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## Single Core Conductor BETAtherm® 155 UL/cUL (AWG)

BETAtherm® 155 UL/cUL is a flexible low-voltage cable with UL recognition, consisting of a tinned copper stranded wire and insulated with coloured electron-beam crosslinked polyolefine copolymer.

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### Attributes

Due to its electron-beam cross-linked insulation, BETAtherm® 155 UL/(AWG) achieves a special thermal resistance required for Class F. This results in excellent thermal resistance. However, it cannot even be melted at elevated temperatures and has to be skinned during processing. Skinning is simple and also possible at machines.

BETAtherm® cables are resistant to all common insulating varnishes. They are flame retardant.

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### Application

BETAtherm® 155 UL/cUL (AWG) is suitable for the internal wiring of electric machines, lamps, heating appliances, as well as for application in apparatus, mechanical and plant engineering. Due to the high thermal load capacity, it might be possible to reduce the conductor cross section and, therefore, save space and reduce the weight.

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### Standards

- Thermal class F (155 °C) according to IEC (UL Rating 150 °C)
- UL 3289 and CSA cUL 1503 (valid from 0.50 mm<sup>2</sup>)
- (UL-standard for American market / cUL-standard for canadian market)

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### Delivery forms

AWG dimensions:

AWG 14-24: 300 m rings

Other cross sections available on request.

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### Conductor

Tinned copper wire VDE 0295/ IEC 60228 class 5.

The dimensions specified in the technical datasheet are regarded as standard values. The actual cross sections may vary. The cables are manufactured according to European standards with a AMG conductor cross section, AWG sizes are approximate values and viceversa. Always observe relevant standards valid for divergent operating conditions when laying for greater limit current loads.

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### Color

Green-yellow, black, light blue, red, yellow, green.

Brown, white, grey, violet, orange, and 2-coloured on request.

| Dimension<br>AWG          | Unit of<br>measure |                |                |                |                |                |
|---------------------------|--------------------|----------------|----------------|----------------|----------------|----------------|
| Nominal cross<br>section  |                    | AWG<br>22      | AWG<br>20      | AWG<br>18      | AWG<br>16      | AWG<br>14      |
| Strands x<br>diameter     | ref. value         | 19 x<br>0.160  | 19 x<br>0.203  | 19 x<br>0.254  | 19 x<br>0.297  | 19 x<br>0.374  |
| Cu Litz nom.<br>diameter  | mm                 | 0.80           | 1.00           | 1.30           | 1.45           | 1.85           |
| Wall thickness<br>desired | mm                 | 0.85           | 0.85           | 0.85           | 0.85           | 0.85           |
| Wall thickness<br>min.    | mm                 | 0.686          | 0.686          | 0.686          | 0.686          | 0.686          |
| Outer<br>diameter         | mm                 | 2.50 ±<br>0.10 | 2.70 ±<br>0.10 | 3.00 ±<br>0.10 | 3.15 ±<br>0.20 | 3.55 ±<br>0.20 |
| Thermal load              | kWh/m              | 0.049          | 0.056          | 0.064          | 0.069          | 0.082          |

| Mechanical           | Value       |
|----------------------|-------------|
| Bend radius          | 4 x outer-Ø |
| Soldering resistance | very good   |

| Thermal       | Unit of<br>measure | Value | Test method |
|---------------|--------------------|-------|-------------|
| Thermal class |                    | F     |             |

**Product datasheet**

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| Thermal                             | Unit of measure | Value                | Test method       |
|-------------------------------------|-----------------|----------------------|-------------------|
| Temperature range fixed application | °C              | -55 to +150          | UL 3289 /cUL 1503 |
| Temperature range short circuit     | °C              | max. +280 for 5 sec. |                   |
| Thermal resistance                  |                 | 155° C/5000 h        | IEC 60216-2       |
| Burning behaviour                   |                 | flame retardent      | EN IEC 60332-1-2  |

| Electrical      | Unit of measure | Value             | Test method        |
|-----------------|-----------------|-------------------|--------------------|
| Rated voltage   | V               | U0/U 0,6 / 1kV AC | UL 3289 / cUL 1503 |
| Testing voltage | V               | 3500              | UL 3289 / cUL 1503 |

| Chemical           | Value                                           |
|--------------------|-------------------------------------------------|
| Insulation         | Polyolefin-copolymer electron-beam cross linked |
| Resistance against | Resistant against common impregnants            |

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.

Updated 05/24

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