



SPECIFICATION

FOR

UL RECOGNIZED MULTI CORE CABLE



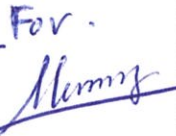
P/N: UL20276 (SPV1708) nx24AWG(11/0.16TA) LF

n ~ number of core

Prepared	Checked	Approved
<i>Na</i> <i>Ng-Va Na</i> <i>03/08/2021</i>		

Hitachi Cable Vietnam Co., Ltd

Revision record

No.	Date	Rev.	Contents	Prepared by	Reviewed by	Approved by
1	Aug. 03 rd , 2021	Initial Issue	Initial Issue	 Nam NV	 Cuong NM	 Suzuki M

1. Scope

This specification covers UL recognized multi core cable.

Rating Temperature: 80°C

Rating Voltage: 30V

USE: Internal wiring or external interconnection of electronic equipment in Class 2 circuits only.

2. Applicable standard

UL758: Latest version

UL AWM Style 20276

3. Construction and Material

	Description	Unit	Specification
Conductor	Material	-	Tinned annealed copper wire (TA) stranded
	Size	AWG	24
	Stranding	No./mm	11/0.16
	Diameter (Nom.)	mm	0.61
Insulation	Material	-	Semi-rigid, lead free PVC
	Thickness (Nom.)	mm	0.25
	Diameter (Nom.)	mm	1.11
	Color & Identification	-	See table 2
Cabling	Binder tape	-	Paper tape
	Diameter (Nom.)	mm	See table 1
Jacket	Material	-	Heat resistant, Lead free PVC
	Thickness (Nom.)	mm	See table 1
	Diameter	mm	See table 1
	Color (color code)	-	Black (BK)

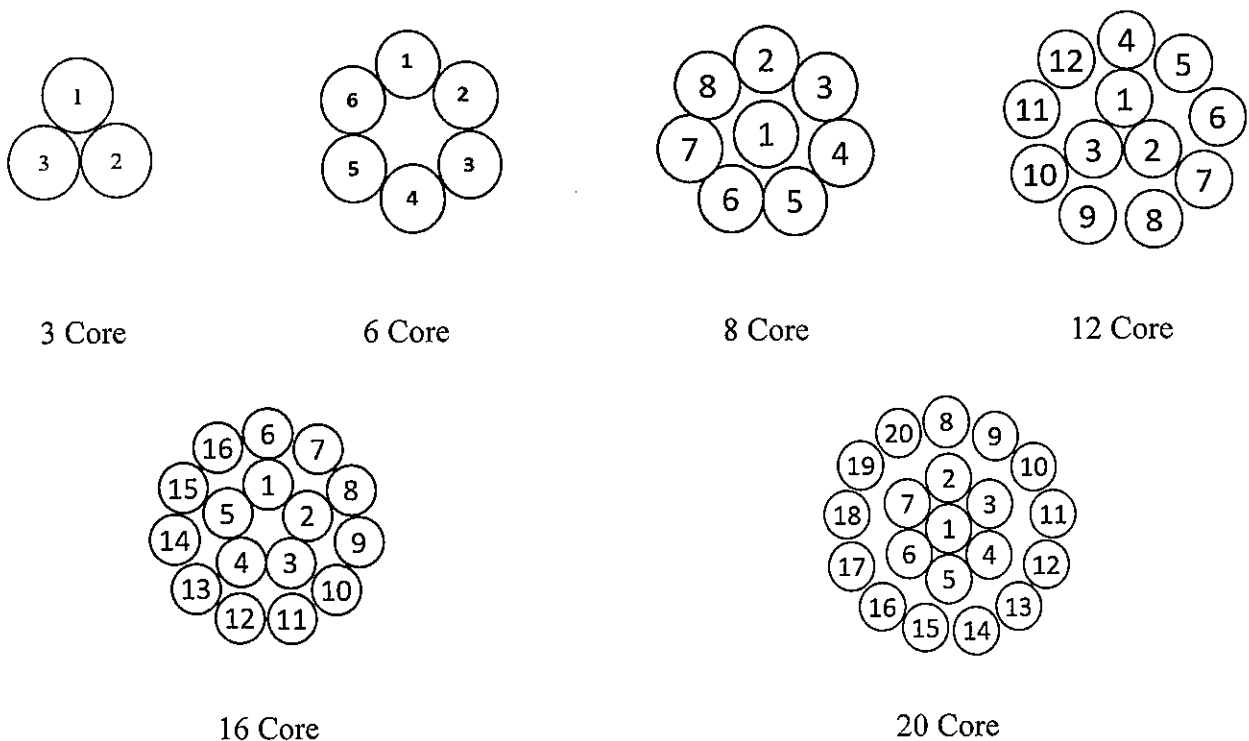
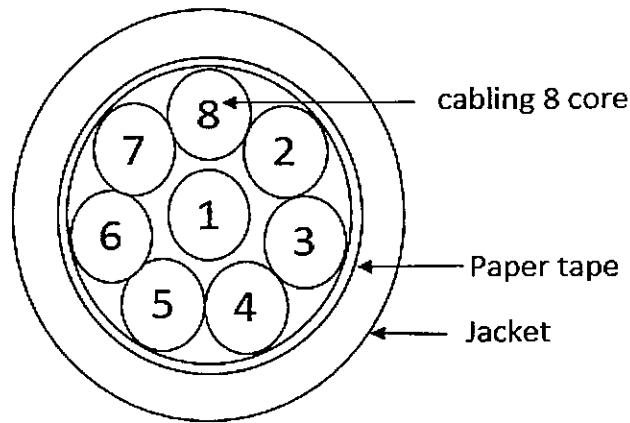


Fig. 1: Layout of cabling

Example for 8x24A WG



(*) Suitable fillers may be applied to make a circular cross section.

