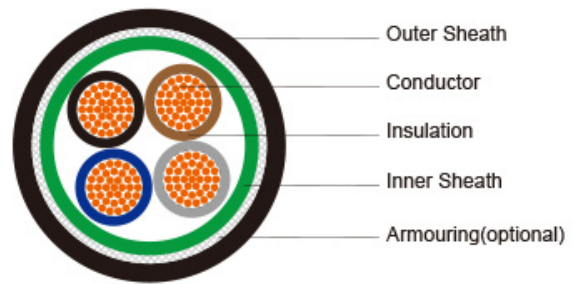


600/1000V LSZH Sheathed, Armoured (2-4cores)



Application:

This range of screened cables drastically reduce interferences from electrical noise, especially in Variable Speed Drive (VSD) applications and are manufactured with fixed conductors.

Standard:

Basic design to IEC 60502-1; BS 6724

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)

EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; CEI 20-35/1-2; EN 50265-2-1; DIN VDE 0482-265-2-1

Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)

EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; CEI 20-22/3-4; EN 50266-2-4; DIN VDE 0482-266-2-4

Halogen Free

IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1

No Corrosive Gas Emission

IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2

minimum Smoke Emission

IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2; BS 7622-1&2

No Toxic gases

NES 02-713

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.

Insulation: Extruded cross-linked XLPE compound.

Inner Sheath(optional): LSZH Compound

Armouring(optional): Galvanized Steel Wire

Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation colour as per bs7671

| | with earth conductor | without earth conductor |
|---------------|-------------------------|-------------------------|
| 2Cores | - | Brown,Blue |
| 3Cores | Yellow/Green,Brown,Blue | Brown,Gray,Black |

| | | |
|----------------------|------------------------------------|-----------------------------|
| 4Cores | Yellow/Green,Brown,Gray,Black | Brown,Gray,Black,Blue |
| 5Cores | Yellow/Green,Brown,Gray,Black,Blue | Brown,Gray,Black,Blue,Black |
| above 5 Cores | Yellow/Green,Black Numbered | Black Numbered |

sheath colour: Black

Physical AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C

250°C in short-circuit for 5s max.

Minimum bending radius: 8 x Overall Diameter (unarmoured cable)

10 x Overall Diameter (armoured cable)

