# Release Notes: Plate-Fin Module

INSTED Ver. 9.1



TTC TECHNOLOGIES, INC.

January 17, 2018

## **Release Features**

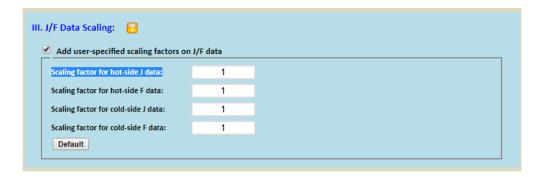
#### **INSTED Ver. 9.1**

The latest version of INSTED (Ver. 9.1) includes the following bug fixes and enhancements to INSTED 9.0.

### Enhancements to Plate-Fin Solver

- I. In the INSTED/Plate-Fin Rating Module, the following optional inputs have been added in "Set Calculation Method" tab to allow you to add user-specified scaling factors on J/F data:
  - Scaling factor for hot-side J data
  - Scaling factor for hot-side F data
  - Scaling factor for cold-side J data
  - Scaling factor for cold-side F data

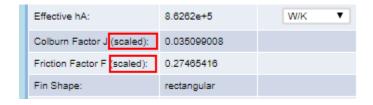
The user interface for these input data is is shown below.



#### Note that

- (1) The specified scaling factors are applied to the J/F data calculated by the selected J/F correlations or the J/F data that has been entered by the user.
- (2) A factor of unity implies no scaling
- (3) J/F data scaling factors are currently available only for single-phase calculations
- (4) When the Default button is clicked in the dialog box above, all scaling factors are set to 1.0
- (5) By default, the checkbox for "Add user-specified scaling factors on J/F data" is unchecked to disable this functionality

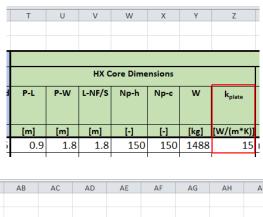
When a scaling factor is specified, an additional text "(scaled)" is added to the J and F field in the display of the results.

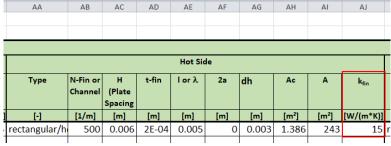


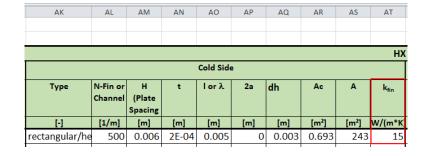
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### Enhancement to INSTED UI

II. The thermal conductivity of the plates and fins has been added to the Excel file of the Rating & Multiple-Rating calculating results.



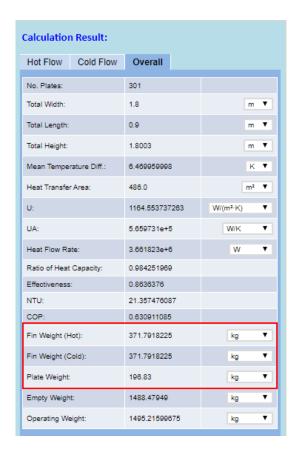




- III. In the Rating calculation result table, the following new entries have been added:
  - > Fin Weight (Hot)
  - > Fin Weight (Cold)
  - Plate Weight

The user interface is shown below:

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- IV. For all power or heat transfer rate input and output fields, additional units have been added as shown below:
  - ➤ Btu/s
  - ➢ Btu/min



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# Bug Fixes in INSTED Plate-Fin

V. In INSTED 9.0, if custom J/F data is used for both the hot and cold streams of the plate-fin heat exchanger, the cold side custom J/F data did not load correctly, causing a run-time exception error when the solver tried to interpolate the cold-side J/F data. This bug has been fixed in INSTED 9.1. The error alluded to here was manifested in the optimization task of the INSTED/Plate-Fin module.

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