

## UNITHERM™ 2202/2204 LIGHT STEAM TRACE TUBING

### Principal of Operation

Unitherm 2202/2204 pre-insulated steam traced tubing consists of single or multiple process lines; single insulated tracer line; hydrophobic, inorganic, fibrous glass thermal insulation; and a black 105°C PVC jacket. It is designed for light tracing of process, sampling and impulse lines to help prevent freezing and protect the process fluids against high temperature degradation. Recommended for use where heavy tracing (2201/2203) will cause high temperature degradation or boil-off of the process fluids. This highly efficient, compact product is designed to limit the jacket to a nominal surface temperature of 140°F (60°C) or lower at 80°F (26°C) ambient conditions with tracer temperatures at 400°F (204°C) 232.6 PSIG saturated steam.

### Features

- Pre-insulated & prefabricated for fast, easy installation
- Light, durable and easy to handle
- Maintenance free
- Consistent and predictable thermal characteristics
- Personnel protection

### Applications

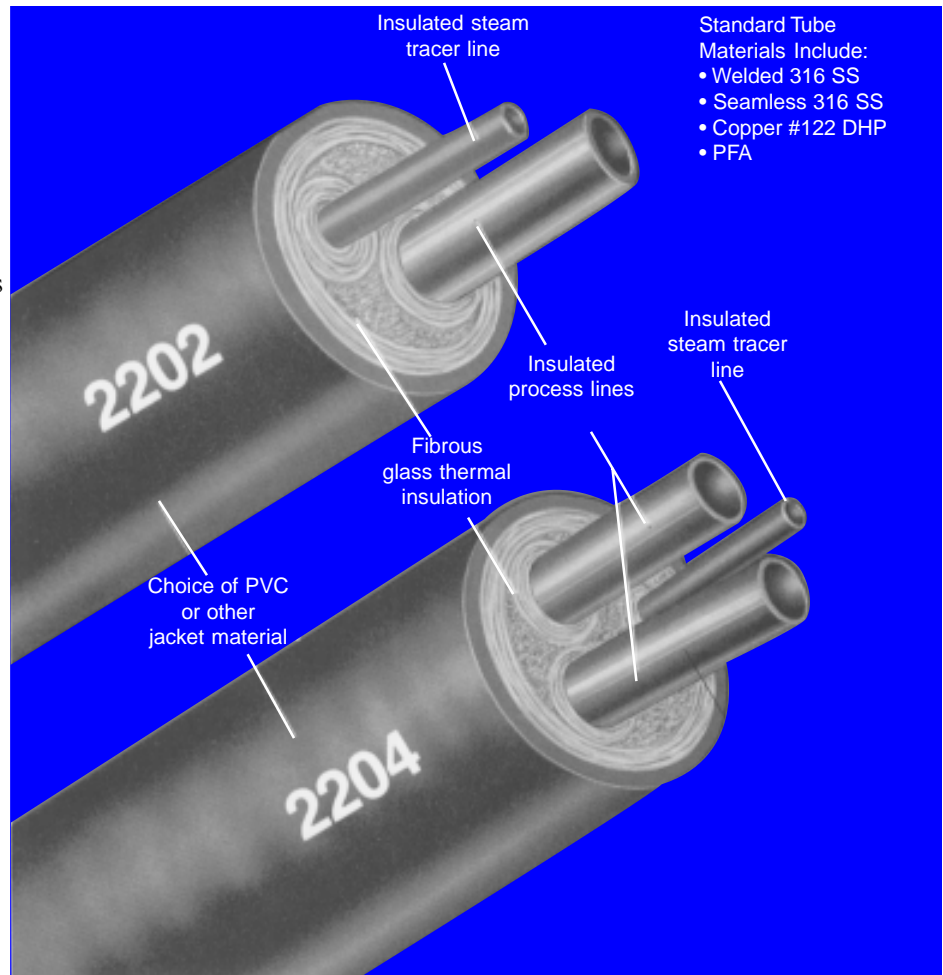
- Analyzer and instrument lines
- Small diameter process lines
- Impulse lines-D / P cells

### How To Specify

#### Example: 2202-20A21

Unitherm steam trace tubing (1) 1/4" O.D. x .035" wall 316 welded S/S insulated process tube; (1) 1/4" O.D. x .030" wall #122 copper tracer line; hydrophobic inorganic fibrous glass thermal insulation; 105°C black PVC jacket; MTR\* = 400°F

\*Maximum Temperature Rating is the design condition for which this product is manufactured. Temperatures in excess of this rating may result in deterioration of the components or changes in the operational characteristics.



How to Order: 2202 

X	X	A	X	X
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 Single Process Line

How to Order: 2204 

X	X	X	X	X
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 Multiple Process Lines

Process Tube O.D.	Process Tube Material	Number of Process Tubes	Tracer Line O.D.	Tracer Line Material
2 = 1/4"	0 = 316 S/S WLD	A = 1	2 = 1/4"	0 = 316 S/S WLD
3 = 3/8"	1 = #122 Copper	B = 2	3 = 3/8"	1 = #122 Copper
4 = 1/2"	4 = PFA	C = 3	4 = 1/2"	7 = 316 S/S Seamless
	7 = 316 S/S Seamless			Z = Special Materials per Customer Specifications
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Lists above show most common product configurations. Alternate tube sizes, wall thickness and materials as well as alternate jacket materials are available upon request. See next page for expanded list of product offering.