CONSTRUCTION PARAMETERS

| Conductor | | | | | | | | |
|-----------------------------------|---|------------------------------------|--------------------------------|-------------------|-----------------------------|----------------------------|--------------------------------|-------------------|
| No. of Core X Cross Section | No./ Nominal Diameter Of Strands | Nominal Insulation Thickness | Unarmoured | | Armoured | | | |
| | | | Nominal Overall Diameter | Approx. Weight | Diameter Under Armour | Armour Wire Diameter | Nominal Overall Diameter | Approx. Weight |
| mm ² | No./mm | mm | mm | kg/km | mm | mm | mm | kg/km |
| 2x1.5 | 7/0.53 | 0.7 | 10.0 | 126 | 8.5 | 0.9 | 13.9 | 350 |
| 2x2.5 | 7/0.67 | 0.7 | 10.8 | 158 | 9.3 | 0.9 | 14.7 | 400 |
| 2x4 | 7/0.85 | 0.7 | 11.9 | 205 | 10.4 | 0.9 | 15.8 | 475 |
| 2x6 | 7/1.04 | 0.7 | 13.0 | 264 | 11.5 | 0.9 | 16.9 | 560 |
| 2x10 | 7/1.35 | 0.7 | 14.9 | 378 | 13.4 | 1.25 | 19.5 | 810 |
| 2x16 | 7/1.70 | 0.7 | 17.0 | 534 | 15.5 | 1.25 | 21.6 | 980 |
| 2x25 | 7/2.14 | 0.9 | 20.4 | 650 | 18.9 | 1.6 | 25.7 | 1410 |
| 2x35 | 7/2.52 | 0.9 | 22.7 | 880 | 21.2 | 1.6 | 28.0 | 1930 |
| 3x1.5 | 7/0.53 | 0.7 | 10.5 | 145 | 9.0 | 0.9 | 14.4 | 390 |
| 3x2.5 | 7/0.67 | 0.7 | 11.4 | 185 | 9.9 | 0.9 | 15.3 | 450 |
| 3x4 | 7/0.85 | 0.7 | 12.5 | 247 | 11.0 | 0.9 | 16.4 | 540 |
| 3x6 | 7/1.04 | 0.7 | 13.8 | 323 | 11.6 | 1.25 | 17.7 | 745 |
| 3x10 | 7/1.35 | 0.7 | 15.8 | 474 | 14.3 | 1.25 | 20.4 | 950 |
| 3x16 | 7/1.70 | 0.7 | 18.0 | 682 | 16.5 | 1.25 | 23.0 | 1250 |
| 3x25 | 7/2.14 | 0.9 | 21.7 | 910 | 20.2 | 1.6 | 27.0 | 1840 |
| 3x35 | 7/2.52 | 0.9 | 24.0 | 1180 | 22.4 | 1.6 | 29.2 | 2050 |
| 3x50(S) | 19/1.78 | 1.0 | 25.5 | 1600 | 24.2 | 1.6 | 31.2 | 2590 |
| 3x70(S) | 19/2.14 | 1.1 | 29.0 | 2240 | 28.2 | 2.0 | 36.2 | 3560 |
| 3x95(S) | 19/2.52 | 1.1 | 33.5 | 3050 | 31.7 | 2.0 | 40.1 | 4590 |
| 3x120(S) | 37/2.03 | 1.2 | 37.5 | 3800 | 36.0 | 2.0 | 44.6 | 5810 |

| | | | | | | | | |
|----------|---------|-----|------|-------|------|------|------|-------|
| 3x150(S) | 37/2.25 | 1.4 | 40.5 | 4640 | 39.5 | 2.5 | 53.5 | 6920 |
| 3x185(S) | 37/2.52 | 1.6 | 45.0 | 5870 | 43.3 | 2.5 | 53.5 | 8340 |
| 3x240(S) | 61/2.25 | 1.7 | 50.5 | 7670 | 48.4 | 2.5 | 59.0 | 10450 |
| 3x300(S) | 61/2.52 | 1.8 | 57.0 | 9460 | 54.4 | 2.5 | 65.4 | 12700 |
| 3x400(S) | 61/2.85 | 2.0 | 63.0 | 11945 | 57.8 | 2.5 | 70.0 | 15326 |
| 4x1.5 | 7/0.53 | 0.7 | 11.3 | 169 | 10.0 | 0.9 | 15.4 | 430 |
| 4x2.5 | 7/0.67 | 0.7 | 12.3 | 220 | 10.8 | 0.9 | 16.2 | 505 |
| 4x4 | 7/0.85 | 0.7 | 13.6 | 297 | 12.1 | 0.9 | 17.5 | 710 |
| 4x6 | 7/1.04 | 0.7 | 15.0 | 392 | 13.5 | 1.25 | 19.6 | 855 |
| 4x10 | 7/1.35 | 0.7 | 17.2 | 585 | 15.7 | 1.25 | 21.8 | 1120 |
| 4x16 | 7/1.70 | 0.7 | 19.7 | 851 | 18.2 | 1.6 | 25.0 | 1600 |
| 4x25 | 7/2.14 | 0.9 | 23.9 | 1200 | 22.4 | 1.6 | 29.2 | 2160 |
| 4x35(S) | 7/2.52 | 0.9 | 25.0 | 1600 | 24.4 | 1.6 | 31.4 | 2560 |
| 4x50(S) | 19/1.78 | 1.0 | 28.0 | 2200 | 28.0 | 1.6 | 35.2 | 3180 |
| 4x70(S) | 19/2.14 | 1.1 | 32.0 | 3050 | 32.2 | 2.0 | 40.6 | 4490 |
| 4x95(S) | 19/2.52 | 1.1 | 37.0 | 4070 | 36.0 | 2.0 | 44.6 | 5425 |
| 4x120(S) | 37/2.03 | 1.2 | 42.0 | 5915 | 38.0 | 2.5 | 50.0 | 7550 |
| 4x150(S) | 37/2.25 | 1.4 | 46.0 | 6350 | 42.8 | 2.5 | 53.0 | 8555 |
| 4x185(S) | 37/2.52 | 1.6 | 50.0 | 7890 | 48.4 | 2.5 | 59.0 | 10560 |
| 4x240(S) | 61/2.25 | 1.7 | 57.0 | 10400 | 55.0 | 2.5 | 66.0 | 13180 |
| 4x300(S) | 61/2.52 | 1.8 | 63.0 | 12810 | 59.6 | 2.5 | 71.0 | 16100 |
| 4x400(S) | 61/2.85 | 2.0 | 71.0 | 15869 | 66.1 | 3.15 | 79.4 | 20715 |
| 4x500(S) | 61/3.20 | 2.2 | 78.0 | 20300 | 74.6 | 3.15 | 88.5 | 25347 |

