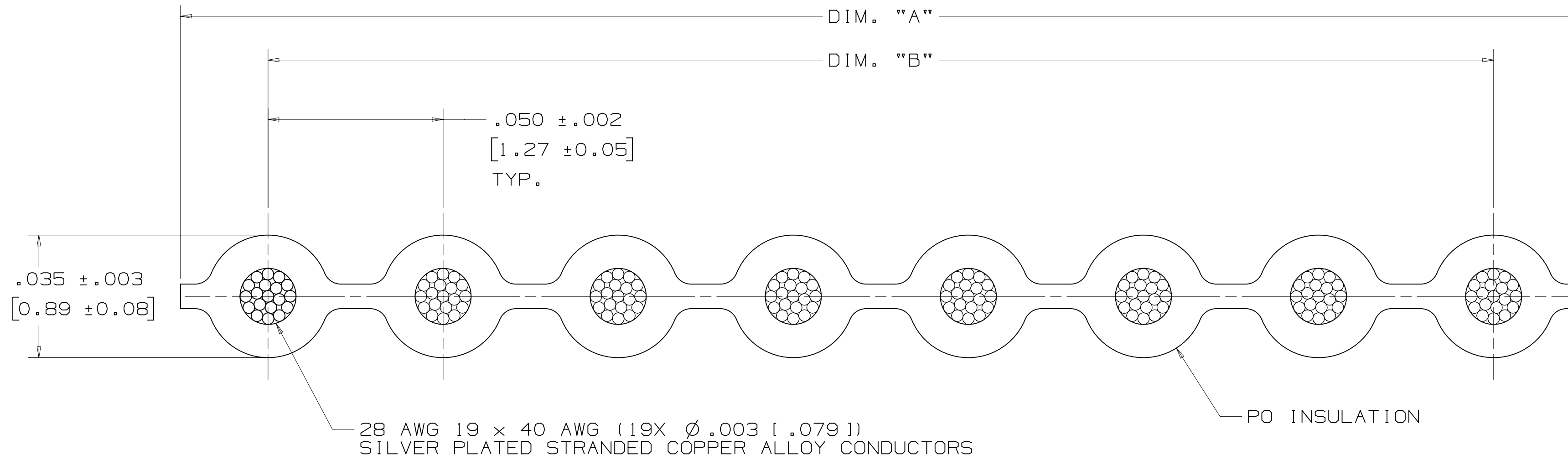


3M™ HIGH FLEX LIFE FLAT CABLE, HF319 SERIES
 .050", 28 AWG STRANDED, HIGH FLEX LIFE, HALOGEN FREE PO



Note: Available in standard 100 ft and 300 ft rolls, please specify when ordering.
 Contact 3M for availability of additional conductor counts and/or custom roll lengths.

- NOTES
- MATERIAL:
 A) PRIMARY INSULATION: HALOGEN FREE POLYOLEFIN (PO).
 B) CONDUCTORS: 28 AWG, 19 X 40 AWG SILVER PLATED STRANDED COPPER ALLOY
 - REGULATORY INFORMATION:
 VISIT 3M.com/regs OR CONTACT YOUR 3M REPRESENTATIVE TO FIND THE RoHS COMPLIANCE STATUS OF THE 3M PART YOU ARE INTERESTED IN.

 UL FILE NO: E42769.
 UL STYLE NO: 21682.
 - MARKINGS:
 STANDARD: NONE
 CANADIAN: SEE "PRINTING ILLUSTRATION" VIEW
 PRIMARY CABLE: BLUE MARK ON EDGES DESIGNATES WIRE NUMBER 1.
 - ENVIRONMENTAL:
 TEMP RATING: -40°C TO +105°C (EIA-364-32G, METHOD A, TEST CONDITION 2).

 -10°C TO +105°C (UL TEMPERATURE RATING)
 FLAMABILITY RATING: HORIZONTAL.
 - HALOGEN FREE IS DEFINED AS BOTH:
 1) NO HALOGEN COMPOUNDS THAT ARE INTENTIONALLY ADDED TO THE PRODUCT OR USED IN THE MANUFACTURING PROCESS FOR THE PRODUCT.
 2) ANY IMPURITIES PRESENT ARE LESS THAN 900 ppm BROMINE, LESS THAN 900 ppm CHLORINE AND/OR LESS THAN 1500 ppm TOTAL BROMINE AND CHLORINE. THE LATTER ARE THE LEVELS SET FORTH IN CERTAIN INDUSTRY STANDARDS FOR PRINTED CIRCUIT BOARDS, SUCH AS THE INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC) 61249-2-21 STANDARD. THIS INFORMATION REPRESENTS 3M'S KNOWLEDGE AND BELIEF WHICH MAY BE BASED IN WHOLE OR IN PART ON INFORMATION PROVIDED BY 3RD PARTY SUPPLIERS TO 3M.

ORDERING INFORMATION

X HF319/XX XX

BLANK = STANDARD
 C = CANADIAN

NUMBER OF CONDUCTORS
 (SEE TABLE 1)

BLANK = STANDARD
 SF = SPLICE FREE

ROLLING FLEX CYCLES PER
 EIA-364-41

| RADIUS | MINIMUM CYCLES |
|--------|----------------|
| 1/2" | 18 MILLION |
| 3/4" | 113 MILLION |

ALL CYCLES WERE PERFORMED AT AMBIENT CONDITIONS.

