AWG	● Purple	AUF-12PUR	AUF-12PUR-500	AUF-12PUR-100	BP-12PUR	15'
12 AWG	● Red	AUF-12RED	AUF-12RED-500	AUF-12RED-100	BP-12RED	15'
12 AWG	● White	AUF-12WHT	AUF-12WHT-500	AUF-12WHT-100	BP-12WHT	15'
12 AWG	● Yellow	AUF-12YEL	AUF-12YEL-500	AUF-12YEL-100	BP-12YEL	15'
10 AWG	● Black	AUF-10BLK	AUF-10BLK-500	AUF-10BLK-100	BP-10BLK	10'
10 AWG	● Blue	AUF-10BLU	AUF-10BLU-500	AUF-10BLU-100	BP-10BLU	10'
10 AWG	● Brown	AUF-10BRN	AUF-10BRN-500	AUF-10BRN-100	BP-10BRN	10'
10 AWG	● Green	AUF-10GRN	AUF-10GRN-500	AUF-10GRN-100	BP-10GRN	10'
10 AWG	● Gray	AUF-10GRY	AUF-10GRY-500	AUF-10GRY-100	BP-10GRY	10'
10 AWG	● Orange	AUF-10ORG	AUF-10ORG-500	AUF-10ORG-100	BP-10ORG	10'
10 AWG	● Red	AUF-10RED	AUF-10RED-500	AUF-10RED-100	BP-10RED	10'
10 AWG	● White	AUF-10WHT	AUF-10WHT-500	AUF-10WHT-100	BP-10WHT	10'
10 AWG	● Yellow	AUF-10YEL	AUF-10YEL-500	AUF-10YEL-100	BP-10YEL	10'



Arctic UltraFlex Blue™ Single Conductor 18–10 AWG Wire is spooled in 100' and 500' lengths, and packaged in 10'–35' lengths. Bulk quantities available on request.



ARCTIC ULTRAFLEX BLUE™ Single Conductor Wire 8 AWG – 500 MCM



Arctic UltraFlex Blue™ Single Conductor 8 AWG – 500 MCM Wire is spooled by the foot—coiled in increments of up to 100' and spooled in lengths over 100'. Bulk quantities available on request.



ARCTIC ULTRAFLEX BLUE™

8 AWG – 500 MCM Wire Colors, Stranding Comparison Chart

ARCTIC ULTRAFLEX BLUE™ Wire Colors

8 AWG through 500 MCM is sold by the foot—coiled in up to 100' increments, and spooled in lengths over 100'.

Part Number	AWG	Stocked Wire Color
AUF-8BLK	8 AWG	● Black
AUF-8BLU	8 AWG	● Blue
AUF-8RED	8 AWG	● Red
AUF-8WHT	8 AWG	○ White
AUF-8GRN	8 AWG	● Green
AUF-6BLK	6 AWG	● Black
AUF-6BLU	6 AWG	● Blue
AUF-6RED	6 AWG	● Red
AUF-6WHT	6 AWG	○ White
AUF-6GRN	6 AWG	● Green
AUF-6GRN/ORG	6 AWG	● Green/Orange Stripe
AUF-6GRN/YEL	6 AWG	● Green/Yellow Stripe
AUF-4BLK	4 AWG	● Black
AUF-4BLU	4 AWG	● Blue
AUF-4RED	4 AWG	● Red
AUF-4WHT	4 AWG	○ White
AUF-4GRN	4 AWG	● Green
AUF-2BLK	2 AWG	● Black
AUF-2BLU	2 AWG	● Blue
AUF-2RED	2 AWG	● Red
AUF-2WHT	2 AWG	○ White
AUF-2GRN	2 AWG	● Green
AUF-2GRN/ORG	2 AWG	● Green/Orange Stripe
AUF-2GRN/YEL	2 AWG	● Green/Yellow Stripe
AUF-1BLU	1 AWG	● Blue
AUF-1/0BLK	1/0	● Black
AUF-1/0BLU	1/0	● Blue
AUF-1/0RED	1/0	● Red
AUF-2/0BLK	2/0	● Black
AUF-2/0BLU	2/0	● Blue
AUF-2/0RED	2/0	● Red
AUF-3/0BLU	3/0	● Blue
AUF-4/0BLK	4/0	● Black
AUF-4/0BLU	4/0	● Blue
AUF-4/0RED	4/0	● Red
AUF-250MCM	250 MCM	● Blue
AUF-500MCM	500 MCM	● Blue

WORKING WITH THE CODE

UL 508A Industrial Control Panels paragraph 29.2.1 dictates what conductors may be used for connection of industrial control panels:

...All internal wiring of power circuits shall have a temperature rating of 90°C (194°F) minimum and shall be one of the following:

a) Machine tool wire (MTW) that complies with the Standard for Machine Tool Wire and Cable, UL 1063, flexing of Class K type machine tool wires and cables shall be installed in accordance with 29.3.11

Polar Wire provides MTW conductors. Note the special requirements for the fine stranded conductors (Flexing or Class K).

b) Thermoset insulated wire that complies with the Standard for Thermoset-Insulated Wires and Cables, UL 44

c) Thermoplastic insulated wire that complies with the Standard for Thermoplastic-Insulated Wires and Cables, UL 83

d) Appliance wire material (AWM) that complies with the Standard for Appliance Wiring Material, UL 758; or

Polar Wire provides AWM conductors.

e) Welding Cable installed in accordance with 29.3.11.

