

Lapp Tannehill is your source for TE Connectivity (TE) medical tubing! TE has over 50 years of proven innovation advances in process technology. TE's family of medical grade tubing products are useful in meeting various application requirements found in medical devices and components.



Authorized Distributor



Innovative Solutions for the Medical Market:

- Thin-wall polyolefin with multiple shrink ratio options
- High temperature, flexible and semi-rigid fluoropolymers
- Dual-wall constructions
- Controlled longitudinal shrinkage
- Clear and color constructions
- Radiopaque
- USP Class VI Certified
- Application engineering and custom sizes available

ALTERA MT-LWA Flexible, Modified Polyolefin, Heat-Shrinkable Tubing

Recovery Temp: 121° Color: Clear

2:1 Expansion Ratio Dimensions (±)

| Lapp Tannehill PN# | Size | As Supplied | | Recovered | | | |
|--------------------|------|---------------------|--------------|---------------------|-------------|--------------------|-------------|
| | | Inside Diameter (D) | | Inside Diameter (d) | | Wall Thickness (W) | |
| | | in. | mm. | in. | mm. | in. | mm. |
| RAYMT-LWA-1/32-X | 1/32 | 0.040 ± 0.005 | 1.02 ± 0.13 | 0.013 ± 0.002 | 0.33 ± 0.05 | 0.010 ± 0.002 | 0.25 ± 0.05 |
| RAYMT-LWA-3/64-X | 3/64 | 0.055 ± 0.005 | 1.40 ± 0.13 | 0.020 ± 0.003 | 0.51 ± 0.08 | 0.012 ± 0.002 | 0.31 ± 0.05 |
| RAYMT-LWA-1/16-X | 1/16 | 0.072 ± 0.005 | 1.83 ± 0.13 | 0.027 ± 0.004 | 0.69 ± 0.10 | 0.017 ± 0.003 | 0.43 ± 0.08 |
| RAYMT-LWA-3/32-X | 3/32 | 0.107 ± 0.008 | 2.72 ± 0.20 | 0.042 ± 0.004 | 1.07 ± 0.10 | 0.020 ± 0.003 | 0.51 ± 0.08 |
| RAYMT-LWA-1/8-X | 1/8 | 0.140 ± 0.010 | 3.56 ± 0.25 | 0.057 ± 0.005 | 1.45 ± 0.13 | 0.020 ± 0.003 | 0.51 ± 0.08 |
| RAYMT-LWA-3/16-X | 3/16 | 0.205 ± 0.010 | 5.21 ± 0.25 | 0.086 ± 0.007 | 2.18 ± 0.18 | 0.020 ± 0.003 | 0.51 ± 0.08 |
| RAYMT-LWA-1/4-X | 1/4 | 0.275 ± 0.015 | 6.99 ± 0.38 | 0.117 ± 0.008 | 2.97 ± 0.20 | 0.025 ± 0.003 | 0.64 ± 0.08 |
| RAYMT-LWA-3/8-X | 3/8 | 0.415 ± 0.020 | 10.54 ± 0.51 | 0.171 ± 0.016 | 4.34 ± 0.41 | 0.025 ± 0.003 | 0.64 ± 0.08 |

3:1 Expansion Ratio Dimensions (±)

| Lapp Tannehill PN# | Size | As Supplied | | Recovered | | | |
|--------------------|------|---------------------|-------------|---------------------|-------------|--------------------|-------------|
| | | Inside Diameter (D) | | Inside Diameter (d) | | Wall Thickness (W) | |
| | | in. | mm. | in. | mm. | in. | mm. |
| RAYMT-LWA-047-X | .047 | 0.053 ± 0.006 | 1.35 ± 0.15 | 0.013 ± 0.002 | 0.33 ± 0.05 | 0.012 ± 0.002 | 0.31 ± 0.05 |

