



# Design Report

## Shell and Tube type heat exchanger design by improved Delaware method with MATLAB program

Shell outside Diameter = 336 mm

Tube inside diameter = 19 mm

Tube thermal conductivity = 111 W/ m<sup>2</sup> k

Tube inlet temp = 32.2 C

Tube outlet Temp = 37.4C

Shell inlet temp = 65.6 C

Shell outlet temp = 63 C

No of Baffles = 12

Central Baffle Distance = 279 mm

Heat Transfer Rate = 304328.7888 W

Overall Heat transfer Coefficient = 462.7466 W/ m<sup>2</sup> k

Pressura Drop across shell side = 91.9491 KPa

No of Tubes = 102

No of Passes =

Tube Layout Characteristics angle = 90

Tube side heat transfer coefficient = 7841.3514 W/ m<sup>2</sup> k

Shell side heat transfer coefficient = 547.1999 W/ m<sup>2</sup> k

Effectiveness = 0.11987

# STHE Design Software Report