Heating & Air Conditioning Ent.

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Air Handling Units GD Series

Tailor Your Atmosphere

About Us



HACE took the advantage of the strongly increasing demand on its high quality products and launched numerous expansion plans to increase the production capacity by double, increase the working staff by 30%, provide totally new products with wider range of choice, release new HVAC products series with new specifications and develop the existing products and services. HACE is based on a production facility of 30'000 m² along with a storage area of 5'750 m². HACE team consists of more than 500 highly skillful technical and senior engineers.

In 1976 HACE started the manufacturing of HVAC products and supplies in the Kingdom of Saudi Arabia. In 1980, the primary manufacturing plant was built in the Second Industrial City in Riyadh and from that point, HACE started the manufacture of air conditioning equipment, air devices, heavy duty centrifugal blowers, and pre-insulated pipes under the trade name "Goldenstar". In 2004, the company trade name was changed to "Royal Temp" and to be used for all products. In 2012, the name HACE was chosen to replace the old trade names and declare a new milestone in the company's history.

In continuation of its growth pursuit, HACE is eagerly following the recent HVAC technologies and developments by providing its employees with the best training sessions coupled with its wide knowledge of HVAC sciences and products. HACE high quality equipment has acquired various international certifications like AHRI, ETL, UL, CE, and ISO 9001 along with many vendor approvals from the governmental sector, semi-governmental and leading private companies.

Today, HACE is producing a huge variety of HVAC products, supplies and services that will grant all of its customer's air comfort requirements to the least detail, "Tailor Your Atmosphere".

Our Vision

Become customer's first choice regionally and be recognized globally for providing high quality air comfort solutions.

Our Mission

www.hace.com.sa

Ensure total customer satisfaction for Air Comfort requirements by providing high quality, tailored, affordable, energy efficient and eco-friendly products and services.

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NOMENCLATURE



FEATURES & BENEFITS

- Double wall casing with injected polyurethane insulation
- Modular assembly
- Rigid frame sections of adequate strength
- Low leakage casing
- Structural steel fan and motor baseframe
- Equipment service panels
- AHRI Certified water cooling coils
- Choice of aerofoil type, backward, or inclined type fans
- Custom tailored to site requirement is possible

THERMAL AND SOUND RELIABILITY DOUBLE WALL CASING WITH INJECTED POLYURETHANE INSULATION

Units are constructed with double wall panels having injected CFC free polyurethance foam encapsulated inside panel cavity that offers excellent thermal properties and sound reduction through the unit casing. Frames are also insulated with the same insulation material.

Heat transfer coefficient are as follows: 0.021 W/m²-K (25mm panel) 0.010 W/m²-K (50mm panel)

Wall noise attenuation is given below for the complete frequency spectrum.

Octave band frequncy, HZ	63	125	250	500	1k	2k	4k	8k
25mm panel	12	21	25	39	38	49	44	47
50mm panel	17	21	29	39	38	49	47	55

Outmigration of insulating material is virtually impossible due to sealed panel system.

Probability of moisture migration into the panel interior is eliminated.

Casing are held firmly in place onto the framework by means of selflocking wedge profile which exerts pressure evenly on the panel and sealing gasket.

ROBUST DESIGN RIGID SECTION FRAMEWORK OF ADEQUATE STRENGTH

Units are constructed with extruded aluminum framework insulated with injected CFC free polyurethane foam offering excellent strength and thermal properties.

The unit framework is assembled in three dimensional moulded Nylon corner pieces providing an extremely rigid structure.

The framework offers the possibility of complete disassembly in case of difficult access and ease of assembly on site.

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FLEXIBILITY AND ADAPTABILITY

HACE air handling units are manufactured in sections of infinite variety of dimensions that make all kinds of combinations possible (blow and draw through, multizone, dual duct, return and supply fan section, etc...), thus providing ease of mobilization for installing the unit.

Also, panel and frame construction offers the possiblity of disassembling the parts in case of difficult access. This features offers flexibility however maintaining the mechanical strength and aesthetic appearance of the unit.



INNOVATIVE DESIGN

Part of the innovative design to ensure proper sealing, access doors are equipped with 3-way locking system and unit connections are provided with self-aligning 3D clamp that will align unit sections in X, Y, and Z axis as the throughbolt is tightened.



GUARANTEED COOLING AND HEATING PERFORMANCE AHRI CERTIFIED WATER COILS

HACE air handling units are equipped with AHRI certified cooling coils.

Water heating and cooling coils are furnished with 5/8" copper tubes mechanically bonded to aluminum fins. Water cooling coils are available in 3, 4, 5, 6, 8, 10, & 12 rows deep and water heating coils are from 1 to 4 rows deep.

Where initial cost is requested to be low, coils can be furnished with 3/8'' and 1/2'' copper tubes but water pressure drop will be on the high side and can affect operational cost.





