

USER MANUAL FOR COIL SOFTWARE

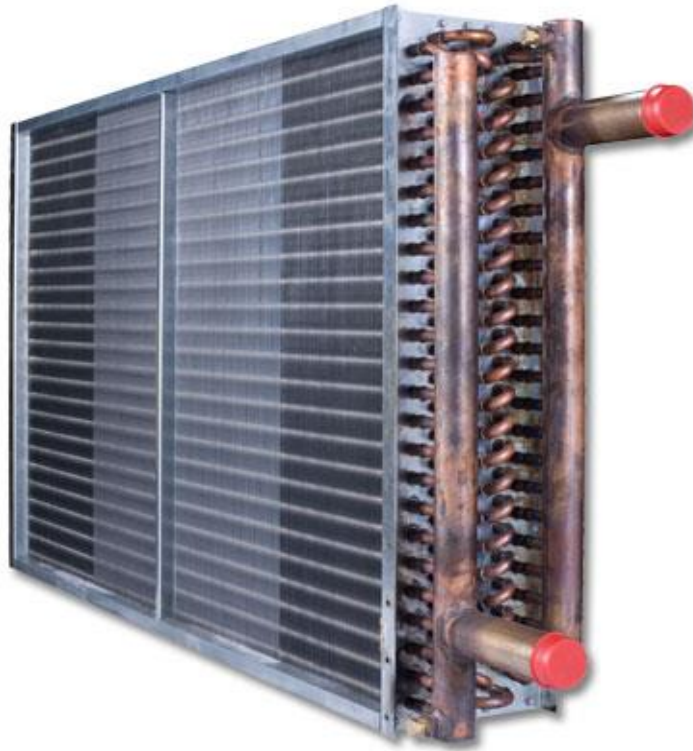


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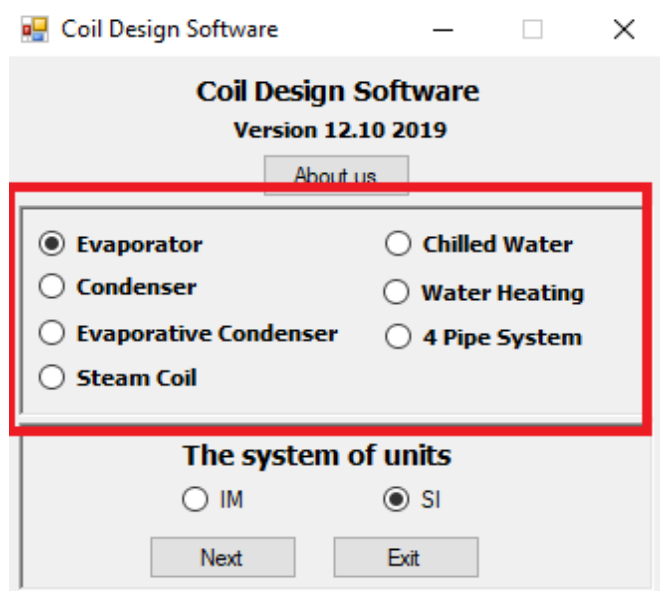
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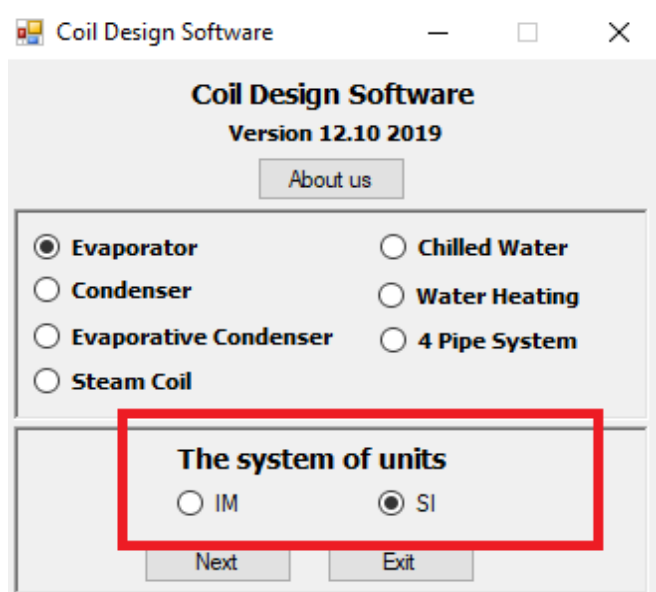


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Seven applications with Chilled water, Water heating, Evaporator, Condenser, Evaporative Condenser, Four Pipe systems and Steam Coil



SI & Imp measurement



Chilled Water input/output data and coil configuration

The screenshot displays the 'Chilled Water' software interface. It is divided into three main sections: INPUT DATA, COIL CONFIGURATION, and OUTPUT DATA.

INPUT DATA: Includes fields for Qty (1), Coil Size (3/8), Outer Diameter (0.01003 m), Inner Diameter (0.009423 m), On Coil Dry Bulb Temp. (26.7 °C), Wet on Coil Temp. (19.4 °C), Relative Humidity (50.36 %), Water in Temp. (7.2 °C), Water Out Temp. (12.7 °C), Water Flow Rate (2 l/s), Altitude (0 m), Air Flow Rate (11043.47 m3/h), and Fluid Type (Water, 100 %).

COIL CONFIGURATION: Includes Coil Length (1.6256 m), Coil Width (0.7112 m), Tube Vertical Distance (0.0254 m), Tube Horizontal Distance (0.022 m), Auto Circuit (Full circuit), Manual Circuit # (28), Fins Material (Copper), Fins Type (Wavy), Fins Thickness (0.00012 m), Fins Per Length (394), Tube Material (Copper), Tube Shape (Smooth), Rifled Tube Affect Percentage (10 %), Rows # (4), Header Direction (R), and Change Header Size (10).

OUTPUT DATA: Lists various performance metrics such as Capacity (75117.24 W), Sensible Capacity (48589.5 W), Off Coil Dry Bulb Temp (13.58 °C), Off Coil Wet Bulb Temp (12.2 °C), Water Pressure Drop (12 kPa), Static Pressure (90 Pa), Off Coil Relative Humidity (85.1 %), Off Coil Humidity (8.51 g/kg), Air Flow Rate (11043.47 m3/h), Water Out Temp. (12.7 °C), Water Flow Rate (3.27 l/s), Circuit Length (6.5 m), Water Volume Across Coil (13.3 L), Coil Header (35 mm), Coil Connection (28 mm), and Air Velocity (2.65 m/s).

Buttons for Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, and Retrieve Data are visible at the bottom.

Coil Configuration Coding

This screenshot is identical to the one above, but with a red rectangular box highlighting the coil configuration coding string: **6 30Cu 12Cu 28 4 1626 394 CW 28 112 35 R**. This string encodes the coil's physical and material properties.

