NOTE: These are minimum average dimensions as per CSA Standards.

* Other conductor sizes and outer jacket colours are available upon request. (#s in brackets represent # of strands / conductor)

** Longer maximum lengths may be possible. Standard sizes and lengths may be supplied. Reel sizes are not guaranteed. The factory reserves the right to make changes as necessary to optimize manufacturing requirements.

** CONSTRUCTION **

Conductor
- Class B compressed stranded copper
- in accordance with ASTM B3 and ASTM B8

Options
- Class B compact stranded -8000 Series Aluminum -ACM
- Class B compact stranded copper

Conductor Shield
- Extruded semi-conducting thermosetting polymeric layer

Insulation
- TR- XLPE - (Tree Retardent Cross Linked Polyethylene)
- Thickness: 0.14 inches (3.56mm) - nominal
- Insulation level: 133%
- 105°C rated

Insulation Shield
- Extruded Semi-conducting thermosetting polymeric layer
- CSA B8.10 - Shield Removal/termination requirements are printed on the surface
- Phase identification as per ICEA Method 3, using printed circuit numbers
- Meets requirement of ICEA but built to CSA standards

Copper Tape Shield
- Helically wrapped 5 mil copper tape with 25% overlap

Bonding Conductor
- Class B compressed stranded bare copper
- in accordance with ASTM B3 and B8

Fillers
- Non-wicking, non-hygrosopic

Overall Jacket
- Black PVC (optional colours available)
- Nominal Thickness:
  - No.2 AWG = 0.08 inches (2.03mm)
  - No.1 AWG to 350 kcmil = 0.11 inches (2.79mm)
  - 500 kcmil to 1000 kcmil = 0.14 inches (3.56mm)

Typical Print Legend
- [CSA] SOUTHWIRE [NESC] #P 3/C [#AWG or #kcmil] CU 140 TRXLPE 8KV 133% INS LEVEL 25% TS SUN RES TC-ER 105° FT4 (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

** TABLE 1 - WEIGHTS & MEASUREMENTS **

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CU140P31-002</td>
<td>2/7</td>
<td>0.283</td>
<td>0.593</td>
<td>0.673</td>
<td>17.1</td>
<td>6</td>
<td>1.657</td>
<td>42.1</td>
<td>11.6</td>
<td>295</td>
<td>1603</td>
</tr>
<tr>
<td>CU140P31-001</td>
<td>1/15</td>
<td>0.322</td>
<td>0.632</td>
<td>0.712</td>
<td>18.1</td>
<td>6</td>
<td>1.801</td>
<td>45.7</td>
<td>12.6</td>
<td>320</td>
<td>1830</td>
</tr>
<tr>
<td>CU140P31-010</td>
<td>1/0/19</td>
<td>0.362</td>
<td>0.672</td>
<td>0.752</td>
<td>19.1</td>
<td>6</td>
<td>1.888</td>
<td>47.9</td>
<td>13.2</td>
<td>338</td>
<td>2208</td>
</tr>
<tr>
<td>CU140P31-020</td>
<td>1/0/19</td>
<td>0.405</td>
<td>0.715</td>
<td>0.795</td>
<td>20.2</td>
<td>6</td>
<td>1.980</td>
<td>50.3</td>
<td>13.9</td>
<td>352</td>
<td>2545</td>
</tr>
<tr>
<td>CU140P31-030</td>
<td>3/0/19</td>
<td>0.456</td>
<td>0.766</td>
<td>0.846</td>
<td>21.5</td>
<td>4</td>
<td>2.091</td>
<td>53.1</td>
<td>14.6</td>
<td>372</td>
<td>3013</td>
</tr>
<tr>
<td>CU140P31-040</td>
<td>4/0/19</td>
<td>0.512</td>
<td>0.822</td>
<td>0.902</td>
<td>22.9</td>
<td>4</td>
<td>2.212</td>
<td>56.2</td>
<td>15.5</td>
<td>393</td>
<td>3529</td>
</tr>
<tr>
<td>CU140P31-250</td>
<td>250/37</td>
<td>0.558</td>
<td>1.018</td>
<td>0.958</td>
<td>23.3</td>
<td>4</td>
<td>2.322</td>
<td>59.2</td>
<td>16.3</td>
<td>415</td>
<td>3630</td>
</tr>
<tr>
<td>CU140P31-350</td>
<td>350/37</td>
<td>0.661</td>
<td>1.061</td>
<td>1.061</td>
<td>26.9</td>
<td>3</td>
<td>2.555</td>
<td>64.9</td>
<td>17.9</td>
<td>454</td>
<td>5183</td>
</tr>
<tr>
<td>CU140P31-500</td>
<td>500/37</td>
<td>0.789</td>
<td>1.109</td>
<td>1.189</td>
<td>30.2</td>
<td>3</td>
<td>2.881</td>
<td>73.4</td>
<td>20.2</td>
<td>514</td>
<td>7005</td>
</tr>
<tr>
<td>CU140P31-750</td>
<td>750/61</td>
<td>0.988</td>
<td>1.298</td>
<td>1.378</td>
<td>35.0</td>
<td>2</td>
<td>3.300</td>
<td>83.8</td>
<td>23.1</td>
<td>587</td>
<td>9829</td>
</tr>
<tr>
<td>CU140P31-1000</td>
<td>1000/61</td>
<td>1.117</td>
<td>1.447</td>
<td>1.527</td>
<td>38.8</td>
<td>1</td>
<td>3.622</td>
<td>92.0</td>
<td>25.4</td>
<td>644</td>
<td>12585</td>
</tr>
</tbody>
</table>

