WOLVERINE TUBE, INC.
Engineering Thermal Innovation

TURBO-EHP®

ID/OD Enhanced Surface for Improved Boiling Heat Transfer

Turbo-EHP is designed for boiling of high pressure refrigerants. The integral helical fins on the outside of the tube are modified to enhance the initiation of nucleate boiling sites, thus improving the over all heat transfer coefficient. The inside heat transfer coefficient is improved over smooth bore products because of increased surface area and turbulation induced by integral helical ridges on the inside surface. The availability of plain ends and intermediate lands makes Turbo-EHP suitable for shell and tube evaporators.

The external configuration and the ID ridges have been modified in such a way to match the Turbo-BIII HP performance.

External Standards

This product is produced in alloy C12200 to meet the mechanical, chemical, and testing requirements of ASTM B75/B359 and in alloy C70600 to meet the mechanical, chemical, and testing requirements of ASTM B466/B359. For applications to the ASME pressure vessel code, the product will be produced to meet the requirements of ASME SB75/SB359 for alloy C12200 and to SB466/SB359 for alloy C70600. Other applicable standards - DIN 1787, DIN 17671, DIN 17664, and ADW 6/2 WD TUV 420/5.

Plain Sections

Plain end and land of 1" (25.4 mm) and over are standard. For plain end and land lengths down to 5/8" (15.9 mm), contact the Wolverine Marketing Department. Spacing between lands of 18" (457.2 mm) and over is supplied as standard.

Lengths

Overall lengths, with power brush deburred ends, are supplied from 4' (1.219 m) to 60' (18.288 m) as standard. Overall lengths, with chamfered ends, can be supplied from 3' (0.914 m) to 28' (8.534 m) as standard lengths.

Temper

Turbo-EHP is supplied as standards, in the "as finned" condition with plain ends and lands in the annealed condition. Material can be supplied in the annealed condition the entire length by special request.

Contact us at (256) 353-1310 or mkt@wlv.com

TURBO-EHP®

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)	Finished Fin OD inch (mm)	Min. Wall Under Fins inch (mm)	Root Diameter inch (mm)
UNS 12200							
100-4250025	3/4 (19.05)	0.025 (0.635)	0.743 (18.87)	0.044 (1.12)	0.744 (18.90)	0.022 (0.559)	0.701 (17.80)
100-4250028	3/4 (19.05)	0.028 (0.711)	0.743 (18.87)	0.047 (1.19)	0.743 (18.87)	0.025 (0.635)	0.702 (17.83)
100-4250035	3/4 (19.05)	0.035 (0.889)	0.743 (18.87)	0.053 (1.35)	0.744 (18.90)	0.031 (0.787)	0.697 (17.70)
100-4259028	3/4 (19.05)	0.028 (0.711)	0.743 (18.87)	0.044 (1.12)	0.741 (18.82)	0.025 (0.635)	0.702 (17.83)
100-4259035	3/4 (19.05)	0.035 (0.889)	0.743 (18.87)	0.052 (1.32)	0.745 (18.92)	0.031 (0.787)	0.700 (17.78)
100-4270025	1 (25.40)	0.025 (0.635)	0.995 (25.27)	0.045 (1.43)	0.996 (25.30)	0.022 (0.559)	0.951 (24.16)
100-4270028	1 (25.40)	0.028 (0.711)	0.995 (25.27)	0.049 (1.24)	0.994 (25.25)	0.025 (0.635)	0.948 (24.08)
100-4270035	1 (25.40)	0.035 (0.889)	0.995 (25.27)	0.055 (1.40)	0.993 (25.22)	0.031 (0.787)	0.947 (24.05)
UNS 70600							
100-4250025	3/4 (19.05)	0.025 (0.635)	0.743 (18.87)	0.045 (1.43)	0.744 (18.90)	0.022 (0.559)	0.702 (17.83)
100-4250028	3/4 (19.05)	0.028 (0.711)	0.743 (18.87)	0.048 (1.22)	0.743 (18.87)	0.025 (0.635)	0.699 (17.75)
100-4250035	3/4 (19.05)	0.035 (0.889)	0.743 (18.87)	0.054 (1.37)	0.744 (18.90)	0.031 (0.787)	0.699 (17.75)
100-4270028	1 (25.40)	0.028 (0.711)	0.995 (25.27)	0.049 (1.24)	0.994 (25.25)	0.025 (0.635)	0.950 (24.13)
100-4270035	1 (25.40)	0.035 (0.889)	0.995 (25.27)	0.055 (1.40)	0.990 (25.15)	0.031 (0.787)	0.946 (24.03)