Multi tube size

INPUT DATA Qty: 1 6 30 Cu 12 Cu 28 4 1626 394 CW 28 112 35 R

Coil Size: 3/8

Outer Diameter: 5/16 m

Inner Diameter: 3/8 m

On Coil Dry Bulb Temp.: 19.4 °C

Wet on Coil Temp.: 19.4 °C

Relative Humidity: 50.36 %

Calculation Depends On:

Water in/out: Flow Rate:

Water in Temp: 7.2 °C

Water Out Temp.: 12.7 °C

Water Flow Rate: 2 l/s

Altitude: 0 m

Air Flow Rate: 11043.47 m³/h

Fluid Type: Water 100 %

Coil Length: 1.6256 m

Coil Width: 0.7112 m

Tube Vertical Distance: 0.0254 m

Tube Horizontal Distance: 0.022 m

Auto Circuit: Full circuit

Manual Circuit #: 28

Fins Material: Copper

Fins Type: Wavy

Fins Thickness: 0.00012 m

Fins Per Length: 394

Tube Material: Copper

Tube Shape: Smooth

Riffled Tube Affect Percentage: 10 %

Rows #: 4

Header Direction: R

Change Header Size: 10

OUTPUT DATA

Capacity: 75117.24 W

Sensible Capacity: 48589.5 W

Off Coil Dry Bulb Temp: 13.58 °C

Off Coil Wet Bulb Temp: 12.2 °C

Water Pressure Drop: 12 kPa

Static Pressure: 90 Pa

Off Coil Relative Humidity: 85.1 %

Off Coil Humidity: 8.51 g/kg

Air Flow Rate: 11043.47 m³/h

Water Out Temp.: 12.7 °C

Water Flow Rate: 3.27 l/s

Circuit Length: 6.5 m

Water Volume Across Coil: 13.3 L

Coil Header: 35 mm

Coil Connection: 28 mm

Air Velocity: 2.65 m/s

Buttons: Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

Outer and Inner tube sizes based on selected selected pipe size and the user can change the inner tube size if needed

INPUT DATA Qty: 1 6 30 Cu 12 Cu 28 4 1626 394 CW 28 112 35 R

Coil Size: 3/8

Outer Diameter: 0.01003 m

Inner Diameter: 0.009423 m

On Coil Dry Bulb Temp.: 26.7 °C

Wet on Coil Temp.: 19.4 °C

Relative Humidity: 50.36 %

Calculation Depends On:

Water in/out: Flow Rate:

Water in Temp: 7.2 °C

Water Out Temp.: 12.7 °C

Water Flow Rate: 2 l/s

Altitude: 0 m

Air Flow Rate: 11043.47 m³/h

Fluid Type: Water 100 %

Coil Length: 1.6256 m

Coil Width: 0.7112 m

Tube Vertical Distance: 0.0254 m

Tube Horizontal Distance: 0.022 m

Auto Circuit: Full circuit

Manual Circuit #: 28

Fins Material: Copper

Fins Type: Wavy

Fins Thickness: 0.00012 m

Fins Per Length: 394

Tube Material: Copper

Tube Shape: Smooth

Riffled Tube Affect Percentage: 10 %

Rows #: 4

Header Direction: R

Change Header Size: 30

OUTPUT DATA

Capacity: 75117.24 W

Sensible Capacity: 48589.5 W

Off Coil Dry Bulb Temp: 13.58 °C

Off Coil Wet Bulb Temp: 12.2 °C

Water Pressure Drop: 12 kPa

Static Pressure: 90 Pa

Off Coil Relative Humidity: 85.1 %

Off Coil Humidity: 8.51 g/kg

Air Flow Rate: 11043.47 m³/h

Water Out Temp.: 12.7 °C

Water Flow Rate: 3.27 l/s

Circuit Length: 6.5 m

Water Volume Across Coil: 13.3 L

Coil Header: 35 mm

Coil Connection: 28 mm

Air Velocity: 2.65 m/s

Buttons: Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

On Coil temperature DB/WB or DB and RH

Chilled Water

Qty: 1

6 30 Cu 12 Cu 28 4 1626 394 CW 28 112 35 R

INPUT DATA

Coil Size: 3/8

Outer Diameter: 0.01003 m

Inner Diameter: 0.009423 m

On Coil Dry Bulb Temp.: 26.7 °C

Wet on Coil Temp.: 19.4 °C

Relative Humidity: 50.36 %

Calculation Depends On:

Water in/out: Flow Rate

Water in Temp: 7.2 °C

Water Out Temp.: 12.7 °C

Water Flow Rate: 2 l/s

Altitude: 0 m

Air Flow Rate: 11043.47 m3/h

Fluid Type: Water 100 %

OUTPUT DATA

Capacity: 75117.24 W

Sensible Capacity: 48589.5 W

Off Coil Dry Bulb Temp: 13.58 °C

Off Coil Wet Bulb Temp: 12.2 °C

Water Pressure Drop: 12 kPa

Static Pressure: 90 Pa

Off Coil Relative Humidity: 85.1 %

Off Coil Humidity: 8.51 g/kg

Air Flow Rate: 11043.47 m3/h

Water Out Temp.: 12.7 °C

Water Flow Rate: 3.27 l/s

Circuit Length: 6.5 m

Water Volume Across Coil: 13.3 L

Coil Header: 35 mm

Coil Connection: 28 mm

Air Velocity: 2.65 m/s

Coil Length: 1.6256 m

Coil Width: 0.7112 m

Tube Vertical Distance: 0.0254 m

Tube Horizontal Distance: 0.022 m

Auto Circuit: Full circuit

Manual Circuit #: 28

Fins Material: Copper

Fins Type: Wavy

Fins Thickness: 0.00012 m

Fins Per Length: 394

Tube Material: Copper

Tube Shape: Smooth

Riffled Tube Affect Percentage: 10 %

Rows #: 4

Header Direction: R

Change Header Size: 10

Buttons: Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

Water in/out or Water in , water flow

Chilled Water

Qty: 1

6 30 Cu 12 Cu 28 4 1626 394 CW 28 112 35 R

INPUT DATA

Coil Size: 3/8

Outer Diameter: 0.01003 m

Inner Diameter: 0.009423 m

On Coil Dry Bulb Temp.: 26.7 °C

Wet on Coil Temp.: 19.4 °C

Relative Humidity: 50.36 %

Calculation Depends On:

