

Nexans LANmark Industrial Heavy-Duty Ethernet Cables enable the expansion and integration of Ethernet into the Industrial environment. With over 50 years of manufacturing expertise, you can be sure these Industrial Cables will perform both mechanically and electrically. With its 600V AWM design, durable TPE jacket, cold-bend performance, and resistance to oil, weld spatter, and sunlight, this cable is suitable for the most demanding, continuous-motion, industrial applications. This product has both a foil shield and a braid to protect against low- and high-frequency noise on the factory floor. Additionally, the stranded conductors also help maintain performance in a high-vibration environment. It is rated CMR and CMX Outdoor, so it easily transitions from indoor to outdoor environments. It is also suitable for cable tray installations.

DESCRIPTION

Construction

24 AWG stranded tinned copper wire insulated with HDPE. Two insulated conductors twisted together to form a pair. Four such pairs and a cross filler form the basic unit, enclosed by polyester tape and shielded with a 75% optical coverage braid and aluminum/polyester/aluminum tape contained within a TPE jacket.

Related Standards

Low Voltage - EU Directive 2014/35/EU, CE Approved

RoHS - EU Directive 2011/65/EU

PoE+ - Type 2 (802.3at)

Agency Ratings

Description	Method	
Listed Type	UL1666	CMR
Listed Type	UL444	CMX Outdoor
Oil Resistance	UL1277 11.2	II (75°C)
Sunlight Resistance	UL444 7.22	Yes (720 hrs)

Attributes

Description	Method	
AWM Style	UL758	2463 (600V, 80°C)
Flex Life	Trailing Chain 10x OD	1 million cycles
Flex Life	Trailing Chain 20x OD	10 million cycles
Flex Life	Torsion (+/- 270°)	3 million cycles
Installation Pull Tension (Max):		
Bend Radius: > 3 inch	Internal	40 lbs.
Bend Radius: > 1.29 inch	TIA 568-C.0	25 lbs.
Abrasion	UL2556 7.10	75 cycles/1.5 lb. load



STANDARDS

International ISO/IEC 11801

National ANSI/TIA-568-C.2;
UL 444



CHARACTERISTICS

Construction characteristics	
Conductor material	24 AWG Stranded Tinned Copper (7/32)
Filler	HDPE Cross Filler
Insulation	HDPE
Jacket Material	TPE
Braid	Tinned copper - 75% optical coverage
Shielding	Aluminum/Polyester/Aluminum
Core Tape	Polyester
Dimensional characteristics	
Insulated conductor diameter (Nominal)	0.045 in
Average jacket thickness	0.03 in
Minimum jacket thickness at any point	0.024 in
Cable diameter (Nominal)	0.322 in
Nominal cable weight	48 lb/kft
Length per reel	1000.0 ft
Electrical characteristics	
Mutual capacitance	5.6 nF/100m max.
DC Resistance (max.)	9.38 Ohm/100m
DC resistance unbalance (max.)	4 %
Nominal velocity of propagation	67 %
Maximum pair to ground unbalance	330 pF/100m
Transmission characteristics	
Skew (max.)	45 ns/100m
Insertion loss de-rating factor	1.2
Usage characteristics	
Minimum Bending Radius - Install	2.58 in
Recommended installation temperature range	-20 .. 80 °C
Recommended operating temperature range	-40 .. 80 °C
Recommended storage temperature range	-40 .. 80 °C
Maximum cable length	83 m
Cold Bend	-40 °C
Weld spatter resistance	Yes

PRODUCT LIST

Part Number	Description	Packaging	Colour
 11099210	LANmark-C545 Cat 6A 24 AWG High Flex Shielded TPE	Reel	Teal

LANMARK-C545 - TECHNICAL INFORMATION

Electrical Characteristics

Parameter	Frequency	Equation
RL (dB)	1-10 MHz	$20+5*\text{Log}(F)$
	10-20 MHz	25
	20-500 MHz	$25-7*\text{Log}(F/20)$
Insertion Loss (dB/100m)	1-500 MHz	$1.2(1.82*\sqrt{F}+.0091*.25/\sqrt{F})$
NEXT (dB)	1-500 MHz	$44.3-15*\text{log}(F/100)$
PS-NEXT (dB)	1-500 MHz	$42.3-15*\text{log}(F/100)$
ACR (dB/100m)	1-500 MHz	NEXT - Insertion Loss
PS-ACR	1-500 MHz	PS-NEXT - Insertion Loss
ACRF (dB)	1-500 MHz	$27.8-20*\text{Log}(F/100)$
PSACRF (dB)	1-500 MHz	$24.8-20*\text{Log}(F/100)$
Propagation Delay	1-500 MHz	$534+(36/\sqrt{F})$
Max Transfer Impedance (mΩm)	1; 10; 30; 100 MHz	50; 100; 200; 1000
Min Coupling Attenuation (dB/100m)	30-100 MHz	≥ 85
	100-1000 MHz	$\geq 85-20*\text{log}(F/100)$

Transmission Characteristics

Description		
ISO/IEC 11801		Category 6A
ANSI/TIA-568-C.2		Category 6A
Coupling Attenuation	IEC 61156-5	Type I
Transfer Impedance	IEC 61156-5	Grade 2

Color Code

Pair-1	White/Blue	Blue
Pair-2	White/Orange	Orange
Pair-3	White/Green	Green
Pair-4	White/Brown	Brown