Contact us at (256) 353-1310 or mkt@wlv.com

TURBO-EHP®

Standard Sizes			Inside Dimensions		Areas			
Catalog Number	Weight Per Unit Length lb/ft (kg/m)	Fins Per Inch	Nominal Inside Diameter inch (mm)	Nominal Ridge Height inch (mm)	Nominal Inside Surface Area ft²/ft (m²/m)	Actual Inside Surface Area ft²/ft (m²/m)	Nominal Outside Surface Area ft²/ft (m²/m)	Actual Outside Surface Area ft²/ft (m²/m)
UNS 12200								
100-4250025	0.348 (.518)	42	0.651 (16.54)	0.016 (0.406)	0.170 (0.052)	0.262 (0.080)	0.192 (0.059)	0.322 (207.7)
100-4250028	0.371 (.552)	42	0.645 (16.38)	0.014 (0.356)	0.169 (0.052)	0.251 (0.077)	0.192 (0.059)	0.322 (207.7)
100-4250035	0.419 (.623)	42	0.627 (15.92)	0.012 (0.305)	0.164 (0.050)	0.234 (0.071)	0.192 (0.059)	0.299 (192.9)
100-4259028	0.336 (.500)	42	0.646 (16.41)	N/A	0.169 (0.052)	0.169 (0.052)	0.192 (0.059)	0.328 (211.6)
100-4259035	0.391 (.582)	42	0.630 (16.00)	N/A	0.165 (0.050)	0.165 (0.050)	0.192 (0.059)	0.312 (201.3)
100-4270025	0.472 (.703)	42	0.901 (22.88)	0.016 (0.406)	0.236 (0.072)	0.366 (0.112)	0.260 (0.079)	0.624 (402.6)
100-4270028	0.512 (.762)	42	0.892 (22.66)	0.016 (0.406)	0.234 (0.071)	0.364 (0.111)	0.260 (0.079)	0.611 (394.2)
100-4270035	0.576 (.857)	42	0.877 (22.28)	0.015 (0.381)	0.230 (0.070)	0.352 (0.107)	0.260 (0.079)	0.591 (381.3)
UNS 70600								
100-4250025	0.340 (.518)	42	0.652 (16.56)	0.014 (0.356)	0.171 (0.052)	0.253 (0.077)	0.192 (0.059)	0.324 (209.0)
100-4250025	0.371 (.552)	42	0.643 (16.33)	0.013 (0.330)	0.168 (0.051)	0.244 (0.074)	0.192 (0.059)	0.315 (203.2)
100-4250035	0.419 (.623)	42	0.629 (15.98)	0.010 (0.254)	0.165 (0.050)	0.223 (0.068)	0.192 (0.059)	0.302 (194.8)
100-4270028	0.512 (.762)	42	0.894 (22.71)	0.014 (0.356)	0.234 (0.071)	0.348 (0.106)	0.260 (0.079)	0.615 (396.8)
100-4270035	0.576 (.857)	42	0.876 (22.25)	0.012 (0.305)	0.229 (0.070)	0.327 (0.100)	0.260 (0.079)	0.591 (381.3)

Contact us at (256) 353-1310 or mkt@wlv.com

TURBO-EHP®

Engineering Data

Catalog Number	Sieder and Tate[2] Constant STC^i	Constants used in Calculating Darcy Friction Factor[1] C	D
UNS 12200			
100-4250025	0.073	0.855	0.264
100-4250028	0.073	0.969	0.277
100-4250035	0.066	0.680	0.255
100-4259028	N/A	N/A	N/A
100-4259035	N/A	N/A	N/A
100-4270025	0.070	0.578	0.232
100-4270028	N/A	N/A	N/A
100-4270035	N/A	N/A	N/A
UNS 70600			
100-4250025	0.063	0.884	0.267
100-4250028	0.060	0.658	0.247
100-4250035	0.056	0.672	0.254
100-4270028	N/A	N/A	N/A
100-4270035	N/A	N/A	N/A

1. Constants applicable to Reynolds numbers greater than 20,000. [$f_{Darcy} = C(Re)^{-D}$]

2. To calculate inside heat transfer coefficient: $hi = (k/D_{i\ nom.})(STC_i)Re^{0.8}Pr^{1/3}[\mu/\mu_{wall}]^{0.14}$

Contact us at (256) 353-1310 or mkt@wlv.com