Fig. 2: Cross-section of cable

4. Marking

The completed cable shall be printed following marking format on the surface throughout entire length by regular interval.

AWM E41447-HCV STYLE 20276 80C VW-1 HITACHI LF

Note: Making format subject to change without notice according with safety revision

5. Properties

No.	Test Item	Test Detail	Standard	Test		
				Routine	Type	Approval
1	Dielectric strength	A.C.500V/1min; No breakdown	Specification	Yes	X	Yes
2	Jacket tensile strength (unaged)	Min. 10.3 MPa	UL	X	Yes	Yes
3	Jacket tensile strength (aged) ^(*)	Min. 70% (aged at 113±2°C, 168 hours)	UL	X	Yes	Yes
4	Jacket elongation (unaged)	Min. 100 %	UL	X	Yes	Yes
5	Jacket elongation (aged) ^(*)	Min. 45% (aged at 113±2°C, 168 hours) Use die cut	UL	X	Yes	Yes
		Min. 65% (aged at 113±2°C, 168 hours) Don't use die cut				
6	Heat shock for jacket	No crack (at 121±1°C, 1 hour)	UL	X	Yes	Yes
7	Cold bend for jacket	No crack (at -10±2°C, 4 hours)	UL	X	Yes	Yes
8	Deformation for jacket	Max. 50% (**)(2.45N at 121±1°C)	UL	X	Yes	Yes
9	Conductor resistance	Max. 91.6 Ω/km (20°C)	Specification	X	Yes	Yes
10	Insulation resistance	Min. 10 MΩ-km (20°C)	Specification	X	Yes	Yes
11	Flame test	VW-1	UL	X	Yes	Yes

(*) % of the unaged specimen.

(**) % of decrease in thickness

6. Packing

6.1 Packing

Each product shall be packed in coil for transportation, and unit length: See table 1

6.2 Marking on the Package

Each package shall be tagged to show the following information with UL stamp

- | | |
|---------------------|--|
| (1) UL Style No. | (8) File No. |
| (2) Conductor size | (9) Rating temperature |
| (3) No of conductor | (10) Rating voltage |
| (4) Color | (11) Date of manufacturing |
| (5) Lot No. | (12) Insulation thickness and material |
| (6) Length | (13) Jacket thickness and material |
| (7) Use | (14) Name of manufacturer |

7. Order form

Example: 3x24AWG

UL20276 (SPV1708) 3x24AWG(11/0.16TA) LF BK C200
 1 2 3 4 5 6

1	UL20276	Description (UL Style No.)
2	(SPV1708)	Specification No. SPV-02-1708
3	3x24AWG(11/0.16TA)	No of core, conductor size & stranding
4	LF	Lead free
5	BK	Jacket Color (Black)
6	C200	Packing style and unit length, "C" for coil

8. Control of chemical substances

Control of Chemical Substances in this product shall be controlled as below.

10 substances of RoHS Directive

(1) Applicable standard and statute

- (a) Directive 2011/65/EU of the European Parliament and of the Council on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment)
- (b) 2005/618/EC COMMISSION DECISION of 18 August 2005 (amending Directive 2011/65/EU of the European Parliament and of the Council for the purpose of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment)
- (c) JIS C 0950:2008(The marking for presence of the specific chemical substances for electrical and electronic equipment)

(2) The maximum concentration values for certain hazardous substances.

No	Chemical Substances	Concentration value
1	Cadmium and Cadmium Compounds	Less than 100 ppm
2	Hexavalent Chromium Compounds	Less than 1000ppm
3	Lead and Lead Compounds	Less than 1000ppm
4	Mercury and Mercury Compounds	Less than 1000ppm
5	Polybrominated Biphenyls (PBBs)	Less than 1000ppm
6	Polybrominated Diphenyl ethers (PBDEs)	Less than 1000ppm
7	Bis (2-ethylhexyl) phthalate (DEHP) * 1 (CAS No.117-81-7)	Less than 1000ppm
8	Benzyl butyl phthalate (BBP) * 1(CAS No. 85-68-7)	Less than 1000ppm
9	Dibutyl phthalate (DBP) (CAS No. 84-74-2) * 1	Less than 1000ppm
10	Diisobutyl phthalate (DIBP) * 1 (CAS No. 84-69-5)	Less than 1000ppm

*1 : COMMISSION DELEGATED DIRECTIVE (EU) 2015/863

Table 1: Construction

Core no.	Cabling Diameter [Nom.] (mm)	Jacket		Unit length (m)
		Thickness [Nom.] (mm)	Outer Diameter (mm)	
3	2.5	0.6	3.7 ± 0.5	200
6	3.4		4.6 ± 0.5	
8	3.8		5.0 ± 0.5	
12	4.7		5.9 ± 0.5	
16	5.3		6.5 ± 0.5	
20	5.8	0.81	7.4 ± 0.5	100

Table 2: Insulation color

Core No.	Color	Dot mark	Dot mark color	Core No.	Color	Dot mark	Dot mark color
1	Brown	■ (1 short dot)	Black	11	Brown	■ ■ (2 short dots)	Black
2	Brown		Red	12	Brown		Red
3	Yellow		Black	13	Yellow		Black
4	Yellow		Red	14	Yellow		Red
5	Light Green		Black	15	Light Green		Black
6	Light Green		Red	16	Light Green		Red
7	Gray		Black	17	Gray		Black
8	Gray		Red	18	Gray		Red
9	White		Black	19	White		Black
10	White		Red	20	White		Red