

Technical Services: 888-437-3244, Engineering Services: 877-832-3206, Sales 800-543-7140

#### 05.40.00 (Cold-Formed Metal Framing)

# 1000T150-97 (50ksi, CP60)

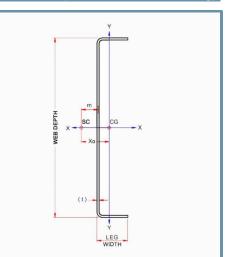
#### 1000 (10") structural track with T150 (1-1/2") leg - 97mils (12ga)

Coating: CP60 per AISI S240

## Geometric Properties

Color Code: Red

| Web depth: 10.356 in<br>Leg width: 1.50 inThickness: 97mils (12ga)<br>Design Thickness: 0.1017 in<br>Min. steel thickness: 0.0966 inYield strength, Fy: 50 ksi<br>"Fy with Cold-Work, Fya: 50.0 ksiGross Section Properties of Full Section-Work, Fya: 50.0 ksiCross sectional area (A)1.320 in²Member weight per foot of length4.49 lb/ftMoment of inertia (Ix)16.420 in⁴Section Modulus (Sx)3.171 in³Radius of gyration (Rx)3.527 inGross moment of inerita (Iy)0.172 in⁴Gross radius of gyration (Ry)0.361 inEffective Section Properties, StromyMoment of inertia for deflection (Ix)16.414 in⁴Section modulus (Sx)2.903 in³Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbSt. Venant torsional constant (J x 1000)4.550 in⁴Warping constant (Cw)3.557 in⁶Distance from shear center to neutral axis (Xo)0.495 inDistance between shear center and web centerline (m)3.320 inAdii of gyration (Ro)3.580 inOrisional flexural constant (Beta)0.981 |   |                             |                                   |  |
|--|---|-----------------------------|-----------------------------------|--|
| Cross sectional area (A)1.320 in²Member weight per foot of length4.49 lb/ftMoment of inertia (lx)16.420 in4Section Modulus (Sx)3.171 in3Radius of gyration (Rx)3.527 inGross moment of inerita (ly)0.172 in4Gross radius of gyration (Ry)0.361 inEffective Section Properties, Strong AxisEffective Area (Ae)0.721 in²Moment of inerita for deflection (lx)16.414 in4Section modulus (Sx)2.903 in3Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  |   | Design Thickness: 0.1017 in | *Fy with Cold-Work, Fya: 50.0 ksi |  |
| Member weight per foot of length4.49 lb/ftMoment of inertia (lx)16.420 in4Section Modulus (Sx)3.171 in3Radius of gyration (Rx)3.527 inGross moment of inerita (ly)0.172 in4Gross radius of gyration (Ry)0.361 inEffective Section Properties, Strong AxisEffective Area (Ae)0.721 in2Moment of inerita for deflection (lx)16.414 in4Section modulus (Sx)2.903 in3Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in   | Gross Section Properties of Full Section, Strong Axis |                             |                                   |  |
| Moment of inertia (lx)16.420 in4Section Modulus (Sx)3.171 in3Radius of gyration (Rx)3.527 inGross moment of inerita (ly)0.172 in4Gross radius of gyration (Ry)0.361 inEffective Section Properties, Strong AxisEffective Area (Ae)0.721 in2Moment of inerita for deflection (lx)16.414 in4Section modulus (Sx)2.903 in3Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in   | Cross sectional area (A)                              |                             | 1.320 in <sup>2</sup>             |  |
| Section Modulus (Sx)3.171in <sup>3</sup> Radius of gyration (Rx)3.527 inGross moment of inerita (ly)0.172 in <sup>4</sup> Gross radius of gyration (Ry)0.361 inEffective Section Properties, Strong AxisEffective Area (Ae)0.721 in <sup>2</sup> Moment of inerita for deflection (lx)16.414 in <sup>4</sup> Section modulus (Sx)2.903 in <sup>3</sup> Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in <sup>4</sup> Warping constant (Cw)3.557 in <sup>6</sup> Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in   | Member weight per foot of length                      |                             | 4.49 lb/ft                        |  |
| Radius of gyration (Rx)3.527 inGross moment of inerita (ly)0.172 in4Gross radius of gyration (Ry)0.361 inEffective Section Properties, Strong AxisEffective Area (Ae)0.721 in2Moment of inertia for deflection (lx)16.414 in4Section modulus (Sx)2.903 in3Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | Moment of inertia (Ix)                                |                             | 16.420 in <sup>4</sup>            |  |
| Gross moment of inerita (ly)0.172 in4Gross radius of gyration (Ry)0.361 inEffective Section Properties, Strong AxisEffective Area (Ae)0.721 in2Moment of inertia for deflection (lx)16.414 in4Section modulus (Sx)2.903 in3Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in   | Section Modulus (Sx)                                  |                             | 3.171in <sup>3</sup>              |  |
| Gross radius of gyration (Ry)0.361 inEffective Section Properties, Strong AxisEffective Area (Ae)0.721 in²Moment of inertia for deflection (Ix)16.414 in⁴Section modulus (Sx)2.903 in³Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in⁴Warping constant (Cw)3.557 in⁶Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | Radius of gyration (Rx)                               |                             | 3.527 in                          |  |
| Effective Section Properties, Strong AxisEffective Area (Ae)0.721 in²Moment of inertia for deflection (Ix)16.414 in4Section modulus (Sx)2.903 in³Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in   | Gross moment of inerita (ly)                          |                             | 0.172 in <sup>4</sup>             |  |
| Effective Area (Ae)0.721 in²Moment of inertia for deflection (Ix)16.414 in4Section modulus (Sx)2.903 in³Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | Gross radius of gyration (Ry)                         |                             | 0.361 in                          |  |
| Moment of inertia for deflection (lx)16.414 in4Section modulus (Sx)2.903 in3Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | Effective Section Properties, Strong Axis             |                             |                                   |  |
| Section modulus (Sx)2.903 in <sup>3</sup> Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in <sup>4</sup> Warping constant (Cw)3.557 in <sup>6</sup> Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | Effective Area (Ae)                                   |                             | 0.721 in <sup>2</sup>             |  |
| Allowable bending moment (Ma)86.90 in-kAllowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in <sup>4</sup> Warping constant (Cw)3.557 in <sup>6</sup> Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | Moment of inertia for deflection (Ix)                 |                             | 16.414 in <sup>4</sup>            |  |
| Allowable shear force in web9507 lbTorsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in <sup>4</sup> Warping constant (Cw)3.557 in <sup>6</sup> Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in   | Section modulus (Sx)                                  |                             | 2.903 in <sup>3</sup>             |  |
| Torsional PropertiesSt. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | Allowable bending moment (Ma)                         |                             | 86.90 in-k                        |  |
| St. Venant torsional constant (J x 1000)4.550 in4Warping constant (Cw)3.557 in6Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | Allowable shear force in web                          |                             | 9507 lb                           |  |
| Warping constant (Cw)3.557 in <sup>6</sup> Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in  | •   |                             |                                   |  |
| Distance from shear center to neutral axis (Xo)-0.495 inDistance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in   | St. Venant torsional constant (J x 1000)              |                             |                                   |  |
| Distance between shear center and web centerline (m)0.332 inRadii of gyration (Ro)3.580 in   | Warping constant (Cw)                                 |                             | 3.557 in <sup>6</sup>             |  |
| Radii of gyration (Ro) 3.580 in  | Distance from shear center to neutral axis (Xo)       |                             | -0.495 in                         |  |
|  | Distance between shear center and web centerline (m)  |                             | 0.332 in                          |  |
| Torsional flexural constant (Beta) 0.981   | Radii of gyration (Ro)                                |                             | 3.580 in                          |  |
|  | Torsional flexural constant (Beta)                    |                             | 0.981                             |  |