(S) - Sectoral Stranded Conductors

Electrical PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Unarmoured Current-Carrying Capacities (Amp)

| Conduct or cross-sectional area | Reference method 4 (enclosed in conduit in thermally insulating wall etc) | | Reference method 3 (enclosed in conduit on a wall or in trunking etc) | | Reference method 1 (clipped direct) | | Reference method 11 (on a perforated cable tray, horizontal or vertical) | | Reference method 12 (free air) | | |
|---------------------------------|---|------------------------|---|------------------------|-------------------------------------|------------------------|--|------------------------|--------------------------------|----------------------|-------------------|
| | 2 cables, single | 3 or 4 cables, 3-phase | 2 cables, single | 3 or 4 cables, 3-phase | 2 cables, single-phase | 3 or 4 cables, 3-phase | 2 cables, single-phase | 3 or 4 cables, 3-phase | Horizontal flat spaced | Vertical flat spaced | Trefoil |
| | 2 cables, single | 3 or 4 cables, 3-phase | 2 cables, single | 3 or 4 cables, 3-phase | 2 cables, single-phase | 3 or 4 cables, 3-phase | 2 cables, single-phase | 3 or 4 cables, 3-phase | 2 cables, single-phase a.c. or | 2 cables, single | 3 cables, trefoil |

| | - phase a.c. or d.c. | a.c. | - phase a.c. or d.c. | a.c. | a.c. or d.c. flat and touching | a.c. flat and touching or trefoil | a.c. or d.c. or flat and touching | a.c. flat and touching or trefoil | d.c. or 3 cables three phase | - phase a.c. or d.c. or 3 cables three phase | 3-phase a.c. |
|-----------------|----------------------|------|----------------------|------|--------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------|--|--------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 1.5 | 18 | 17 | 22 | 19 | 25 | 23 | - | - | - | - | - |
| 2.5 | 24 | 23 | 30 | 26 | 34 | 31 | - | - | - | - | - |
| 4 | 33 | 30 | 40 | 35 | 46 | 41 | - | - | - | - | - |
| 6 | 43 | 39 | 51 | 45 | 59 | 54 | - | - | - | - | - |
| 10 | 58 | 53 | 71 | 63 | 81 | 74 | - | - | - | - | - |
| 16 | 76 | 70 | 95 | 85 | 109 | 99 | - | - | - | - | - |
| 25 | 100 | 91 | 126 | 111 | 143 | 130 | 158 | 140 | 183 | 163 | 138 |
| 35 | 125 | 111 | 156 | 138 | 176 | 161 | 195 | 176 | 226 | 203 | 171 |
| 50 | 149 | 135 | 189 | 168 | 228 | 209 | 293 | 215 | 274 | 246 | 209 |
| 70 | 189 | 170 | 240 | 214 | 293 | 268 | 308 | 279 | 351 | 318 | 270 |
| 95 | 228 | 205 | 290 | 259 | 355 | 326 | 375 | 341 | 426 | 389 | 330 |
| 120 | 263 | 235 | 336 | 299 | 413 | 379 | 436 | 398 | 495 | 453 | 385 |
| 150 | 300 | 270 | 375 | 328 | 476 | 436 | 505 | 461 | 570 | 524 | 445 |
| 185 | 341 | 306 | 426 | 370 | 545 | 500 | 579 | 530 | 651 | 600 | 511 |
| 240 | 400 | 358 | 500 | 433 | 644 | 590 | 686 | 630 | 769 | 711 | 606 |
| 300 | 459 | 410 | 573 | 493 | 743 | 681 | 794 | 730 | 886 | 824 | 701 |
| 400 | - | - | 684 | 584 | 868 | 793 | 915 | 849 | 1065 | 994 | 820 |
| 500 | - | - | 783 | 666 | 990 | 904 | 1044 | 973 | 1228 | 1150 | 936 |

