


 AHRI CERTIFICATION PROGRAM FOR FORCED CIRCULATION AIR-COOLING AND
 AIR-HEATING COILS - COIL INPUTS FORM

Purpose of Form:

Qualification of new BMG

AHRI Reference No.:

Manufacturer: A.C HUMIDIN AIR SYSTEMS PVT LTD

Coil Model No.: 133228_SW_S_CW 18T 4NR 650.24A 2.12P 9NC

Attached Output File Name:

Coil Information:

 Function: Cooling
 Fluid: Water
 Type: Continuous Circuit Typ

Physical Coil Data

a	Length, Finned (mm)	650.2	e	Tubes	1	Nom. O.D.	12.700 MM		
b	Height (mm)	571.5			2	Material	COPPER		
c	Face Area (sq. ft.)	4			3	No. Rows	4		
d	Fins	1			Configuration	Sine Wave	4	No. Circuits	9
		2			Material	AL	5	Spacing (S _f / S _t)	31.75/27.5 mm
		3			Thickness	0.12	6	No. Tubes	18
		4			Spacing (FPI)	12	7	Internal Construction	SMOOTH
	4	Fin Collars			FULL	8	Header	42x1.5 [1 5/8"]	

AHRI Certified Rating Conditions (Standard Barometric Pressure 29.92 in. Hg)

Entering Conditions:

Leaving Conditions:

 Air (°F) DB 80
 Air (°F) WB 67
 Water (°F) 45

 Air (°F) DB 60.5
 Air (°F) WB 57.4
 Water (°F) 55

 Air Face Velocity (fpm) 500
 Water Velocity (fps) 2.43

 Total Air Volume (cfm) 2000
 Water Flow Rate (gpm) 11.88

AHRI Certified Ratings Obtained:

 1. Total Coil Capacity (Btu/h) 60,006
 2. Sensible Coil Capacity (Btu/h) 41,999

 3. Coil Pressure Drop:
 a. Air-Side (in. H2O) 0.525
 Water Side (ft. H2O) 3.048

Selection Method/Information:

Software Name: Unilab coilsSoftware Version No.: 8

Request by:

Name: Vibhor GuptaTitle: DirectorCompany: A.C HUMIDIN AIR SYSTEMS PVT LTDPhone: 9654452921Email: vibhor@humidin.comDate: 4/29/2022

PROJECT / UUT INFORMATION

Project / Task:	G104948227	Test Duration:	1800	Ratings:	
AHRI # / Ref#:	PVT	Refrigerant:	WATER	Capacity:	60,006.00 [btu/hr]
Manufacturer:	HUMIDIN	Heat/Cool:	COOLING	APD:	0.53 [inH2O]
Model Number:	133228_SW_S_CW 18T 4NR 650.24A 2.12P 49NC	Test File:	Cool_ACHC_8k_Water	WPD:	3.05 [ftH2O]
Serial Number:		Test Type:	WC	Air Flow:	2,000.00 [CFM]
Test Date/Time:	8/26/2022 16:15			Water Flow:	11.88 [GPM]
Technician:	JAC				

TEST DATA

G104948227_CRTHVAC08b_4255

AIR SIDE:		Nozzle Ø:	Water:
	Indoor	ID	Inlet Outlet
Barometer:	28.72 [inHg]	0.00	Temperature: 44.95 54.17 [°F]
Inlet Dry Bulb:	79.98 [°F]	0.00	Volumetric Flow Rate: 11.91 [GPM]
Inlet Wet Bulb:	67.04 [°F]	0.00	Pressure Drop: 2.20 [inHg]
Outlet Dry Bulb:	59.29 [°F]	4.98	
Outlet Wet Bulb:	58.20 [°F]	0.00	
Noz Temp:	59.29 [°F]	5.99	
Ambient:	84.27 [°F]		Coil Dimensions:
Static at Inlet:	0.03 [inH2O]		Size: 25.75 22.75 [in]
Unit Pressure Drop:	0.47 [inH2O]		Total Face Area: 4.07 [ft ²]
Noz Diff Pressure:	2.27 [inH2O]		Header Size: 1.500
Before Noz Pressure:	-0.67 [inH2O]		FPI: 12.000
Airflow:	1,998.62 [CFM]		

CALCULATION

INDOOR AIR ENTHALPY			WATER ENTHALPY			
	Inlet	Outlet	Nozzle		Inlet	Outlet
Spec Volume {v'n}:			13.8599	State:	LIQUID	LIQUID
Humidity Ratio {W}:	0.01181	0.01053	0.01053	Spec enthalpy, h:	13.05	22.30
Enthalpy {h}:	32.15	25.66		Spec density, rho:	62.42	62.39
Absolute Static Pressure:		28.707	[inHg]	Spec heat, Cp:	1.00	1.00
Average Air Density:		0.07194	[lb/cf]	Mass Flow Rate:		5,962
Outlet Duct Leakage:		8.0060	[BTU/hr-F]	Std Volumetric Flow:		11.92
Inlet Duct Leakage:		1.9560	[BTU/hr-F]	Total Water Capacity:		54,964
Air Flow:		145	[lb dry air/min]	Water Pressure Drop:		2.33
Standard Air Flow:		1,928	[SCFM]	Heat Balance:		1.90%
Sensible Capacity:		43,831	[btu/hr]			
Total Air Side Capacity:		56,019	[btu/hr]			
Air Pressure Drop:		0.452	[in WG]			
Average Capacity:		55,492	[btu/hr]			
Percent Rated AirFlow:		99.93%	[%]			
Percent Rated WatFlow:		100.24%	[%]			
Percent Rated Capacity:		92.48%	[%]			
Percent Rated APD:		86.10%	[%]			
Percent Rated WPD:		76.44%	[%]			

NOTES