Polar Wire provides Welding Cable. Welding cable is defined by ICEA and usually listed and marked as RHW. Welding cable listed as RHW is commonly used as connections between battery terminals, battery chargers, and uninterruptable power systems (UPS).

Custom colors and striping available upon request.

Minimums may apply.

WIRE STRANDING COMPARISON CHART

Polar Wire Standard

Class B		Class C		Class G		Class H		Class I		Class K		Class M		Locomotive Cable	
Stranding	OD	Stranding	OD	Stranding	OD	Stranding	OD	Stranding	OD	Stranding	OD	Stranding	OD	Stranding	OD
2/0 / 19	.4205	2/0 / 37	.3750	1/0 / 133	.4240	1/0 / 259	.4240	N/A	-	N/A	-	1/0 / 2646	.4310	1/0 / 275	.4200
3/0 / 19	.4700	3/0 / 37	.4700	2/0 / 133	.4740	2/0 / 259	.4770	1/0 / 266	.4320	1/0 / 1064	.4100	N/A	-	2/0 / 325	.4600
4/0 / 19	.5280	4/0 / 37	.5300	3/0 / 133	.5330	3/0 / 259	.5330	2/0 / 342	.4700	2/0 / 1323	.5200	2/0 / 3325	.4600	N/A	-
250 MCM / 37	.5720	250 MCM / 61	.5760	N/A	-	N/A	-	3/0 / 418	.5450	3/0 / 1666	.5420	3/0 / 4256	.5750	3/0 / 450	.5650
300 MCM / 37	.7400	300 MCM / 61	.6309	4/0 / 133	.5990	4/0 / 259	.5900	4/0 / 532	.5900	N/A	-	N/A	-	N/A	-
350 MCM / 37	.6850	350 MCM / 61	.6813	250 MCM / 259	.6500	250 MCM / 427	.6530	250 MCM / 637	.6800	4/0 / 2107	.6300	4/0 / 5320	.6450	262.6 MCM / 650	.6500
400 MCM / 37	.8250	400 MCM / 61	.7290	300 MCM / 259	.7140	300 MCM / 427	.7160	300 MCM / 735	.7218	250 MCM / 2499	.6820	250 MCM / 6384	.6480	313.1 MCM / 775	.7100
500 MCM / 37	.8100	500 MCM / 61	.8145	350 MCM / 259	.7730	350 MCM / 427	.7720	350 MCM / 882	.8830	300 MCM / 2989	.7700	300 MCM / 7581	.8108	N/A	-
N/A	-	N/A	-	400 MCM / 259	.8260	400 MCM / 427	.8260	400 MCM / 980	.8380	350 MCM / 3458	.8450	350 MCM / 8806	.8822	373.7 MCM / 925	1.140
600 MCM / 61	.8930	600 MCM / 91	.8932	N/A	-	N/A	-	N/A	-	N/A	-	N/A	-	444 MCM / 1100	1.230
700 MCM / 61	.9640	700 MCM / 91	.9647	500 MCM / 259	.9220	500 MCM / 427	.9230	500 MCM / 1225	.9400	450 MCM / 4522	1.008	450 MCM / 11396	.9400	535.3 MCM / 1325	1.320
750 MCM / 61	.9980	750 MCM / 91	.9988	550 MCM / 427	.9230	550 MCM / 703	-	550 MCM / 1372	.9910	500 MCM / 5054	1.022	500 MCM / 12691	.9970	N/A	-
N/A	-	N/A	-	600 MCM / 427	.9690	600 MCM / 703	1.022	600 MCM / 1470	1.101	550 MCM / 5453	1.099	550 MCM / 13664	1.198	646.4 MCM / 1600	1.450
1000 MCM / 61	1.160	1000 MCM / 91	1.208	750 MCM / 427	1.131	750 MCM / 703	1.320	650 MCM / 1596	1.089	600 MCM / 5985	1.160	600 MCM / 14945	1.280	N/A	-
N/A	-	N/A	-	N/A	-	N/A	-	750 MCM / 1862	1.297	N/A	-	750 MCM / 18788	1.487	777.7 MCM / 1925	1.540
N/A	-	N/A	-	N/A	-	N/A	-	N/A	-	N/A	-	N/A	-	1111.1 MCM / 2745	1.340