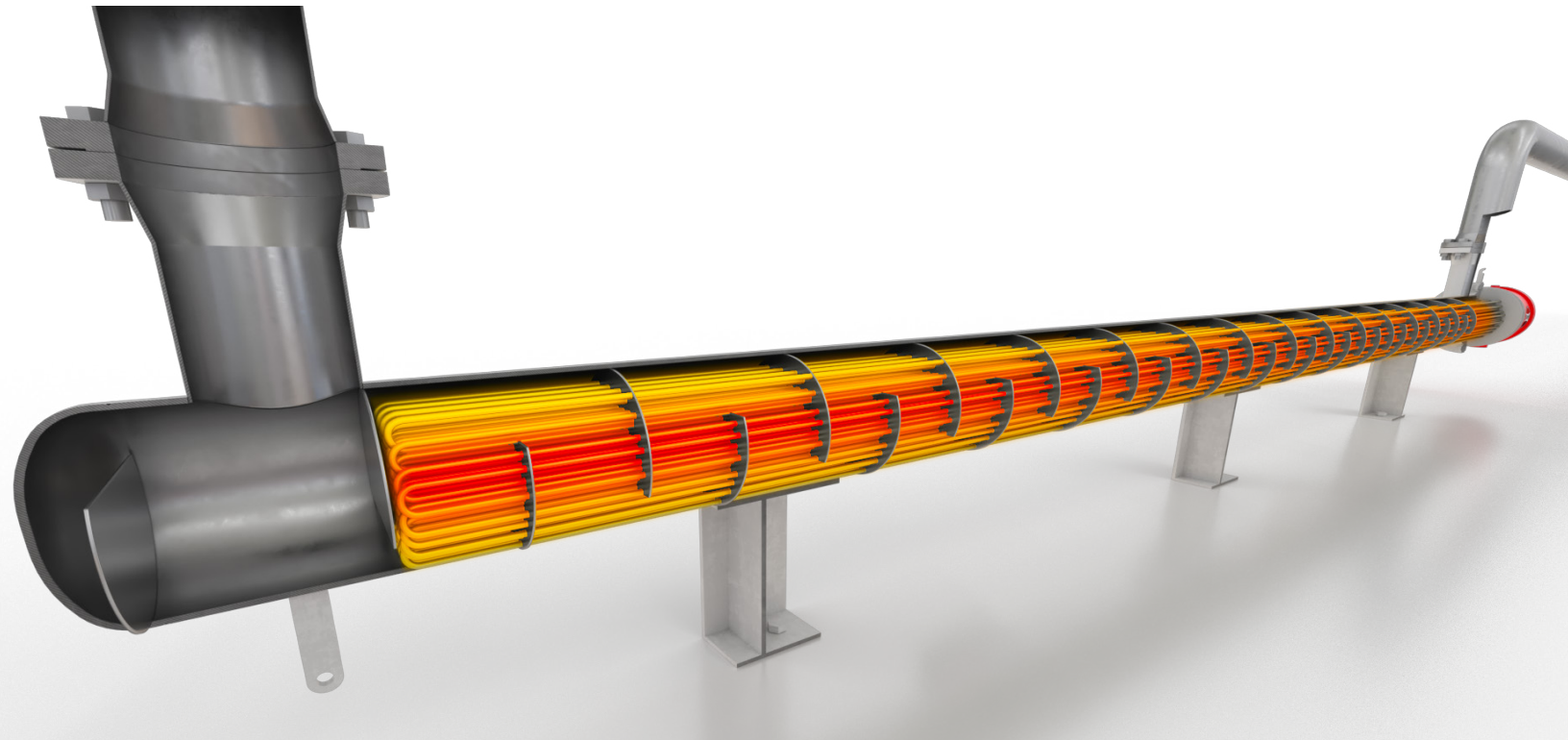




QUANTUM SEGMENTAL BAFFLE HEATER WITH DUOFLUX TECHNOLOGY



The Thermon Quantum Segmental Baffle Heater with DuoFlux technology is the next advancement in Thermon's flange heater lineup. Thermon's approach to segmental baffle design accounts for flow variation and applied heat flux based on the specific fluid and flow characteristics. Using advanced design software such as HTRI combined with CFD analysis and empirical test data, Thermon has created tools for highly optimized heater designs tailored to each specific application.

ADAPTABILITY & FLEXIBILITY

- **Optimized Baffle Arrangements:** Tailored based on flow rates, fluid properties, maximum allowable pressure drop, and desired inlet and outlet temperatures
- **Design Customization:** Allows for flexible heater and enclosure designs suitable for both new installations and retrofits
- **Terminal Box Designs:** Available in stilted or non-stilted configurations to manage internal temperatures
- **Temperature Sensors:** Factory-installed sensors for integration with temperature controllers
- **Standard Configurations:** Available for competitive industry lead times