3:1 Expansion Ratio Dimensions (Min./Max)

| Lapp Tannehill PN# | Size | As Supplied | | Recovered | | | |
|--------------------|------|---------------------|------|---------------------|------|--------------------|-------------|
| | | Inside Diameter (D) | | Inside Diameter (d) | | Wall Thickness (W) | |
| | | Minimum | mm. | Maximum | mm. | in. | mm. |
| RAYMT-LWA-032-X | .032 | 0.032 | 0.81 | 0.011 | 0.28 | 0.010 ± 0.002 | 0.25 ± 0.05 |
| RAYMT-LWA-063-X | .063 | 0.063 | 1.60 | 0.021 | 0.53 | 0.016 ± 0.002 | 0.41 ± 0.05 |
| RAYMT-LWA-078-X | .078 | 0.078 | 1.98 | 0.025 | 0.64 | 0.016 ± 0.002 | 0.41 ± 0.05 |
| RAYMT-LWA-094-X | .094 | 0.094 | 2.39 | 0.031 | 0.79 | 0.020 ± 0.003 | 0.51 ± 0.08 |
| RAYMT-LWA-110-X | .110 | 0.110 | 2.79 | 0.034 | 0.86 | 0.020 ± 0.003 | 0.51 ± 0.08 |
| RAYMT-LWA-125-X | .125 | 0.125 | 3.18 | 0.042 | 1.07 | 0.020 ± 0.003 | 0.51 ± 0.08 |
| RAYMT-LWA-188-X | .188 | 0.188 | 4.78 | 0.063 | 1.60 | 0.020 ± 0.003 | 0.51 ± 0.08 |
| RAYMT-LWA-250-X | .250 | 0.250 | 6.35 | 0.083 | 2.11 | 0.025 ± 0.003 | 0.64 ± 0.08 |
| RAYMT-LWA-375-X | .375 | 0.375 | 9.53 | 0.125 | 3.18 | 0.025 ± 0.003 | 0.64 ± 0.08 |

ALTERA MT-FEP Fluorinated Ethylene Propylene Polymer, Heat-Shrinkable Tubing

Recovery Temp: 210° Color: Clear Shrink ratio: 1.3:1 or 1.6:1

| Lapp Tannehill PN# | Size | As Supplied | | Recovered | | | | Nominal | | | |
|--------------------|------|---------------------|------|---------------------|-----|--------------------|------|---------|------|-------|------|
| | | Inside Diameter (D) | | Inside Diameter (d) | | Wall Thickness (W) | | | | | |
| | | Minimum | mm. | Maximum | mm. | Minimum | mm. | | | | |
| RAYMT-FEP-1/32-X | 1/32 | 0.035 | 0.9 | 0.025 | 0.6 | 0.006 | 0.15 | 0.010 | 0.25 | 0.008 | 0.20 |
| RAYMT-FEP-3/64-X | 3/64 | 0.045 | 1.1 | 0.032 | 0.8 | 0.006 | 0.15 | 0.010 | 0.25 | 0.008 | 0.20 |
| RAYMT-FEP-1/16-X | 1/16 | 0.063 | 1.6 | 0.040 | 1.0 | 0.006 | 0.15 | 0.010 | 0.25 | 0.008 | 0.20 |
| RAYMT-FEP-3/32-X | 3/32 | 0.093 | 2.7 | 0.056 | 1.4 | 0.006 | 0.15 | 0.010 | 0.25 | 0.008 | 0.20 |
| RAYMT-FEP-1/8-X | 1/8 | 0.125 | 3.2 | 0.075 | 1.9 | 0.007 | 0.18 | 0.013 | 0.33 | 0.010 | 0.25 |
| RAYMT-FEP-3/16-X | 3/16 | 0.188 | 4.8 | 0.115 | 2.9 | 0.007 | 0.18 | 0.013 | 0.33 | 0.010 | 0.25 |
| RAYMT-FEP-1/4-X | 1/4 | 0.250 | 6.4 | 0.150 | 3.8 | 0.007 | 0.18 | 0.013 | 0.33 | 0.010 | 0.25 |
| RAYMT-FEP-3/8-X | 3/8 | 0.375 | 9.5 | 0.225 | 5.7 | 0.009 | 0.23 | 0.015 | 0.38 | 0.012 | 0.30 |
| RAYMT-FEP-1/2-X | 1/2 | 0.500 | 12.7 | 0.300 | 7.6 | 0.011 | 0.28 | 0.019 | 0.48 | 0.015 | 0.38 |

