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# Customer Specification

## PART NO. M12104LW

### Construction

		Diameters (In)			
1) Component 1		4 X 1 COND			
a) Conductor		12 (65/30) AWG Bare Copper		0.093	
b) Insulation		0.016" Wall, Nom. PVC/ 0.005" Wall NYLON		0.135	
(1) Print		ALPHANUMERIC NUMBERS - 1-ONE ALTERNATING AND INVERTED			
(2) Color Code		Alpha Wire Color Code LX			
Cond	Color	Cond	Color	Cond	Color
1	GREEN/YELLOW	3	DK. BLUE#2		
2	DK. BLUE#1	4	DK. BLUE#3		
2) Cable Assembly		4 Components Cabled			
a) Twists:		2.7 Twists/foot (min)			
b) Orientation:		Components to be arranged from OUTSIDE LAYER to INSIDE LAYER			
c) Core Wrap		Clear Mylar Tape, 25% Overlap, Min.			
3) Jacket		0.055" Wall, Nom.,PVC		0.440+/- 0.020	
a) Color(s)		SLATE			
b) Print		ALPHA WIRE-* P/N M12104LW 4C 12 AWG (3.29mm2) SERIES M (UL) WTTC 90C WET/DRY 1000V OR (UL) TC-ER 90C WET/DRY 600V SUN RES DIR BUR OIL RES I OR MTW 12 AWG OR (UL) PLTC 90C OR CRU AWM I/II A/B 90C 600V FT4 CE ROHS (DATE CODE) (SEQ FOOTAGE) * = Factory Code			

### Applicable Specifications

1) UL	TC	90°C Dry / 90°C Wet / 600 V <sub>RMS</sub>
	EXPOSED RUN	
	SUN RES	
	PLTC	90°C
	DIRECT BURIAL	
	OIL RES I	
	MTW	90°C Dry / 60°C Wet / 600 V <sub>RMS</sub>
	WTTC	90°C Dry / 90°C Wet / 1000 V <sub>RMS</sub>
2) CSA International	FT4	
	C(RU) AWM I/II A/B	90°C / 600 V <sub>RMS</sub>
3) Other	Conductors ASTM Class K	
	Conductors IEC Class 5 on AWG size	
4) CE:	EU Low Voltage Directive 2014/35/EC	

## Environmental

1) CE: EU Directive 2011/65/EU(RoHS2), EU Directive 2015/863/EU (RoHS3):	
	This product complies with European Directive 2011/65/EU (RoHS Directive) of the European Parliament and of the Council of 8 June 2011 and the amending Directive 2015/863/EU of 4 June 2015 . No Exemptions are required for RoHS Compliance on this item. Consult Alpha Wire's web site for RoHS C of C.
2) REACH Regulation (EC 1907/2006):	
	This product does not contain Substances of Very High Concern (SVHC) listed on the European Union's REACH candidate list in excess of 0.1% mass of the item. For up-to-date information, please see Alpha's REACH SVHC Declaration.

## Properties

Physical & Mechanical Properties	
1) Temperature Range	-30 to 90°C(static), -5 to 90°C (dynamic)
2) Bend Radius	8X Cable Diameter(static), 8X Cable Diameter(dynamic)
3) Pull Tension	204 Lbs, Maximum
4) Sunlight Resistance	Yes
5) Direct Burial	Yes
Electrical Properties (For Engineering purposes only)	
1) Voltage Rating	600 V <sub>RMS</sub>
2) Capacitance	37 pF/ft @1 kHz, Nominal Conductor to Conductor
3) Inductance	0.16 µH/ft, Nominal
4) Conductor DCR	1.64 Ω/1000ft @20°C, Nominal

## Other

<b>Packaging</b>	Flange x Traverse x Barrel (inches)
a) Bulk(Made-to-order)	
<b>Notes:</b>	
a) Suitable for intermittent or light duty flexing where cycle count will be less than 1,500,000 cycles.	

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# EU/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: M12104LW

M12104LW , RoHS-Compliant Commencing With 8/1/2005 Production

Note: all colors and put-ups

This document certifies that the Alpha part number cited above is manufactured in accordance with Directive 2011/65/EU of the European Parliament, better known as the RoHS Directive (commonly known as RoHS 2), with regards to restrictions of the use of certain hazardous substances used in the manufacture of electrical and electronic equipment. This certification extends to amending Directive 2015/863/EU which expanded the list of restricted substances to 10 items (commonly known as RoHS 3) The reader is referred to these Directives for the specific definitions and extents of the Directives. **No Exemptions are required for RoHS Compliance on this item.** Additionally, Alpha certifies that the listed part number is in compliance with China RoHS "Marking for Control of Pollution by Electronic Information Products" standard SJ/T 11364-2014.

Substance	Maximum Control Value
Lead	0.1% by weight (1000 ppm)
Mercury	0.1% by weight (1000 ppm)
Cadmium	0.01% by weight (100 ppm)
Hexavalent Chromium	0.1% by weight (1000 ppm )
Polybrominated Biphenyls (PBB)	0.1% by weight (1000 ppm)
Polybrominated Diphenyl Ethers (PBDE) ,	
Including Deca-BDE	0.1% by weight (1000 ppm)
Bis(2-ethylhexyl) phthalate (DEHP)	0.1% by weight (1000 ppm)
Butyl benzyl phthalate (BBP)	0.1% by weight (1000 ppm)
Dibutyl phthalate (DBP)	0.1% by weight (1000 ppm)
Diisobutyl phthalate (DIBP)	0.1% by weight (1000 ppm)

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Authorized Signatory for the Alpha Wire:

Dave Watson, Director of Engineering & QA

9/1/2019

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