# Technical Information

## 2202/2204

### LIGHT STEAM

### TRACED TUBING

#### Performance Specifications

Nominal Jacket Surface Temperature with 400°F (204°C) tube and 80°F (26°C) ambient..... 140°F (60°C)

Nominal Heat Loss at 400°F (204°C) inside tube and 80°F (26°C) ambient.....

Process Tube O.D.	Tracer Tube O.D.	BTU/HR/FT
1/4"	1/4"	40
3/8"	1/4"	40
3/8"	3/8"	40
1/2"	1/4"	40
1/2"	3/8"	40
(2) 3/8"	3/8"	40
(2) 1/2"	3/8"	40

#### Product Specifications

Jacket ..... 105°C Black PVC  
 Insulation ..... Hydrophobic Inorganic Fibrous Glass Chloride Content less than 30 parts per million  
 Product Rating ..... 400°F (204°C)

Process Tube O.D.	Tracer Tube O.D.	Bundle O.D.	Nominal Weight (lb/ft)	Min. Bending Radius
1/4"	1/4"	1.4"	.6	10"
3/8"	1/4"	1.5"	.6	12"
3/8"	3/8"	1.6"	.7	12"
1/2"	1/4"	1.7"	.7	14"
1/2"	3/8"	1.8"	.8	14"
(2) 3/8"	3/8"	1.8"	.9	16"
(2) 1/2"	3/8"	1.9"	1.0	18"

#### Installation Recommendations

Maximum Support Centers ..... Vertical — 15 Feet  
 Horizontal — 6 Feet  
 Minimum Recommended Slope for Condensate Run-Off ..... 3/4" Per Ft.  
 Minimum Installation Temperature for PVC Jacket ..... +15°F (-9.4°C)

Alternate flame retardant jacket materials available include:

- Low Temperature Flame Retardant Polyvinyl Chloride
- Flame Retardant Polyethylene
- Flame Retardant Thermoplastic Elastomer

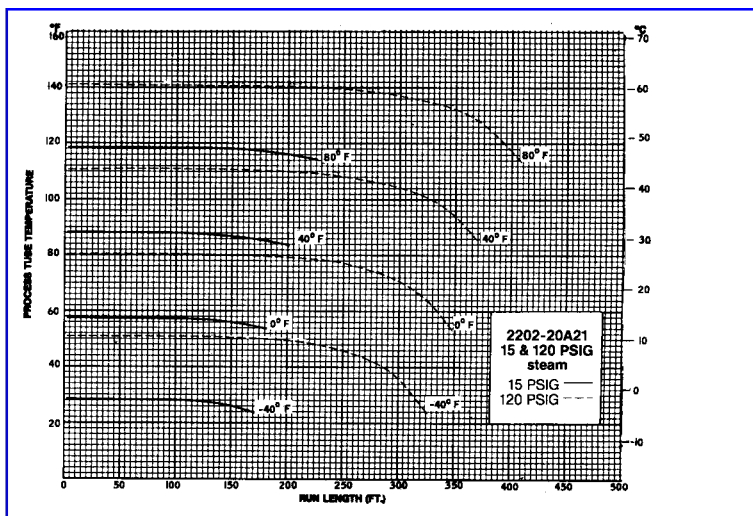
#### Tubing Specifications

Tube O.D.	Standard Wall Thickness***	Material†	ASTM	Working Pressure @400F	Maximum Coil Lengths
1/4"	.030"	#122 Copper	B-68 B-75	600 psi	1000'
3/8"	.032"	#122 Copper	B-68 B-75	450 psi	1000'
1/2"	.035"	#122 Copper	B-68 B-75	360 psi	1000'
1/4"	.035"	316-S/S WLD	A-269	5170 psi**	1000**
3/8"	.035"	316-S/S WLD	A-269	3310 psi**	1000**
1/2"	.035"	316-S/S WLD	A-269	2430 psi**	1000**

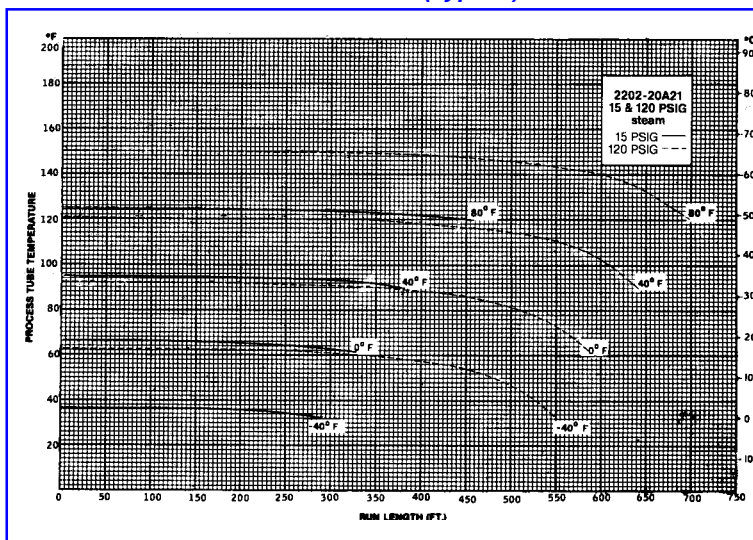
Metric tubing available 6, 8, and 10 mm O.D. x 1 mm WT Standard. \*\*\*Heavier wall thickness. available on request  
 †Other tube materials available \* Longer coil lengths available on request.  
 \*\*Values given are for welded. Seamless is slightly higher.

#### Process Tube Profile: 2202 Product (Typical)

(For other tube sizes, ambients and steam pressures, refer to Engineering Design Guide for Steam Traced Products.) Pages 6 and 7



#### Process Tube Profile: 2204 Product (Typical)



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