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ALTERA MT1000 Medical-Grade Semirigid, Fluoropolymer Tubing

Recovery Temp: 175° Color: (0) Black, (X) Translucent Nonstandard (9) White Shrink ratio: 2:1

Specifications/Approvals

| Series | Material | Master File Number | RAYCHEM tubing |
|---------|--------------|--------------------|----------------|
| MT1000 | USP Class VI | MAF-444 | MT1000 SCD |
| MT1000A | USP Class VI | MAF-798 | MT1000A SCD |

Product Dimensions

| Lapp Tannehill PN# | Size | Inside Diameter | | Recovered Wall Thickness* | |
|--------------------|-------|------------------------------|---------------------------------|-----------------------------|---------------|
| | | Minimum Expanded as Supplied | Maximum Recovered After Heating | As Supplied | After Heating |
| RAYMT1000-3/64-X | 3/64 | 1.17 [0.046] | 0.58 [0.023] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT1000-1/16-X | 1/16 | 1.6 [0.063] | 0.8 [0.031] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT1000-3/32-X | 3/32 | 2.4 [0.093] | 1.2 [0.046] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT1000-1/8-X | 1/8 | 3.2 [0.125] | 1.6 [0.062] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT1000-3/16-X | 3/16 | 4.7 [0.187] | 2.4 [0.093] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT1000-1/4-X | 1/4 | 6.4 [0.250] | 3.2 [0.125] | 0.33 ± 0.05 [0.013 ± 0.002] | |
| RAYMT1000-3/8-X | 3/8 | 9.5 [0.375] | 4.7 [0.187] | 0.33 ± 0.05 [0.013 ± 0.002] | |
| RAYMT1000-1/2-X | 1/2 | 12.7 [0.500] | 6.4 [0.250] | 0.33 ± 0.05 [0.013 ± 0.002] | |
| RAYMT1000-3/4-X | 3/4** | 19.1 [0.750] | 9.5 [0.375] | 0.43 ± 0.08 [0.017 ± 0.003] | |
| RAYMT1000-1-X | 1** | 25.4 [1.000] | 12.7 [0.500] | 0.48 ± 0.08 [0.019 ± 0.003] | |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

**Nonstandard size; available by special order only.

ALTERA MT2000 Medical-Grade Thin-Wall, Polyolefin Tubing

Recovery Temp: 140° Color: (0) Black, (X) Clear Shrink ratio: 2.5:1

Specifications/Approvals

| Series | Material | Master File Number | RAYCHEM tubing |
|---------|--------------|--------------------|----------------|
| MT2000 | USP Class VI | MAF-727 | MT2000 SCD |
| MT2000A | USP Class VI | MAF-799 | MT2000A SCD |

Product Dimensions

| Lapp Tannehill PN# | Size | Inside Diameter | | Wall Thickness | |
|--------------------|------|------------------------------|---------------------------------|-----------------------|-----------------------------|
| | | Minimum Expanded as Supplied | Maximum Recovered After Heating | As Supplied (Nominal) | Recovered* After Heating |
| RAYMT2000-1.0-X | 1.0 | 1.0 [0.040] | 0.45 [0.018] | 0.12 [0.005] | 0.25 ± 0.05 [0.010 ± 0.002] |
| RAYMT2000-2.0-X | 2.0 | 2.0 [0.080] | 0.80 [0.032] | 0.12 [0.005] | 0.25 ± 0.05 [0.010 ± 0.002] |
| RAYMT2000-3.0-X | 3.0 | 3.0 [0.120] | 1.20 [0.048] | 0.12 [0.005] | 0.25 ± 0.05 [0.010 ± 0.002] |
| RAYMT2000-6.0-X | 6.0 | 6.0 [0.240] | 2.40 [0.096] | 0.12 [0.005] | 0.25 ± 0.05 [0.010 ± 0.002] |
| RAYMT2000-10.0-X | 10.0 | 10.0 [0.400] | 4.00 [0.160] | 0.15 [0.006] | 0.36 ± 0.05 [0.014 ± 0.002] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