Load-bearing walls

Curtain walls

Tall interior walls

Floor & ceiling joists

Trusses



• Effective properties incorporate the strength increase from the cold work of forming.

### **Code Approvals & Performance Standards**

- AISI S100-16 (2020) w/S2-20 North American Specification for the Design of Cold-Formed Steel Structural Members
- AISI S240-20 North American Standard for Cold-Formed Steel Structural Framing
- (Compliant to ASTM C955, but IBC replaced with AISI S200 in IBC 2015, AISI S240 in IBC 2018)
- Section A3 Material Chemical & mechanical requirements (Referencing ASTM A1003/A1003M)
- Section A4 Corrosion Protection (Referencing ASTM A653/A653M)
- · Section A5 Products Thickness, shapes, tolerances, identification
- Section C Installation (Referencing ASTM C1007)
- IBC 2021 International Building Code
- ICC-ES ESR-1166P Structural Studs and Track
- ESR-1166P LABC and LARC Supplement
- ESR-1166P Catalog ClarkDietrich Structural Technical Design Guide (6/22/20)
- Intertek CCRR-0206 Structural Studs and Track
- SFIA Stud Code Compliance Certification Program
- SDS For ASTM A1003 Steel Framing Products For Interior Framing, Exterior Framing and Clips/Accessories

**Sustainability Credits** For more details and LEED letters contact Technical Services at 888-437-3244 or visit clarkdietrich.com/LEED.

- LEED v4.1 MR Credit: Environmental Product Declarations: EPD (1 point) - Sourcing of Raw Materials (up to 2 points) - Material Ingredients (1 point) - Construction and Demolition Waste Management (up to 2 points)
- LEED v4 MR Credit: Building Product Disclosure and Optimization: EPD (1 point) -Sourcing of Raw Materials (1 point) - Material Ingredients (1 point) - Construction and Demolition Waste Management (up to 2 points) -Innovation Credit (up to 2 points).