Note: These are minimum average dimensions as per CSA Standards.

* Other conductor sizes and outer jacket colours are available upon request. (#s in brackets represent # of strands / conductor)

** Longer maximum lengths may be possible. Standard sizes and lengths may be supplied. Reel sizes are not guaranteed. The factory reserves the right to make changes as necessary to optimize manufacturing requirements.
### TABLE 2 - ENGINEERING SPECIFICATIONS

<table>
<thead>
<tr>
<th>HVTC Product Code</th>
<th>HVT-CU 3/C 140TRXLPE TS PVC 8KV 133% CSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HVT-3/C 140TRXLPE TS PVC 8KV 133% CSA</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Design
- **Qualification Standards**
  - CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 kV
  - CSA C68.3 - Shielded & Concentric Neutral Power Cable - 5 to 46 kV
  - CSA C22.2 No. 230 - Tray Cables
  - ICEA S-93-639 (NEMA WC 74) 5 to 46 kV - Shielded Power Cable
  - AEIC CS-8 - Qualification Testing Requirements

#### Flame Test Ratings
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT1V - Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- ICEE S-93-639 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr.)

#### Operating Temperatures
- -40°C - CSA Cold Bend and Impact Temperature
- -25°C - Min. Installation Temperature
- 105°C - Max. Continuous Operating Temperature
- 140°C for Emergency Overload Temperature
- 250°C for Short Circuit Temperature

#### Product Ratings
- **CSA C22.2 No. 2568 & No. 0.3 - Wire and Cable Test Methods**
- **CSA LTG5 (-40°C) - as per C68.10 - for Cold Bend and Impact rating**
- **CSA FT4 - for Flame Retardancy rating**
- **CSA SUN RES - for Sunlight Resistant rating**
- **CSA TC-ER ***

#### Flame Test Ratings
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT1V - Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- ICEE S-93-639 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr.)

#### Operating Temperatures
- -40°C - CSA Cold Bend and Impact Temperature
- -25°C - Min. Installation Temperature
- 105°C - Max. Continuous Operating Temperature
- 140°C for Emergency Overload Temperature
- 250°C for Short Circuit Temperature

#### Product Ratings
- **CSA C22.2 No. 2568 & No. 0.3 - Wire and Cable Test Methods**
- **CSA LTG5 (-40°C) - as per C68.10 - for Cold Bend and Impact rating**
- **CSA FT4 - for Flame Retardancy rating**
- **CSA SUN RES - for Sunlight Resistant rating**
- **CSA TC-ER ***

