



- **Alloys Available and Applicable Standards**

UNS C12200 (DHP Copper) to ASME SB75 and ASME SB359

- **Product Formats**

Straight Lengths to 20 feet, + 1/8 inch maximum variation

Straight Lengths over 20 feet, + 5/32 inch maximum variation

Ends are supplied either brush deburred or chamfered

- **Packaging**

Packaging options include wooden boxes and shipping frames.

- **Tempers Available**

As fabricated temper

- **Testing**

All tubes are tested per the requirements of ASTM E243.

ID/OD Enhanced Surface for Improved Boiling Heat Transfer

Turbo-BIII is designed for light hydrocarbon boiling. The tube is configured in variations for both high pressure and low-pressure refrigerant applications. The integral helical fins on the outside of the tube are modified to enhance the initiation of nucleate boiling sites, thus improving the overall heat transfer coefficient. The inside heat transfer coefficient is improved because of increased

surface area and turbulence induced by integral helical ridges on the inside surface. The availability of plain ends and intermediate lands makes Turbo-BIII suitable for shell and tube evaporators.

The ID ridges have been modified to improve the overall heat transfer efficiency of Turbo-BIII over Turbo-BII.

Standard Sizes			Plain End Dimensions		Finned Section Dimensions				
Catalog Number	Outside Diameter inch (mm)	Nominal Wall inch (mm)	Outside Diameter inch (mm)	Wall inch (mm)	Fin Per Inch	Finished Fin OD inch (mm)	Min. Wall Under Fins inch (mm)	Root Diameter inch (mm)	
Turbo-BIII High Pressure - UNS 12000									
75-6050025	3/4 (19.05)	0.025 (0.635)	0.743 (18.87)	0.047 (1.18)	60	0.745 (18.92)	0.022 (0.559)	0.696 (17.68)	
75-6050028	3/4 (19.05)	0.028 (0.711)	0.743 (18.87)	0.050 (1.26)	60	0.744 (18.90)	0.025 (0.635)	0.696 (17.68)	
75-6050035	3/4 (19.05)	0.035 (0.889)	0.743 (18.87)	0.056 (1.42)	60	0.744 (18.90)	0.031 (0.787)	0.696 (17.68)	
75-6078025	1 (25.40)	0.025 (0.635)	0.995 (25.27)	0.050 (1.26)	60	0.986 (25.04)	0.022 (0.559)	0.937 (23.80)	
Turbo-BIII Low Pressure - UNS 12000									
75-6156025	3/4 (19.05)	0.025 (0.635)	0.743 (18.87)	0.049 (1.23)	62	0.744 (18.90)	0.022 (0.559)	0.697 (17.70)	
75-6150028	3/4 (19.05)	0.028 (0.711)	0.743 (18.87)	0.050 (1.27)	62	0.741 (18.82)	0.025 (0.635)	0.698 (17.73)	

WOLVERINE TUBE **TURBO-BIII**[®]

Standard Sizes		Inside Dimensions		Areas			
Catalog Number	Weight Per Unit Length lb/ft (kg/m)	Nominal Inside Diameter inch (mm)	Nominal Ridge Height inch (mm)	Nominal Inside Surface Area ft ² /ft (m ² /m)	Actual Inside Surface Area ft ² /ft (m ² /m)	Nominal Outside Surface Area ft ² /ft (m ² /m)	Actual Inside Cross Sect. Area in ² (mm ²)
Turbo-BIII High Pressure - UNS 12200							
75-6050025	0.371 (0.552)	0.645 (16.38)	0.015 (0.381)	0.169 (0.052)	0.262 (0.080)	0.192 (0.059)	0.315 (203.2)
75-6050028	0.422 (0.658)	0.639 (16.23)	0.015 (0.381)	0.167 (0.051)	0.260 (0.079)	0.192 (0.059)	0.309 (199.4)
75-6050035	0.448 (0.667)	0.625 (15.88)	0.013 (0.330)	0.164 (0.050)	0.239 (0.073)	0.192 (0.059)	0.297 (191.6)
75-6078025	0.505 (0.752)	0.887 (22.53)	0.017 (0.432)	0.232 (0.071)	0.374 (0.114)	0.260 (0.079)	0.374 (241.3)
Turbo-BIII Low Pressure - UNS 12000							
75-6150028	0.391 (0.581)	0.639 (16.23)	0.015 (0.381)	0.167 (0.051)	0.260 (0.079)	0.192 (0.059)	0.309 (199.4)
75-6156025	N/A	0.647 (16.43)	0.015 (0.381)	0.169 (0.052)	0.256 (0.078)	0.192 (0.059)	0.318 (205.2)

Engineering Data			
Catalog Number	Sieder and Tate ² Constant STC _i	Constants used in Calculating Darcy Friction Factor ¹	
		C	D
Turbo-BIII High Pressure - UNS 12200			
75-6050025	0.073	0.686	0.250
75-6050028	0.073	0.686	0.250
75-6050035	0.066	0.680	0.255
75-6078025	0.076	0.644	0.240
Turbo-BIII Low Pressure - UNS 12000			
75-6150028	0.073	0.759	0.254
75-6156025	0.073	0.686	0.250

1. Constants applicable to Reynolds numbers greater than 20,000. [$f_{\text{Darcy}} = C(\text{Re})^{-D}$]
2. To calculate inside heat transfer coefficient: $h_i = (k/D_{i \text{ nom.}})(\text{STC}_i)\text{Re}^{0.8}\text{Pr}^{1/3}[\mu/\mu_{\text{wall}}]^{0.14}$

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Engineered products for heat transfer
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