Water in/out: Flow Rate

Water in Temp: 7.2 °C

Water Out Temp.: 12.7 °C

Water Flow Rate: 2 l/s

Altitude: 0 m

Air Flow Rate: 11043.47 m3/h

Fluid Type: Water 100 %

OUTPUT DATA

Capacity: 75117.24 W

Sensible Capacity: 48589.5 W

Off Coil Dry Bulb Temp: 13.58 °C

Off Coil Wet Bulb Temp: 12.2 °C

Water Pressure Drop: 12 kPa

Static Pressure: 90 Pa

Off Coil Relative Humidity: 85.1 %

Off Coil Humidity: 8.51 g/kg

Air Flow Rate: 11043.47 m3/h

Water Out Temp.: 12.7 °C

Water Flow Rate: 3.27 l/s

Circuit Length: 6.5 m

Water Volume Across Coil: 13.3 L

Coil Header: 35 mm

Coil Connection: 28 mm

Air Velocity: 2.65 m/s

Coil Length: 1.6256 m

Coil Width: 0.7112 m

Tube Vertical Distance: 0.0254 m

Tube Horizontal Distance: 0.022 m

Auto Circuit: Full circuit

Manual Circuit #: 28

Fins Material: Copper

Fins Type: Wavy

Fins Thickness: 0.00012 m

Fins Per Length: 394

Tube Material: Copper

Tube Shape: Smooth

Riffled Tube Affect Percentage: 10 %

Rows #: 4

Header Direction: R

Change Header Size: 10

Buttons: Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

Altitude from sea level

Chilled Water

Qty: 1

Coil Size:	3/8	Coil Length:	1.6256	m
Outer Diameter:	0.01003	Coil Width:	0.7112	m
Inner Diameter:	0.009423	Tube Vertical Distance:	0.0254	m
On Coil Dry Bulb Temp.:	26.7	Tube Horizontal Distance:	0.022	m
Wet on Coil Temp.:	19.4	Auto Circuit:	Full circuit	
Relative Humidity:	50.36	Manual Circuit #:	28	
Calculation Depends On:				
<input checked="" type="radio"/> Water in/out: <input type="radio"/> Flow Rate				
Water in Temp:	7.2	Fins Material:	Copper	
Water Out Temp.:	12.7	Fins Type:	Wavy	
Water Flow Rate:	2	Fins Thickness:	0.00012	m
Altitude:	50	Fins Per Length:	394	
Air Flow Rate:	11043.47	Tube Material:	Copper	
Fluid Type:	Water	Tube Shape:	Smooth	
		Rifled Tube Affect Percentage:	10	%
		Rows #:	4	
		Header Direction:	R	
		Change Header Size:	10	

Capacity	75117.24	W
Sensible Capacity	48589.5	W
Off Coil Dry Bulb Temp	13.58	°C
Off Coil Wet Bulb Temp	12.2	°C
Water Pressure Drop	12	kPa
Static Pressure	90	Pa
Off Coil Relative Humidity	85.1	%
Off Coil Humidity	8.51	g/kg
Air Flow Rate	11043.47	m3/h
Water Out Temp.	12.7	°C
Water Flow Rate	3.27	l/s
Circuit Length	6.5	m
Water Volume Across Coil	13.3	L
Coil Header	35	mm
Coil Connection	28	mm
Air Velocity	2.65	m/s

Buttons: Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

To Specify the required air flow through the Coil

Chilled Water

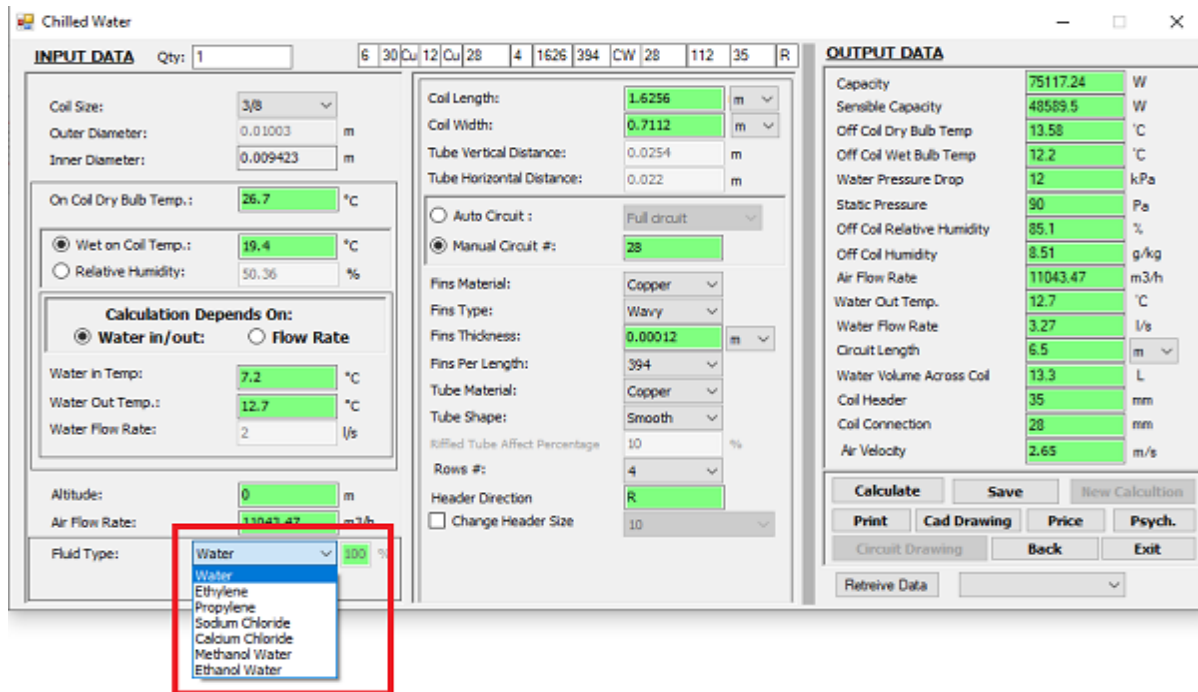
Qty: 1

Coil Size:	3/8	Coil Length:	1.6256	m
Outer Diameter:	0.01003	Coil Width:	0.7112	m
Inner Diameter:	0.009423	Tube Vertical Distance:	0.0254	m
On Coil Dry Bulb Temp.:	26.7	Tube Horizontal Distance:	0.022	m
Wet on Coil Temp.:	19.4	Auto Circuit:	Full circuit	
Relative Humidity:	50.36	Manual Circuit #:	28	
Calculation Depends On:				
<input checked="" type="radio"/> Water in/out: <input type="radio"/> Flow Rate				
Water in Temp:	7.2	Fins Material:	Copper	
Water Out Temp.:	12.7	Fins Type:	Wavy	
Water Flow Rate:	2	Fins Thickness:	0.00012	m
Altitude:	50	Fins Per Length:	394	
Air Flow Rate:	11050	Tube Material:	Copper	
Fluid Type:	Water	Tube Shape:	Smooth	
		Rifled Tube Affect Percentage:	10	%
		Rows #:	4	
		Header Direction:	R	
		Change Header Size:	10	