ALTERA MT3000 Medical-Grade Flexible, Fluoropolymer Tubing

Recovery Temp: 150° Color: (0) Black, (9) White Shrink ratio: 2:1

Specifications/Approvals

| Series | Material | Master File Number | RAYCHEM tubing |
|---------|--------------|--------------------|----------------|
| MT3000 | USP Class VI | MAF-472 | MT3000 SCD |
| MT3000A | USP Class VI | MAF-472 | MT3000A SCD |

Product Dimensions

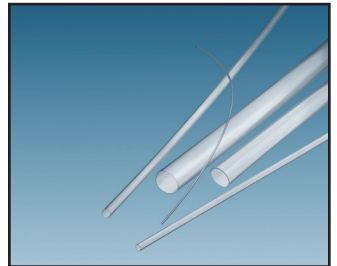
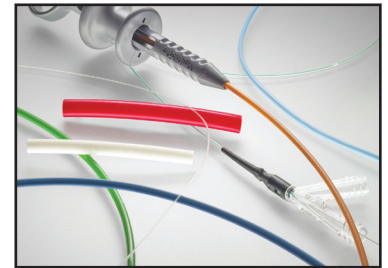
| Lapp Tannehill PN# | Size | Inside Diameter | | Recovered Wall Thickness* | |
|--------------------|-------|------------------------------|---------------------------------|-----------------------------|---------------|
| | | Minimum Expanded as Supplied | Maximum Recovered After Heating | As Supplied | After Heating |
| RAYMT3000-3/64-X | 3/64 | 1.17 [0.046] | 0.58 [0.023] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT3000-1/16-X | 1/16 | 1.6 [0.063] | 0.8 [0.031] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT3000-3/32-X | 3/32 | 2.4 [0.093] | 1.2 [0.046] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT3000-1/8-X | 1/8 | 3.2 [0.125] | 1.6 [0.062] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT3000-3/16-X | 3/16 | 4.7 [0.187] | 2.4 [0.093] | 0.25 ± 0.05 [0.010 ± 0.002] | |
| RAYMT3000-1/4-X | 1/4 | 6.4 [0.250] | 3.2 [0.125] | 0.30 ± 0.05 [0.012 ± 0.002] | |
| RAYMT3000-3/8-X | 3/8 | 9.5 [0.375] | 4.7 [0.187] | 0.30 ± 0.05 [0.012 ± 0.002] | |
| RAYMT3000-1/2-X | 1/2 | 12.7 [0.500] | 6.4 [0.250] | 0.30 ± 0.05 [0.012 ± 0.002] | |
| RAYMT3000-3/4-X | 3/4** | 19.1 [0.750] | 9.5 [0.375] | 0.43 ± 0.08 [0.017 ± 0.003] | |
| RAYMT3000-1-X | 1** | 25.4 [1.000] | 12.7 [0.500] | 0.48 ± 0.08 [0.019 ± 0.003] | |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

**Nonstandard size; available by special order only.

Applications

- Abrasion protection for laparoscopic instruments and in-vivo diagnostic probes (MT1000, MT3000)
- Protection and Insulation of electrosurgical and laparoscopic instruments (MT2000, MT5000, MT6000, MT-FEP)
- Protection and insulation of highly flexible joint
- Protection of delicate high value devices (MT2000)
- Catheter shafts (MT2000)
- Process Aid/Fusing Sleeves (MT-FEP, MT-LWA)
- Strain Relief (MT1000, MT3000, MT5000, MT5500)
- Identification and color coding of electrosurgical devices (MT5000)
- Process Aid for Reflow/Bonds (MT-LWA, MT-FEP)