TABLE 1
 DIMENSION CHART

| NUMBER OF CONDUCTORS | 3M PART NUMBER | DIMENSION 'A' ± AS NOTED | DIMENSION 'B' (SEE NOTE 2) |
|----------------------|----------------|--------------------------|----------------------------|
| 6 | HF319/06 | 0.300"±0.010" | 0.250"±0.007" |
| 9 | HF319/09 | 0.450"±0.010" | 0.400"±0.007" |
| 10 | HF319/10 | 0.500"±0.010" | 0.450"±0.007" |
| 14 | HF319/14 | 0.700"±0.010" | 0.650"±0.007" |
| 15 | HF319/15 | 0.750"±0.010" | 0.700"±0.007" |
| 16 | HF319/16 | 0.800"±0.015" | 0.750"±0.011" |
| 20 | HF319/20 | 1.000"±0.015" | 0.950"±0.011" |
| 24 | HF319/24 | 1.200"±0.015" | 1.150"±0.011" |
| 25 | HF319/25 | 1.250"±0.015" | 1.200"±0.011" |
| 26 | HF319/26 | 1.300"±0.015" | 1.250"±0.011" |
| 30 | HF319/30 | 1.500"±0.020" | 1.450"±0.015" |
| 34 | HF319/34 | 1.700"±0.020" | 1.650"±0.015" |
| 36 | HF319/36 | 1.800"±0.020" | 1.750"±0.015" |
| 37 | HF319/37 | 1.850"±0.020" | 1.800"±0.015" |
| 40 | HF319/40 | 2.000"±0.020" | 1.950"±0.015" |
| 50 | HF319/50 | 2.500"±0.020" | 2.450"±0.015" |
| 60 | HF319/60 | 3.000"±0.020" | 2.950"±0.015" |
| 64 | HF319/64 | 3.200"±0.020" | 3.150"±0.015" |

TABLE 2
 ELECTRICAL CHARACTERISTICS

| VOLTAGE RATING | USA: 300V, CANADA: 150V, EU: 50V | |
|--------------------------|---|------------------------|
| INSULATION RESISTANCE | PRIMARY CABLE >1 X 10 ¹⁰ Ω/10 FT [3 m] | |
| | UNBALANCED | BALANCED |
| CHARACTERISTIC IMPEDANCE | 100 Ω | 169 Ω |
| CAPACITANCE | 15.0 pF/ft [49.2 pF/m] | 8.4 pF/ft [27.7 pF/m] |
| INDUCTANCE | 0.15 μH/ft [0.49 μH/m] | 0.24 μH/ft [0.79 μH/m] |
| PROPAGATION DELAY | 1.48 ns/ft [4.86 ns/m] | 1.42 ns/ft [4.66 ns/m] |
| VELOCITY OF PROPAGATION | 68% | 72% |

NOTE: UNBALANCED IS MEASURED BETWEEN GROUND-SIGNAL-GROUND CONDUCTORS.
 BALANCED IS MEASURED WITHIN A PAIR.

"PRINTING ILLUSTRATION"

AWM 21682 105°C 300V HOR AWM 1A 105°C 150V FT2 EU<50V

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<http://www.3mconnectors.com>

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| | | | | | | |
|------------------------|---------------|---|---|----------------------------|------|------|
| DESIGN REFERENCE | NEXT ASSEMBLY | REV | ECO | ISSUE DATE AND DESCRIPTION | DRFT | CHKD |
| | | | | | | |
| APPROVED | DATE | APPROVED | DATE | DATE | | |
| CASTIGLIONE | MAY 15, 2012 | S. NEU | MAY 15, 2012 | | | |
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| THIRD ANGLE PROJECTION | | INCHES | TITLE HIGH FLEX LIFE, FLAT CABLE, 28 AWG STRANDED, HF319 | | | |
| MAX SURFACE ROUGHNESS | | MILLIMETERS | CAGE NUMBER D 78-5100-2342-3 | | | |
| MARKED ONLY | | ANGLES | DRAWING NO. 78-5100-2342-3 | | | |
| | | | MODEL HF319 | | | |

78-5100-2342-3
 DRAWING NUMBER
 11/18
 Time 9/7/2018 11:51:00 AM
 UTC Offset (hrs) 6

3M™ HIGH FLEX LIFE FLAT CABLE, HF319 SERIES
 .050", 28 AWG STRANDED, HIGH FLEX LIFE, HALOGEN FREE PO

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| | | | | | | |
| ACROSS CODES | | DRFT | DATE | MFG | DATE | |
| | | CASTIGLIONE | MAY 15, 2012 | | MAY 15, 2012 | |
| DIVISION | DIVISION CODE | CHKD | DATE | APPRV | DATE | |
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| | | INCHES | | TITLE | | |
| | | .00 ± .1 | | HIGH FLEX LIFE, FLAT CABLE, 28 AWG STRANDED, HF319 | | |
| | | .000 ± .010 | | CAGE NUMBER | | |
| | | .0000 ± | | D 78-5100-2342-3 C | | |
| THIRD ANGLE PROJECTION | | MILLIMETERS | | MODEL | | |
| | | 0 ± 2.5 | | HF319 | | |
| INTERPRET PER ASME Y14.5 - 2009 | | .00 ± .25 | | DET | | |
| | | .000 ± | | LISTS <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO SHT 2 OF 2 | | |
| MAX SURFACE ROUGHNESS | | ANGLES | | | | |
| DTX SURFACES | | | | | | |
| <input checked="" type="checkbox"/> MARKED ONLY | | | | | | |

78-5100-2342-3
 DRAWING NUMBER
 1
 REVISION
 C
 6
 (hrs)
 Offset

 UTC
 9/7/2018
 Time
 Standard
 Central
 Imaged