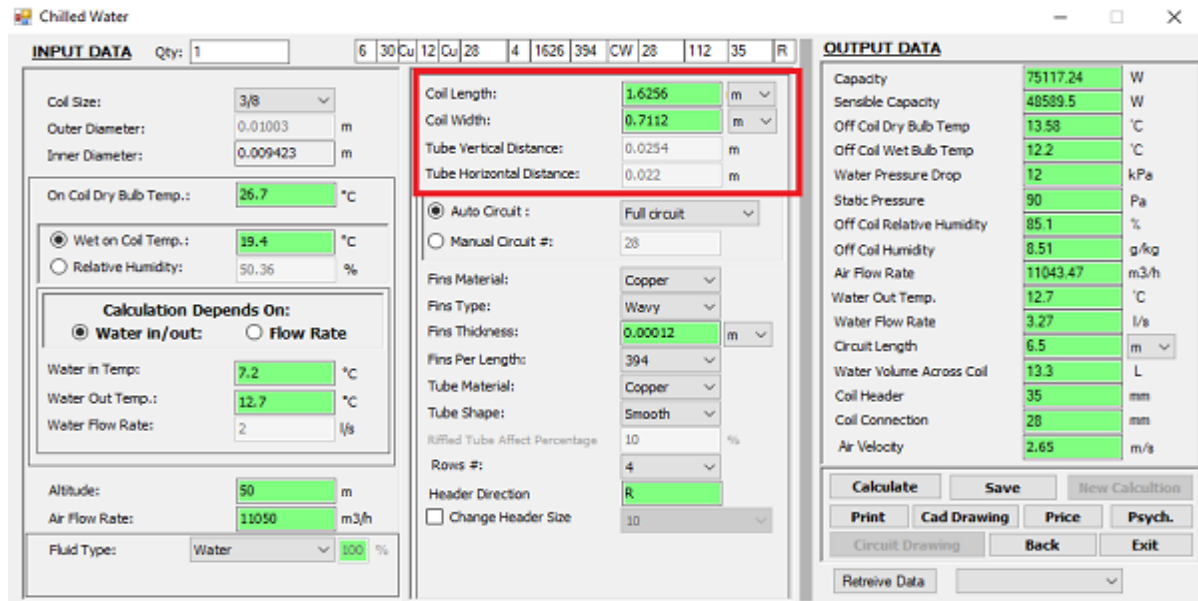
Capacity	75117.24	W
Sensible Capacity	48589.5	W
Off Coil Dry Bulb Temp	13.58	°C
Off Coil Wet Bulb Temp	12.2	°C
Water Pressure Drop	12	kPa
Static Pressure	90	Pa
Off Coil Relative Humidity	85.1	%
Off Coil Humidity	8.51	g/kg
Air Flow Rate	11043.47	m3/h
Water Out Temp.	12.7	°C
Water Flow Rate	3.27	l/s
Circuit Length	6.5	m
Water Volume Across Coil	13.3	L
Coil Header	35	mm
Coil Connection	28	mm
Air Velocity	2.65	m/s

Buttons: Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

Multi Fluids



To specify Coil length and width. Coil pitches, vertical and horizontal will be specified according to the pipe size



To select circuit type or number of circuits

INPUT DATA Qty: 1 | 6 30Cu 12Cu 28 4 1626 394 CW 28 112 35 R

Coil Size: 3/8
Outer Diameter: 0.01003 m
Inner Diameter: 0.009423 m

On Coil Dry Bulb Temp.: 26.7 °C
Wet on Coil Temp.: 19.4 °C
Relative Humidity: 50.36 %

Calculation Depends On:
Water in/out: Flow Rate:

Water in Temp: 7.2 °C
Water Out Temp.: 12.7 °C
Water Flow Rate: 2 l/s

Altitude: 0 m
Air Flow Rate: 11043.47 m3/h
Fluid Type: Water 100 %

Coil Length: 1.6256 m
Coil Width: 0.7112 m
Tube Vertical Distance: 0.0254 m
Tube Horizontal Distance: 0.022 m

Auto Circuit: Full circuit
 Manual Circuit #: 28

Fins Material: Copper
Fins Type: Aluminum
Fins Thickness: 0.00012 m
Fins Per Length: 394
Tube Material: Copper
Tube Shape: Smooth
Rifled Tube Affect Percentage: 10 %
Rows #: 4
Header Direction: R
 Change Header Size: 10

OUTPUT DATA

Capacity	75117.24	W
Sensible Capacity	48589.5	W
Off Coil Dry Bulb Temp	13.58	°C
Off Coil Wet Bulb Temp	12.2	°C
Water Pressure Drop	12	kPa
Static Pressure	90	Pa
Off Coil Relative Humidity	85.1	%
Off Coil Humidity	8.51	g/kg
Air Flow Rate	11043.47	m3/h
Water Out Temp.	12.7	°C
Water Flow Rate	3.27	l/s
Circuit Length	6.5	m
Water Volume Across Coil	13.3	L
Coil Header	35	mm
Coil Connection	28	mm
Air Velocity	2.65	m/s

Buttons: Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

To select Fins material

INPUT DATA Qty: 1 | 6 30Cu 12Cu 28 4 1626 394 CW 28 112 35 R

Coil Size: 3/8
Outer Diameter: 0.01003 m
Inner Diameter: 0.009423 m

On Coil Dry Bulb Temp.: 26.7 °C
Wet on Coil Temp.: 19.4 °C
Relative Humidity: 50.36 %

Calculation Depends On:
Water in/out: Flow Rate:

Water in Temp: 7.2 °C
Water Out Temp.: 12.7 °C
Water Flow Rate: 2 l/s

Altitude: 0 m
Air Flow Rate: 11050 m3/h
Fluid Type: Water 100 %

Coil Length: 1.6256 m
Coil Width: 0.7112 m
Tube Vertical Distance: 0.0254 m
Tube Horizontal Distance: 0.022 m

Auto Circuit: Full circuit
 Manual Circuit #: 28

Fins Material: Copper
Fins Type: Aluminum
Fins Thickness: 0.00012 m
Fins Per Length: 394
Tube Material: Copper
Tube Shape: Smooth
Rifled Tube Affect Percentage: 10 %
Rows #: 4
Header Direction: R
 Change Header Size: 10

OUTPUT DATA

Capacity	75117.24	W
Sensible Capacity	48589.5	W
Off Coil Dry Bulb Temp	13.58	°C
Off Coil Wet Bulb Temp	12.2	°C
Water Pressure Drop	12	kPa
Static Pressure	90	Pa
Off Coil Relative Humidity	85.1	%
Off Coil Humidity	8.51	g/kg
Air Flow Rate	11043.47	m3/h
Water Out Temp.	12.7	°C
Water Flow Rate	3.27	l/s
Circuit Length	6.5	m
Water Volume Across Coil	13.3	L
Coil Header	35	mm
Coil Connection	28	mm
Air Velocity	2.65	m/s

Buttons: Calculate, Save, New Calculation, Print, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

To select Fins type

The screenshot shows the 'Chilled Water' software interface. The 'INPUT DATA' section on the left contains various parameters for coil design, such as Coil Size (3/8), Outer Diameter (0.01003 m), and Water in/out temperature (7.2 °C in, 12.7 °C out). The 'Fins Type' dropdown menu is open, showing options: Wavy, Flat, Lanced, and Louver. 'Wavy' is selected and highlighted. The 'OUTPUT DATA' section on the right displays calculated results, including Capacity (75117.24 W), Sensible Capacity (48589.5 W), and Air Flow Rate (11043.47 m³/h).