ALTERA MT5000 Medical-Grade Flexible, Polyolefin Tubing

Recovery Temp: 110° Color: (0) Black, (X) Clear, (6) Blue Shrink ratio: 2:1

Specifications/Approvals

| Series | Material | Master File Number | RAYCHEM tubing |
|---------|--------------|--------------------|----------------|
| MT5000 | USP Class VI | MAF-469 | MT5000 SCD |
| MT5000A | USP Class VI | MAF-800 | MT5000A SCD |

Product Dimensions

| Lapp Tannehill PN# | Size | Inside Diameter | | Recovered Wall Thickness* | |
|--------------------|-------|------------------------------|---------------------------------|-----------------------------|---------------|
| | | Minimum Expanded as Supplied | Maximum Recovered After Heating | As Supplied | After Heating |
| RAYMT5000-3/64-X | 3/64 | 1.17 [0.046] | 0.58 [0.023] | 0.40 ± 0.08 [0.016 ± 0.003] | |
| RAYMT5000-1/16-X | 1/16 | 1.6 [0.063] | 0.8 [0.031] | 0.43 ± 0.08 [0.017 ± 0.003] | |
| RAYMT5000-3/32-X | 3/32 | 2.4 [0.093] | 1.2 [0.046] | 0.51 ± 0.08 [0.020 ± 0.003] | |
| RAYMT5000-1/8-X | 1/8 | 3.2 [0.125] | 1.6 [0.062] | 0.51 ± 0.08 [0.020 ± 0.003] | |
| RAYMT5000-3/16-X | 3/16 | 4.8 [0.187] | 2.4 [0.093] | 0.51 ± 0.08 [0.020 ± 0.003] | |
| RAYMT5000-1/4-X | 1/4 | 6.4 [0.250] | 3.2 [0.125] | 0.64 ± 0.08 [0.025 ± 0.003] | |
| RAYMT5000-3/8-X | 3/8 | 9.5 [0.375] | 4.8 [0.187] | 0.64 ± 0.08 [0.025 ± 0.003] | |
| RAYMT5000-1/2-X | 1/2 | 12.7 [0.500] | 6.4 [0.250] | 0.64 ± 0.08 [0.025 ± 0.003] | |
| RAYMT5000-3/4-X | 3/4** | 19.1 [0.750] | 9.5 [0.375] | 0.76 ± 0.08 [0.030 ± 0.003] | |
| RAYMT5000-1-X | 1** | 25.4 [1.000] | 12.7 [0.500] | 0.89 ± 0.12 [0.035 ± 0.005] | |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

**Nonstandard size; available by special order only.

ALTERA MT6000 Flexible, Polyolefin Tubing

Recovery Temp: 110° Color: (0) Black, (X) Clear Shrink ratio: 4:1

Specifications/Approvals

| Series | Material | RAYCHEM tubing |
|---------|--------------|----------------|
| MT6000 | USP Class VI | MT6000 SCD |
| MT6000A | USP Class VI | MT6000A SCD |

Product Dimensions

| Lapp Tannehill PN# | Size | As Supplied | | Recovered | |
|--------------------|------|---------------------|-----|---------------------|---------------------------|
| | | Inside Diameter (D) | | Inside Diameter (d) | |
| | | Minimum | mm. | Maximum | Nominal |
| RAYMT6000-1/16-X | 1/16 | .063 [1.60] | | .015 [0.38] | .016 ± .003 [0.40 ± .007] |
| RAYMT6000-3/32-X | 3/32 | .093 [2.36] | | .023 [0.58] | .016 ± .003 [0.40 ± .007] |
| RAYMT6000-1/8-X | 1/8 | .125 [3.18] | | .031 [0.79] | .0 |