Voltage Drop (Per Amp Per Meter)

| Size of conductor | 2 cable s d.c. | 2 cables, single-phase a.c. | | 3 or 4 cables, 3-phase a.c. | | |
|-------------------|----------------|---|---|---|--|---|
| | | Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall) | Ref. Methods 1 and 11 (clipped direct or on trays touching) | Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall) | Ref. Methods 1, 11 and 12 (in trefoil) | Ref. Methods 1 and 11 (Flat and touching) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| mm ² | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m |
| 1.5 | 31 | 31 | 27 | 27 | 27 | 27 |

| | | | | | | | | | | | | | | | | |
|-----|-------|-----------|----------|----------|-----------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2.5 | 19 | 19 | | | 16 | | | 16 | | | 16 | | | 16 | | |
| 4 | 33 | 12 | | | 10 | | | 10 | | | 10 | | | 10 | | |
| 6 | 7.8 | 7.9 | | | 6.8 | | | 6.8 | | | 6.8 | | | 6.8 | | |
| 10 | 4.7 | 4.7 | | | 4.7 | | | 4 | | | 4 | | | 4 | | |
| 16 | 2.9 | 2.9 | | | 2.9 | | | 2.5 | | | 2.5 | | | 2.5 | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.85 | 1.8 5 | 0.3 1 | 1.9 0 | 1.8 5 | 0.1 90 | 1.8 5 | 1.6 0 | 0.2 7 | 1.6 5 | 1.6 00 | 0.1 65 | 1.6 00 | 1.6 00 | 0.1 90 | 1.6 00 |
| 35 | 1.35 | 1.3 5 | 0.2 9 | 1.3 5 | 1.3 5 | 0.1 80 | 1.3 5 | 1.1 5 | 0.2 5 | 1.1 5 | 0.1 50 | 1.5 5 | 1.5 0 | 1.1 50 | 0.1 80 | 1.1 50 |
| 50 | 0.99 | 1.0 0 | 0.2 9 | 1.0 5 | 0.9 9 | 0.1 80 | 1.0 0 | 0.8 7 | 0.2 5 | 0.9 0 | 0.8 60 | 0.1 55 | 0.8 70 | 0.8 60 | 0.1 80 | 0.8 70 |
| 70 | 0.68 | 0.7 0 | 0.2 8 | 0.7 5 | 0.6 8 | 0.1 75 | 0.7 1 | 0.6 0 | 0.2 4 | 0.6 5 | 0.5 90 | 0.1 50 | 0.6 10 | 0.5 90 | 0.1 75 | 0.6 20 |
| 95 | 0.49 | 0.5 1 | 0.2 7 | 0.5 8 | 0.4 9 | 0.1 70 | 0.5 2 | 0.4 4 | 0.2 3 | 0.5 0 | 0.4 30 | 0.1 45 | 0.4 50 | 0.4 30 | 0.1 70 | 0.4 60 |
| 120 | 0.39 | 0.4 1 | 0.2 6 | 0.4 8 | 0.3 9 | 0.1 65 | 0.4 3 | 0.3 5 | 0.2 3 | 0.4 2 | 0.3 40 | 0.1 40 | 0.3 70 | 0.3 40 | 0.1 65 | 0.3 80 |
| 150 | 0.32 | 0.3 3 | 0.2 6 | 0.4 3 | 0.3 2 | 0.1 65 | 0.3 6 | 0.2 9 | 0.2 3 | 0.3 7 | 0.2 80 | 0.1 40 | 0.3 10 | 0.2 80 | 0.1 65 | 0.3 20 |
| 185 | 0.25 | 0.2 7 | 0.2 6 | 0.3 7 | 0.2 6 | 0.1 65 | 0.3 0 | 0.2 3 | 0.2 3 | 0.3 2 | 0.2 20 | 0.1 40 | 0.2 60 | 0.2 20 | 0.1 65 | 0.2 80 |