To specify Fin thickness

This screenshot shows the same 'Chilled Water' software interface. In this view, the 'Fins Thickness' field is highlighted with a red box and set to 0.00012 m. The 'Fins Type' remains 'Wavy'. The 'OUTPUT DATA' section on the right shows updated calculations, such as Capacity (75117.24 W) and Air Flow Rate (11043.47 m³/h).

To specify number of fins

The screenshot shows the 'Chilled Water' software interface. The 'INPUT DATA' section on the left contains various parameters for coil design, including coil size, diameters, temperatures, and flow rates. The 'Fins Per Length' dropdown menu is highlighted with a red box, showing a list of options: 157, 236, 315, 394, 472, 551, 630, 710, and 790. The '394' option is currently selected. The 'OUTPUT DATA' section on the right displays calculated results such as Capacity (75117.24 W), Sensible Capacity (48589.5 W), and various temperature and flow rate values.

To Specify tube material

The screenshot shows the 'Chilled Water' software interface. The 'INPUT DATA' section on the left contains various parameters for coil design. The 'Tube Material' dropdown menu is highlighted with a red box, showing a list of options: Copper, Aluminum, and another option partially visible. The 'Copper' option is currently selected. The 'OUTPUT DATA' section on the right displays calculated results similar to the previous screenshot, with Capacity (75117.24 W) and Sensible Capacity (48589.5 W) among other values.

To specify tube shape

The screenshot shows the 'INPUT DATA' section of the software. The 'Tube Shape' dropdown menu is highlighted with a red box and is currently set to 'Smooth'. Other visible settings include 'Auto Circuit' set to 'Full circuit', 'Fins Material' set to 'Copper', and 'Fins Type' set to 'Wavy'. The 'OUTPUT DATA' section on the right shows various performance metrics such as Capacity (75117.24 W) and Air Flow Rate (11043.47 m3/h).

To specify number of rows

The screenshot shows the 'INPUT DATA' section of the software. The 'Rows #' dropdown menu is highlighted with a red box and is currently set to '4'. Other visible settings include 'Auto Circuit' set to 'Full circuit', 'Fins Material' set to 'Copper', and 'Fins Type' set to 'Wavy'. The 'OUTPUT DATA' section on the right shows various performance metrics such as Capacity (75117.24 W) and Air Flow Rate (11043.47 m3/h).

Press calculate to have output complete details

The screenshot shows the 'Chilled Water' software interface. The 'INPUT DATA' section on the left contains various parameters such as Coil Size (3/8), Outer Diameter (0.01003 m), Inner Diameter (0.009423 m), On Coil Dry Bulb Temp. (26.7 °C), Wet on Coil Temp. (19.4 °C), Relative Humidity (50.36 %), Calculation Depends On (Water in/out), Water in Temp (7.2 °C), Water Out Temp (12.7 °C), Water Flow Rate (2 l/s), Altitude (0 m), Air Flow Rate (11043.47 m3/h), and Fluid Type (Water 100 %). The 'OUTPUT DATA' section on the right lists calculated values: Capacity (75117.24 W), Sensible Capacity (48889.5 W), Off Coil Dry Bulb Temp (13.58 °C), Off Coil Wet Bulb Temp (12.2 °C), Water Pressure Drop (12 kPa), Static Pressure (90 Pa), Off Coil Relative Humidity (85.1 %), Off Coil Humidity (8.51 g/kg), Air Flow Rate (11043.47 m3/h), Water Out Temp (12.7 °C), Water Flow Rate (3.27 l/s), Circuit Length (6.5 m), Water Volume Across Coil (13.3 L), Coil Header (35 mm), Coil Connection (28 mm), and Air Velocity (2.65 m/s). The 'Calculate' button in the bottom right of the 'OUTPUT DATA' section is highlighted with a red box.

Save and Retrieve data

This screenshot is similar to the previous one, but with different input values. The 'INPUT DATA' section now shows On Coil Dry Bulb Temp. (26.7 °C), Wet on Coil Temp. (19.4 °C), Relative Humidity (50.36 %), Calculation Depends On (Water in/out), Water in Temp (7.2 °C), Water Out Temp (12.7 °C), Water Flow Rate (2 l/s), Altitude (50 m), Air Flow Rate (11050 m3/h), and Fluid Type (Water 100 %). The 'OUTPUT DATA' section shows: Capacity (75108.84 W), Sensible Capacity (48616.39 W), Off Coil Dry Bulb Temp (13.58 °C), Off Coil Wet Bulb Temp (12.2 °C), Water Pressure Drop (12 kPa), Static Pressure (90 Pa), Off Coil Relative Humidity (85.1 %), Off Coil Humidity (8.51 g/kg), Air Flow Rate (11050 m3/h), Water Out Temp (12.7 °C), Water Flow Rate (3.27 l/s), Circuit Length (6.5 m), Water Volume Across Coil (13.3 L), Coil Header (35 mm), Coil Connection (28 mm), and Air Velocity (2.65 m/s). In this screenshot, the 'Save' button and the 'Retrieve Data' button in the bottom right of the 'OUTPUT DATA' section are highlighted with red boxes.

Print a report under your logo

Coil Simulation Software Chilled water

Project Name : dddd
Date : 28/06/2020

Input Data			
Coil Size :	3/8	Altitude :	50 m
Outer Diameter :	0.01003 m	Tube Vertical Distance :	0.0254 m
Inner Diameter :	0.009423 m	Tube Horizontal Distance :	0.022 m
Dry On Coil Temp. :	26.7 °C	Circuit # :	28
Wet On Coil Temp. :	19.4 °C	Fins Material :	Copper
Relative Humidity :	50.36 %	Fins Type :	Wavy
Water in Temp. :	7.2 °C	Tube Material :	Copper
Water Out Temp. :	12.7 °C	Tube Shape :	Smooth
		Rows # :	4
Fluid Type :	Water 100 %	Fins Per Length :	394
Coil Length :	1.6256 m	Fins Thickness :	0.00012 m
Coil Width :	0.7112 m	Air Flow Rate :	11050 m ³ /h