### Table 2 - Engineering Specifications

<table>
<thead>
<tr>
<th>HVTC Product Code</th>
<th>Pulling Tension</th>
<th>DC Resistance @ 25°C</th>
<th>AC Resistance @ 90°C, @ 60 Hz</th>
<th>Inductance L</th>
<th>Capacitance C</th>
<th>Inductive Reactance @ 60Hz</th>
<th>Capacitive Reactance @ 60Hz</th>
<th>Positive - Sequence Impedance</th>
<th>Zero - Sequence Impedance</th>
<th>Short Circuit Current</th>
<th>Allowable Ampacities in Ventilated Cable Tray</th>
<th>Allowable Ampacities Directly Buried in Earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU140P31-002</td>
<td>1580</td>
<td>0.162 0.532</td>
<td>0.203 0.665</td>
<td>0.1027</td>
<td>0.3369</td>
<td>0.0527 0.1729</td>
<td>0.0387 0.1270</td>
<td>0.0503 0.1513</td>
<td>0.203 + j0.042</td>
<td>0.577 + j0.483</td>
<td>4.8 172 201</td>
<td></td>
</tr>
<tr>
<td>CU140P31-001</td>
<td>2009</td>
<td>0.129 0.423</td>
<td>0.161 0.530</td>
<td>0.0687</td>
<td>0.3238</td>
<td>0.0578 0.1986</td>
<td>0.0372 0.1221</td>
<td>0.0459 0.1601</td>
<td>0.162 + j0.041</td>
<td>0.537 + j0.462</td>
<td>6.0 197 228</td>
<td></td>
</tr>
<tr>
<td>CU140P31-005</td>
<td>2534</td>
<td>0.102 0.335</td>
<td>0.128 0.419</td>
<td>0.0953</td>
<td>0.3126</td>
<td>0.0630 0.2067</td>
<td>0.0359 0.1179</td>
<td>0.0421 0.1286</td>
<td>0.128 + j0.039</td>
<td>0.504 + j0.441</td>
<td>7.6 225 257</td>
<td></td>
</tr>
<tr>
<td>CU140P31-010</td>
<td>3194</td>
<td>0.081 0.266</td>
<td>0.101 0.333</td>
<td>0.0922</td>
<td>0.3026</td>
<td>0.0686 0.2250</td>
<td>0.0348 0.1141</td>
<td>0.0387 0.1008</td>
<td>0.102 + j0.038</td>
<td>0.477 + j0.421</td>
<td>9.6 260 292</td>
<td></td>
</tr>
<tr>
<td>CU140P31-020</td>
<td>4027</td>
<td>0.064 0.211</td>
<td>0.081 0.264</td>
<td>0.0892</td>
<td>0.2926</td>
<td>0.0751 0.2468</td>
<td>0.0336 0.1103</td>
<td>0.0353 0.0981</td>
<td>0.081 + j0.036</td>
<td>0.455 + j0.398</td>
<td>12.1 297 330</td>
<td></td>
</tr>
<tr>
<td>CU140P31-030</td>
<td>5078</td>
<td>0.051 0.167</td>
<td>0.064 0.211</td>
<td>0.0864</td>
<td>0.2836</td>
<td>0.0823 0.2701</td>
<td>0.0326 0.1069</td>
<td>0.0322 0.0998</td>
<td>0.085 + j0.035</td>
<td>0.436 + j0.374</td>
<td>15.2 342 372</td>
<td></td>
</tr>
<tr>
<td>CU140P31-040</td>
<td>6000</td>
<td>0.043 0.141</td>
<td>0.054 0.178</td>
<td>0.0852</td>
<td>0.2796</td>
<td>0.0860 0.2921</td>
<td>0.0321 0.1064</td>
<td>0.0308 0.0994</td>
<td>0.085 + j0.035</td>
<td>0.423 + j0.353</td>
<td>18.0 376 410</td>
<td></td>
</tr>
<tr>
<td>CU140P31-050</td>
<td>8400</td>
<td>0.031 0.101</td>
<td>0.039 0.129</td>
<td>0.0816</td>
<td>0.2679</td>
<td>0.0862 0.2539</td>
<td>0.0308 0.1010</td>
<td>0.0269 0.0982</td>
<td>0.040 + j0.033</td>
<td>0.400 + j0.317</td>
<td>25.2 460 487</td>
<td></td>
</tr>
<tr>
<td>CU140P31-060</td>
<td>12000</td>
<td>0.022 0.071</td>
<td>0.028 0.082</td>
<td>0.0783</td>
<td>0.2570</td>
<td>0.0785 0.1956</td>
<td>0.0295 0.0998</td>
<td>0.0232 0.0701</td>
<td>0.029 + j0.031</td>
<td>0.377 + j0.279</td>
<td>30.0 556 573</td>
<td></td>
</tr>
<tr>
<td>CU140P31-070</td>
<td>18000</td>
<td>0.014 0.047</td>
<td>0.020 0.085</td>
<td>0.0755</td>
<td>0.2476</td>
<td>0.0732 0.1329</td>
<td>0.0284 0.0933</td>
<td>0.0200 0.0661</td>
<td>0.020 + j0.030</td>
<td>0.350 + j0.234</td>
<td>53.9 678 698</td>
<td></td>
</tr>
<tr>
<td>CU140P31-080</td>
<td>24000</td>
<td>0.011 0.035</td>
<td>0.016 0.052</td>
<td>0.0733</td>
<td>0.2467</td>
<td>0.1506 0.4944</td>
<td>0.0277 0.0907</td>
<td>0.0176 0.0545</td>
<td>0.016 + j0.029</td>
<td>0.331 + j0.205</td>
<td>71.9 798 772</td>
<td></td>
</tr>
</tbody>
</table>

* Calculations are based on 5 mil 25% over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

1. Ampacities are based on Table D17N of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

2. Ampacities are based on Table D17E of the 2015 Canadian Electrical Code Part I

3. For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.