| 240 | 0.19 | 0.2 1 | 0.2 6 | 0.3 3 | 0.2 0 | 0.1 60 | 0.2 5 | 0.1 85 | 0.2 2 | 0.2 9 | 0.1 70 | 0.1 40 | 0.2 20 | 0.1 70 | 0.1 65 | 0.2 40 |
| 300 | 0.155 | 0.1 75 | 0.2 5 | 0.3 1 | 0.1 6 | 0.1 60 | 0.2 2 | 0.1 50 | 0.2 2 | 0.2 7 | 0.1 40 | 0.1 40 | 0.1 95 | 0.1 35 | 0.1 60 | 0.2 10 |
| 400 | 0.12 | 0.1 40 | 0.2 5 | 0.2 9 | 0.1 3 | 0.1 55 | 0.2 0 | 0.1 25 | 0.2 2 | 0.2 5 | 0.11 0 | 0.1 35 | 0.1 75 | 0.11 0 | 0.1 60 | 0.1 95 |
| 500 | 0.093 | 0.1 20 | 0.2 5 | 0.2 8 | 0.1 05 | 0.1 55 | 0.1 85 | 0.1 00 | 0.2 2 | 0.2 4 | 0.0 90 | 0.1 35 | 0.1 60 | 0.0 88 | 0.1 60 | 0.1 80 |

Armoured Current-Carrying Capacities (Amp)

| Conductor crosssectional area | Reference Method 1 (clipped direct) | | Reference Method 11 (on a perforated horizontal cable trayor Reference Method 13 [free air]) | | In single-way ducts | | Laid direct in ground | |
|-------------------------------------|---|--|---|--|---|--|---|--|
| | one core cable single phase a.c. or d.c. | 2- core or 3- core cable 3- phase a.c. | one core cable single phase a.c. or d.c. | 2- core or 3- core cable 3- phase a.c. | one core cable single phase a.c. or d.c. | 2- core or 3- core cable 3- phase a.c. | one core cable single phase a.c. or d.c. | 2- core or 3- core cable 3- phase a.c. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| mm ² | A | A | A | A | A | A | A | A |
| 1.5 | 27 | 23 | 29 | 25 | - | 23 | - | 28 |
| 2.5 | 36 | 31 | 39 | 33 | - | 30 | - | 36 |
| 4 | 49 | 42 | 52 | 44 | - | 40 | - | 48 |
| 6 | 62 | 53 | 66 | 56 | - | 50 | - | 60 |
| 10 | 85 | 73 | 90 | 78 | - | 65 | - | 80 |
| 16 | 110 | 94 | 115 | 99 | 115 | 94 | 140 | 115 |
| 25 | 146 | 124 | 152 | 131 | 145 | 125 | 180 | 150 |
| 35 | 180 | 154 | 188 | 162 | 175 | 150 | 215 | 180 |
| 50 | 219 | 187 | 228 | 197 | 210 | 175 | 255 | 215 |
| 70 | 279 | 238 | 291 | 251 | 260 | 215 | 315 | 265 |
| 95 | 338 | 289 | 354 | 304 | 310 | 260 | 380 | 315 |
| 120 | 392 | 335 | 410 | 353 | 355 | 300 | 430 | 360 |
| 150 | 451 | 386 | 472 | 406 | 400 | 335 | 480 | 405 |
| 185 | 515 | 441 | 539 | 463 | 455 | 380 | 540 | 460 |
| 240 | 607 | 520 | 636 | 546 | 520 | 440 | 630 | 530 |
| 300 | 698 | 599 | 732 | 628 | 590 | 495 | 700 | 590 |
| 400 | 787 | 673 | 847 | 728 | 660 | 560 | 790 | 670 |