OUTPUT DATA

Capacity	75108.84	W
Sensible Capacity	48616.39	W
Off Coil Dry Bulb Temp	13.58	°C
Off Coil Wet Bulb Temp	12.2	°C
Water Pressure Drop	12	kPa
Static Pressure	90	Pa
Off Coil Relative Humidity	85.1	%
Off Coil Humidity	8.51	g/kg
Air Flow Rate	11050	m ³ /h
Water Out Temp.	12.7	°C
Water Flow Rate	3.27	l/s
Circuit Length	6.5	m
Water Volume Across Coil	13.3	L
Coil Header	35	mm
Coil Connection	28	mm
Air Velocity	2.65	m/s

Buttons: Calculate, Save, New Calculation, **Print**, Cad Drawing, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

To explore autoCAD drawing with complete coil details

Chilled Water

INPUT DATA Qty: 1

Coil Size:	3/8	Coil Length:	1.6256 m
Outer Diameter:	0.01003 m	Coil Width:	0.7112 m
Inner Diameter:	0.009423 m	Tube Vertical Distance:	0.0254 m

OUTPUT DATA

Capacity	75108.84	W
Sensible Capacity	48616.39	W
Off Coil Dry Bulb Temp	13.58	°C
Off Coil Wet Bulb Temp	12.2	°C
Water Pressure Drop	12	kPa
Static Pressure	90	Pa
Off Coil Relative Humidity	85.1	%
Off Coil Humidity	8.51	g/kg
Air Flow Rate	11050	m ³ /h
Water Out Temp.	12.7	°C
Water Flow Rate	3.27	l/s
Circuit Length	6.5	m
Water Volume Across Coil	13.3	L
Coil Header	35	mm
Coil Connection	28	mm
Air Velocity	2.65	m/s

Buttons: Calculate, Save, New Calculation, **Cad Drawing**, Price, Psych., Circuit Drawing, Back, Exit, Retrieve Data

Pricing sheet of the Coil

The screenshot shows the 'Pricing' window with the following data:

Section	Parameter	Value	Unit
Header	Outer Diameter	0.019	m
	Inner Diameter	0.017	m
	Length	0.7112	m
	Material	Copper	
Weight	Tube Weight	15.42	kg
	Fins Weight	44.39	kg
Fan	Model	XZ45	
	Qty.	1	
	Price/Fan	120	
End Plate	Length	0.7112	m
	Width	0.088	m
	Thickness	0.002	m
	Qty.	2	
	Material	Steel	
Weight	1.96	kg	
Materials Price	Copper/weight	8	
	Aluminum/weight	3	
	Steel/weight	0.6	
	Valve Price	0	
Labor	Labor	0	US\$
	Margine	0	
Currency: America (United States), Dollar (USD)			
Coil Price		613.9	USD

Buttons: Price, Print, Close, Save, New Calculation, Psych., Back, Exit.

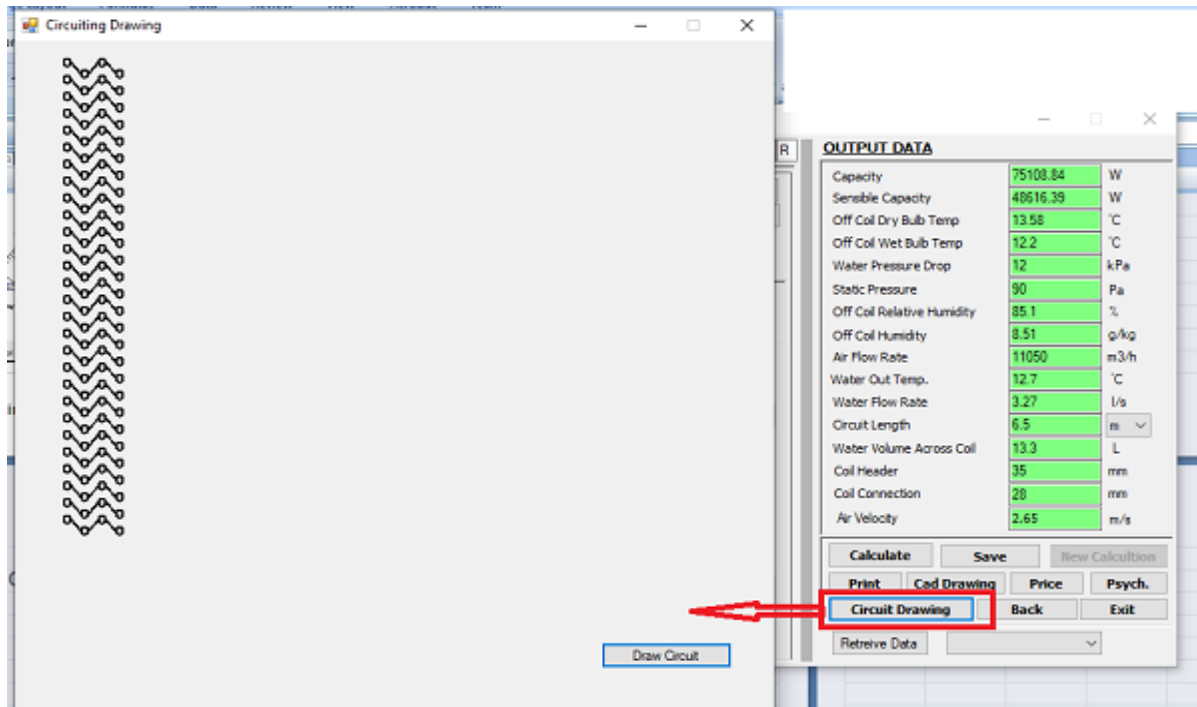
Psychrometric chart

The screenshot shows the 'Psych' window with a psychrometric chart and a data list on the right. The chart displays dry-bulb temperature (horizontal axis) and wet-bulb temperature (diagonal axis) scales. A saturation curve is visible on the right side of the chart. The data list on the right contains the following values:

75108.84	W
48616.39	W
13.58	°C
12.2	°C
12	kPa
90	Pa
85.1	%
8.51	g/kg
11050	m ³ /h
12.7	°C
3.27	l/s
6.5	m
13.3	L
35	mm
28	mm
2.65	m/s

Buttons: Price Calculation, Psych., Back, Exit.