BENEFITS OF SEGMENTAL BAFFLE WITH DUOFLUX TECHNOLOGY

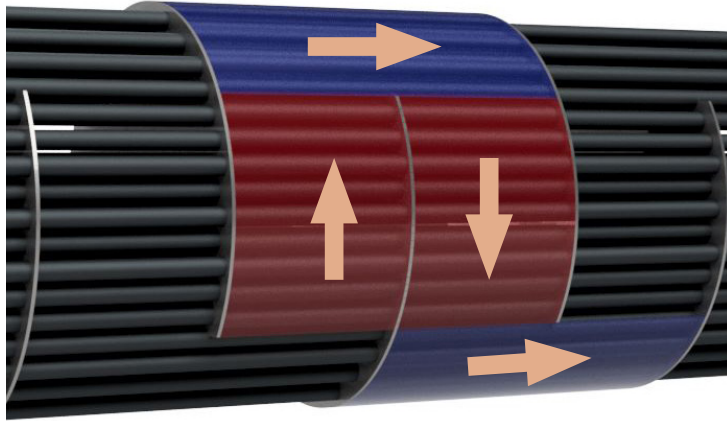
- **Flexible Design:** Optimizes heat transfer and minimizes pressure drop
- **Predictable Thermal Management:**
 - » High heat flux capabilities
 - » Mitigation of hot spots, leading to extended service life and reduced maintenance downtime
 - » Accurate sheath temperature prediction
- **Simulation Models:** Heater design and performance simulated using HTRI software, validated through empirical test data
- **Increased Heat Capacity:** Higher heat capacity per unit length of the vessel
- **Reduced Vessel Size:** Potential to reduce both the diameter and length of the heater
- **Cost Efficiency:** Lower overall cost and reduced footprint
- **Heat Loss Minimization:** Less heat loss due to a reduced vessel surface area
- **Versatility:** Provides a bridge alternative between Quantum NTIW and non-baffled designs, ideal for applications with pressure drop limitations that necessitate wider baffle spacing



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DESCRIPTION OF QUANTUM DUOFLUX TECHNOLOGY

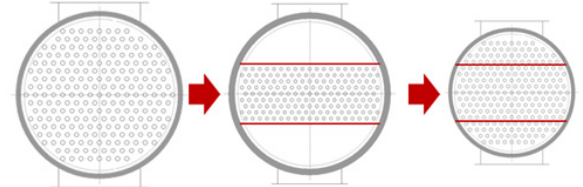
In the latest advancement in Thermon's heating products, Thermon Quantum DuoFlux applies heat flux to specifically match the local heat transfer coefficients and flow characteristics. The benefit is a reduction of temperature variation within the bundle, smaller more compact designs, and reliable operation.



This diagram distinguishes areas with different flow characteristics.

CASE ANALYSIS - DUOFLUX TRUFLOW HEATER

The following case analysis shows the benefits of a DuoFlux TruFlow heater over a non-baffled design, or NTIW TruFlow design. This provides the opportunity for a smaller, lower cost heater without compromised performance.



	Non-Baffled Heater	NTIW TruFlow	DuoFlux TruFlow
Shell Diameter	24"	24"	20"
# of Elements	244	148	180

CERTIFICATE AND COMPLIANCE

- Certified to UL, CSA, IECEx, and ATEX standards
- Suitable for both non-hazardous and hazardous environments, including all gas groups including IIC
- Operable in ambient temperatures from -60°C to +80°C
- Up to 4MW, 690V, 3-phase, 50 or 60Hz

IMMERSION HEATERS - UL, CSA, IECEx OR ATEX

Heater Connection Type	Flanged
Heater Type	Tubular
Mounting Orientation	Horizontal or Vertical
Ambient Temperature Range	From as low as -60 °C and up to +80 °C
Voltage	Up to 690 VAC
Frequency	50 & 60 Hz
Heater Power	Up to 4000 kW
Heating System Power	Up to 10MW *
Design Pressure	Up to 3000 psig (200 atm) **
Design Temperature	Up to 1200 °F (650 °C)
Heat Flux Density	Up to 120 w/in ² (18.6 w/cm ²)
Mechanical Design Code	ASME Code Section VIII, Div 1, Div 2 or PED
Electrical Design Code	UL, CSA, IECEx or ATEX
Heater Diameter	Up to 50 inches (1400 mm) Diameter
Element Materials	Carbon Steel, 304 SS, 316 SS, 321 SS, Incoloy 800, Inconel 600, Others
Electrical Ratings	Voltages up to 690 Vac, 1 or 3 PH., Wattages Up To 4,000KW, 50 or 60Hz
Certifications and Approvals	Ordinary Locations
	Wet & Outdoor Locations
	Hazardous Locations - Class I, Div.1 Groups B, C, D
	Explosive Atmospheres - IECEx Ex db IIC T1...T6 Gb
	ATEX II 2 G Ex db IIC T1...T6 Gb
Explosive Atmospheres - IECEx Ex eb IIC T1...T6 Gb	ATEX II 2 G Ex eb IIC T1...T6 Gb

*Please contact your local Thermon Representative for higher power applications

**Please contact your local Thermon Representative for high pressure applications

The Thermon Quantum DuoFlux Heater™ design offers unparalleled adaptability, efficiency, and reliability, providing customized heating solutions across a wide range of industrial applications.