Voltage Drop (Per Amp Per Meter)

| Conductor cross-sectional area | 2-core cable d.c. | 2 cables, single-phase a.c. | | | 3 or 4 cables, 3-phase a.c. | | | 2 cables, single-phase a.c. | 3 or 4 cables, 3-phase a.c. |
|--------------------------------|-------------------|-----------------------------|-------|-------|-----------------------------|--------|-------|-----------------------------|-----------------------------|
| | | | | | | | | In ducts or in ground | In ducts or in ground |
| 1 | 2 | 3 | | | 4 | | | 5 | 6 |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | mV/A/m |
| 1.5 | 31.0 | 31.0 | | | 27.0 | | | 31.0 | 25.0 |
| 2.5 | 19.0 | 19.0 | | | 16.0 | | | 19.0 | 15.0 |
| 4 | 12.0 | 12.0 | | | 10.0 | | | 12.0 | 9.7 |
| 6 | 7.9 | 7.9 | | | 6.8 | | | 7.9 | 6.5 |
| 10 | 4.7 | 4.7 | | | 4.0 | | | 4.7 | 3.9 |
| 16 | 2.9 | 2.9 | | | 2.5 | | | 2.9 | 2.6 |
| | | r | x | z | r | x | z | | |
| 25 | 1.850 | 1.350 | 0.160 | 1.900 | 1.600 | 0.140 | 1.650 | 1.900 | 1.600 |
| 35 | 1.350 | 1.350 | 0.155 | 1.350 | 1.150 | 0.1350 | 1.150 | 1.350 | 1.200 |
| 50 | 0.980 | 0.990 | 0.155 | 1.000 | 0.860 | 0.135 | 0.870 | 1.000 | 0.870 |
| 70 | 0.670 | 0.670 | 0.150 | 0.690 | 0.590 | 0.130 | 0.600 | 0.690 | 0.610 |
| 95 | 0.490 | 0.500 | 0.150 | 0.520 | 0.430 | 0.130 | 0.450 | 0.520 | 0.450 |
| 120 | 0.390 | 0.4000 | 0.145 | 0.420 | 0.340 | 0.130 | 0.370 | 0.420 | 0.360 |
| 150 | 0.310 | 0.320 | 0.145 | 0.350 | 0.280 | 0.125 | 0.300 | 0.350 | 0.300 |
| 185 | 0.250 | 0.260 | 0.145 | 0.290 | 0.220 | 0.125 | 0.260 | 0.290 | 0.250 |
| 240 | 0.195 | 0.200 | 0.140 | 0.240 | 0.175 | 0.125 | 0.210 | 0.240 | 0.210 |
| 300 | 0.155 | 0.160 | 0.140 | 0.210 | 0.140 | 0.120 | 0.185 | 0.210 | 0.190 |
| 400 | 0.120 | 0.130 | 0.140 | 0.190 | 0.115 | 0.120 | 0.165 | 0.190 | 0.180 |