Coil Circuiting Drawing



Evaporator Coil with a lot of refrigerants

Evaporator
— □ ×

INPUT DATA 6 30 Cu 12 Cu 28 4 1626 236 E 28 112 54 R

Qty:

Refrigerant Type: ▼

Coil Size: ▼

Outer Diameter: m

Inner Diameter: m

Evaporating Temp.: C

Suction Temp.: C

Dry on Coil Temp.: C

Wet on Coil Temp.: C

Relative Humidity: %

Liquid Temp.: C

Altitude: m

Coil Length: m

Coil Width: m

Tube Vertical Distance: m

Tube Horizontal Distance: m

Auto Circuit : ▼

Manual Circuit #:

Fins Material: ▼

Fins Type: ▼

Fins Thickness: m

Fins Per Length: ▼

Tube Material: ▼

Tube Shape: ▼

Rows #: ▼

Air Quantity: m3/h

Connection Location "R" or "L"

OUTPUT DATA

Total Capacity W

Sensible Capacity W

Off Coil Dry Bulb Temp °C

Off Coil Wet Bulb Temp °C

Fluid Pressure Drop kPa

Static Pressure Pa

Off Coil RH %

On Coil Humidity g/kg

Off Coil Humidity g/kg

Air Velocity m/s

Circuit Length m

Suction Header Diameter mm

Suction Connection mm

Liquid Header Diameter mm

Liquid Connection mm

Refrigerant Mass Flow kg/h

Change Suction Header Size ▼

Change Liquid Header Size ▼

▼

Condenser Coil with a lot of refrigerants

Condenser
— □ ×

INPUT DATA 6 30 Cu 12 Cu 48 4 1626 236 C 20 192 1 5/8 R

Qty:	1	
Refrigerant Type:	R22	<div style="border: 1px solid blue; padding: 2px;"> <p>R22</p> <p>R134A</p> <p>R407C</p> <p>R410A</p> <p>R404A</p> <p>R507A</p> <p>R32</p> <p>R1234yf</p> <p>R407A</p> <p>R1234ze</p> <p>R407F</p> <p>R449A</p> <p>R513A</p> <p>R452A</p> </div>
Coil Size:		
Outer Diameter:		
Inner Diameter:		
On Coil Dry Bulb Temp.:		
Discharge Temp.:		
Condensing Temp.:		
Altitude:		
Coil Length:		
Coil Width:		
Tube Vertical Distance:	0.0254	m
Tube Horizontal Distance:	0.022	m
<input type="radio"/> Auto Circuit : Full circuit		
<input checked="" type="radio"/> Manual Circuit #: 20		
Fins Material:	Copper	
Fins Type:	Wavy	
Fins Thickness:	0.00012	m
Fins Per Length:	236	
Tube Material:	Copper	
Tube Shape:	Smooth	
Rows #:	4	
Air Quantity:	10000	m3/h
Manifold Location "R" or "L"	R	

OUTPUT DATA

Capacity	56683.11	W
Off Coil Dry Bulb Temp.:	51.9	°C
Fluid Pressure Drop	11.475	kpa
Static Pressure	15	Pa
Air Velocity	1.4	m/s
Circuit Length	15.61	m
Discharge Header Diameter	42	mm
Discharge Connection	35	mm
Liquid Header Diameter	35	mm
Liquid Connection	28	mm
Refrigerant Mass Flow	942.43	kg/h
<input type="checkbox"/> Change Dis Header Size	10	
<input type="checkbox"/> Change Liquid Header Size	10	

Calculate	New	Save
Price	CAD Drawing	Print
Circuit Drawing	Back	Exit
Retrieve Data	▼	

Evaporative Condenser

Evaporative Condenser
— □ ×

INPUT DATA

6	30	Cu	12	Cu	47	4	1600	236	C	20	188	1 5/8	R
---	----	----	----	----	----	---	------	-----	---	----	-----	-------	---

Qty:

Refrigerant Type:

Coil Size:

Outer Diameter: m

Inner Diameter: m

On Coil Dry Bulb Temp.: °C

On Coil Wet Bulb °C

Relative Humidity %

Discharge Temp.: °C

Condensing Temp.: °C

Altitude: m

Coil Length: m

Coil Width: m

Tube Vertical Distance: m

Tube Horizontal Distance: m

Auto Circuit :

Manual Circuit #:

Fins Material:

Fins Type:

Fins Thickness: m

Fins Per Length:

Tube Material:

Tube Shape:

Rows #:

Air Quantity: m³/h

Manifold Location "R" or "L"

OUTPUT DATA

Capacity: W

Off Coil Dry Bulb Temp.: °C

Fluid Pressure Drop: kPa

Static Pressure: Pa

Air Velocity: m/s

Circuit Length: m

Discharge Header Diameter: mm

Discharge Connection: mm

Liquid Header Diameter: mm

Liquid Connection: mm

Refrigerant Mass Flow: kg/h

Change Dis Header Size

Change Liquid Header Size

Calculate

Save

Price

Back

New Calculation

Print

CAD Drawing

Exit

Circuit Drawing

Retrieve Data

Water Heating Coil

Water Heating

Qty: 1 6 30 Cu 12 Cu 28 4 1626 236 WH 12 112 R

INPUT DATA

Coil Tube Size: 3/8

Outer Diameter: 0.01003 m

Inner Diameter: 0.009423 m

Dry on Coil Temp.: 26.7 °C

Wet on Coil Temp.: 19.4 °C

Calculation Depends On:

Water in/out: Flow Rate

Water in Temp.: 50 °C

Water Out Temp.: 40 °C

Water Flow Rate: 0.84 L/s

Altitude: 0 m

Air Flow Rate: 11044.8 m3/h

Fluid Type: Water 100 %

Coil Length: 1.6256 m

Coil Width: 0.7112 m

Tube Vertical Distance: 0.0254 m

Tube Horizontal Distance: 0.0254 m

Auto Circuit: Quarter circuit

Manual Circuit #: 12

Fins Material: Copper

Fins Thickness: 0.00012 m

Fins Per Length: 236

Fins Type: Wavy

Tube Material: Copper

Tube Shape: Smooth

Rifled Tube Affect Percentage: 10 %

Rows #: 4

Header Direction: R

Change Header Size: 10

OUTPUT DATA

Total Capacity: 62962.17 W

Off Coil Dry Bulb Temp.: 43.7 °C

Water out Temp.: 40 °C

Water Flow Rate: 1.51 L/s

Circuit Length: 15.17 m

Air Flow Rate: 11044.8 m3/h

Static Pressure: 53 Pa

Water Pressure Drop: 68 kPa

Water Volume Across Coil: 13.3 L

Coil Header: 22 mm

Coil Connection: 19 mm

Air Velocity: 2.65 m/s

Buttons: Calculate, Save, Cad Drawing, Print, Price, New Calculation, Circuit Drawing, Back, Exit, Retrieve Data

Four Pipe system (cooling and heating coils)

Four Pipe System

INPUT DATA

General

Coil Size: 3/8

Outer Diameter: 0.01003 m

Inner Diameter: 0.009423 m

Altitude: 0 m

Air Flow Rate: 3600 m3/h

Coil Length: 1 m

Coil Width: 0.5 m

Tube Vertical Distance: 0.0254 m

Tube Horizontal Distance: 0.022 m

Fins Material: Copper

Fins Type: Wavy

Fins Thickness: 0.00012 m

Fins Per Length: 472

Tube Material: Copper

Tube Shape: Smooth

Rifled Tube Affect Percentage: 10 %

Fluid Type: Water 100 %

Header Direction: R

Calculation Depends On:

Rows No Tube No

Heating

On Coil Dry Bulb Temp.: 21 °C

Wet on Coil Temp.: 15 °C

Relative Humidity: 52.2 %

Calculation Depends On:

Water in/out: Flow Rate 0.15 l/s

Water in Temp.: 100 °C

Water Out Temp.: 80 °C

Rows #: 4

Tube #: 10

Auto Circuit: Full circuit

Manual Circuit #: 55

Cooling

Rows #: 4

Tube #: 20

Auto Circuit: Full circuit

Manual Circuit #: 20

Calculation Depends On:

Water in/out: Flow Rate

Water in Temp.: 7 °C

Water Out Temp.: 12 °C

Water Flow Rate: 0.88 L/s

Change Cooling Header Size: 10

Change Heating Header Size: 10

OUTPUT DATA

Cooling Capacity: 87736.5 W

Heating Capacity: 74946 W

Cooling Sensible Capacity: 72637.38 W

Off Coil Dry Bulb Temp.: 22.91 °C

Off Coil Wet Bulb Temp.: 14.9 °C

Water Pressure Drop Cooling: 113.915 kPa

Water Pressure Drop Heating: 7.987 kPa

Static Pressure: 111 Pa

Off Coil Relative Humidity: 41.13 %

Off Coil Humidity: 7.47 g/kg

Air Flow Rate: 3600 m3/h

Water Flow Rate Heating: 0.9 L/s

Water Flow Rate Cooling: 4.2 L/s

Water Volume Across Coil Cooling: 11.9 L

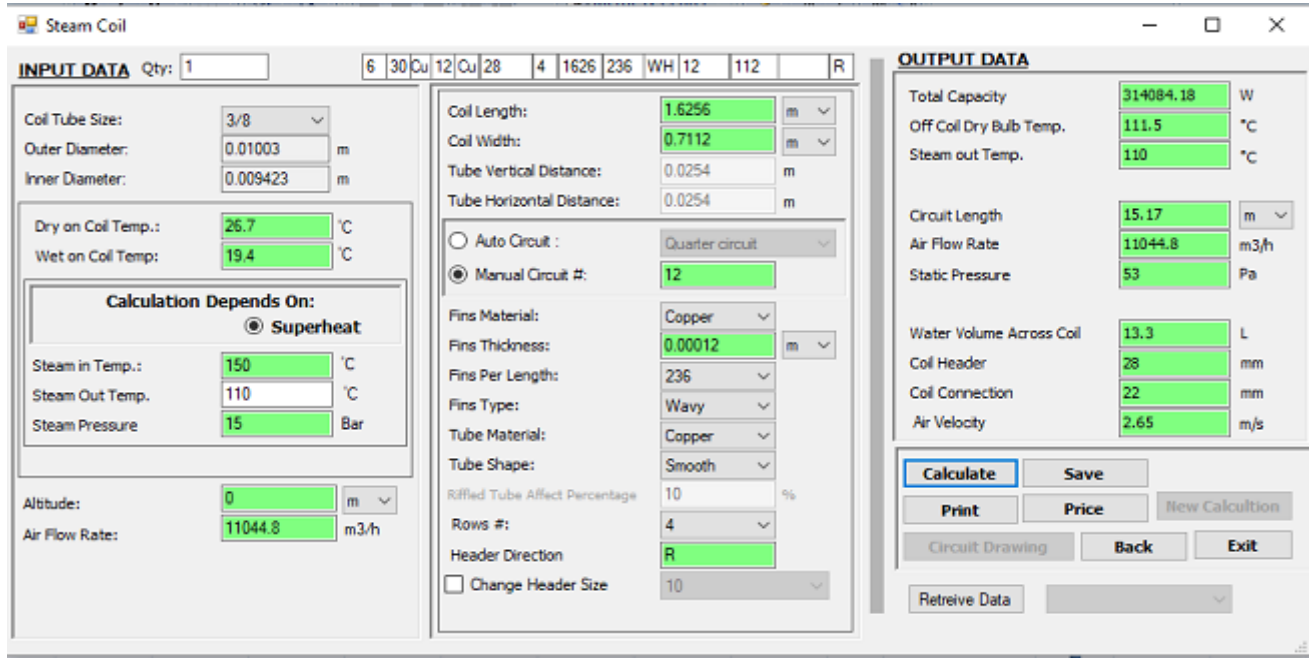
Air Velocity: 2 m/s

Cooling Coil Header Size: 41 mm

Heating Coil Header Size: 19 mm

Buttons: Calculate, Save, New Calculation, Psych., Price, Print, Back, Exit, Retrieve Data

Steam Coil



The screenshot shows the 'Steam Coil' software interface with the following data:

INPUT DATA		OUTPUT DATA	
Coil Tube Size:	3/8	Total Capacity:	314084.18 W
Outer Diameter:	0.01003 m	Off Coil Dry Bulb Temp.:	111.5 °C
Inner Diameter:	0.009423 m	Steam out Temp.:	110 °C
Dry on Coil Temp.:	26.7 °C	Circuit Length:	15.17 m
Wet on Coil Temp.:	19.4 °C	Air Flow Rate:	11044.8 m ³ /h
Calculation Depends On: <input checked="" type="radio"/> Superheat		Static Pressure:	53 Pa
Steam in Temp.:	150 °C	Water Volume Across Coil:	13.3 L
Steam Out Temp.:	110 °C	Coil Header:	28 mm
Steam Pressure:	15 Bar	Coil Connection:	22 mm
Altitude:	0 m	Air Velocity:	2.65 m/s
Air Flow Rate:	11044.8 m ³ /h	<input type="button" value="Calculate"/> <input type="button" value="Save"/>	
Coil Length:	1.6256 m	<input type="button" value="Print"/> <input type="button" value="Price"/> <input type="button" value="New Calculation"/>	
Coil Width:	0.7112 m	<input type="button" value="Circuit Drawing"/> <input type="button" value="Back"/> <input type="button" value="Exit"/>	
Tube Vertical Distance:	0.0254 m	<input type="button" value="Retrieve Data"/>	
Tube Horizontal Distance:	0.0254 m		
Auto Circuit:	Quarter circuit		
Manual Circuit #:	12		
Fins Material:	Copper		
Fins Thickness:	0.00012 m		
Fins Per Length:	236		
Fins Type:	Wavy		
Tube Material:	Copper		
Tube Shape:	Smooth		
Riffled Tube Affect Percentage:	10 %		
Rows #:	4		
Header Direction:	R		
Change Header Size:	10		

Thanks for Choosing Applied Engineering Solutions Co. to supply Technical Software, for more details, please find here below link for a video summarizing all the scope of work for Applied Engineering Solutions Co.

https://youtu.be/DUGU5rBND_U

USER MANUAL FOR COIL SOFTWARE



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