These coils are manufactured locally by HACE and are certified to comply with the requirements of AHRI Standard 410 - Forced Circulation Air Cooling and Heating Coils.

Direct expansion coils are furnished with 1/2" or 3/8" tubes mechanically bonded to aluminum fins as a standard. These coils are furnished with brass sweat type distributor and suction connection made of copper. These coils are locally manufactured by HACE.



Optional corrosion protection are available upon request as follows;

1. Copper tube - copper fins construction

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2. Copper tube - copper fins electrotined after fabrication (this is more suitable for stringernt and in same line in upper or lower sentence)

3. Copper tube - aluminum fins with Phenolic coating

HEAVY DUTY FANS AND MOTORS

HACE air handling units are provided with double inlet double width centrifugal type fan as a standard and is belt driven using electric motor equipped with sheave. The impellers are statically and dynamically balanced. The fan assembly is heavy duty made from well known fan manufacturer.

Forward and backward curved fans are provided with sealed, single row, self-aligning pillow block ball bearing with grease nipple. Aerofoil type fans are provided with self-aligning pillow block ball or roller bearing with grease nipple and larger size fan are provided with split pillow block bearing to facilitate wheel removal.

The fan and motor are installed on a sturdy structural baseframe as an assembly. The assembly is mounted onto vibration spring isolator and fan discharge is provided with flexible connector thereby eliminating vibration from unit casing.

Motors are totally enclosed with class F insulation conforming to NEMA standard or IP 55 class F insulation conforming to IEC standard. The motor is mounted on heavy duty steel construction adjustable base to adjust belt tension during installation.

Sheaves are precision turned, statically and dynamically balanced and selected with a minimum service factor of 1.3. Motors up to 20 HP are provided with adjustable pitch sheave and motors 25 HP and above are provided with fixed pitch sheave.





ELECTRIC HEATER BATTERY

Elecric heater batteries are manufactured by HACE with two options of heater element to choose. One option is the open type heater element (HF series) and the other is the sheath type element (CHMS series).

HF series electric heaters are tested and ETL listed complying with UL 1996 Standard.

CHMS series electric heaters are equipped with UL listed tubular heating elements and components.





STEAM HUMIDIFIER

Electrode type steam generator in various capacities, factory installed complete with fill tank, stainless steel steam distribution tube, hose, and electronic controller. Controller is available for modulating type or ON/OFF type.

RUN AROUND COILS

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A type of energy recovery heat exchanger positioned in the supply and exhaust air stream. A typical sun around coil system comprises of coils connected to each other by a pumped pipework circuit.

Coils are furnished with 5/8" copper tubes mechanically bonded to aluminum fins. These coils are available in 3, 4, 5, 6, 8, 10, & 12 rows deep.



PRE-FILTERS

Aluminum washable filter - low resistance, permanent metal filter which can be cleaned with warm water and detergent. These filters can be used for cleanliness requiring a synthetic dust weight arrestance averaging from minumum of 57% to a maximum of 81%.

Disposable panel filter - higher cleaning efficiency giving more protection to the conditioned space. These filters can be used for cleanliness requiring dust spot efficiency of 30-35% (MERV 8). Filter media are available in synthetic fiber pleated media consisting of continuous filament glass fiber of progressive density.





BAG FILTERS

Extended surface pocket filters or simply bag filters are used when high performance air filtration and high dust holding capacity is required. These filters are called final filters in air handling units and are available in dust spot efficiency of 40-45% (MERV 8), 60-65% (MERV 12), 80-85% (MERV 14), and 90-95% (MERV 15).

HEPA FILTERS

Hepa filters are used to remove airborne biological contaminants in hospital critical area. These filters are also used in pharmaceutical processing industries to meet exact requirements of the laboratories, precision manufacturing and micro electornic industries. It comes with efficiency of 99.99%.



Other type of filters available as per requirements are:

- 1. Cartridge type filters
- 2. Carbon filters
- 3. Roll filters

SOUND ATTENUATOR

Design to minimize air pressure drop and maximize air handling capacity, HACE made sound attenuators are constructed from galvanized steel with layered fiberglass air cushion. They can be provided in the supply air and return air side depending on the requirement of sound level.





SAND TRAP LOUVER

Sand trap louver allows the flow of air while separating and trapping the sand from air. HACE sand trap louver are made from galvanized steel sheets and are painted. It has self emptying holes at the bottom to drain the trapped sand.

DAMPERS

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Frames and blades are constructed from galvanized steel sheet. Dampers are provided with opposed triple-V type blade as a standard. Parallel type blades are also available as an option. Blades are carried on round steel axles and are linked together.

Airfoil shaped extruded aluminum or roll foprmed steel blades are available as an option for low leakage application.



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QUICK SELECTION CHART



5/8" tube, 4 Rows

	ON	COIL	AFR	⊢		10FPI				1	4KOWS 12FPI					14FPI		
MODEL (GD)	DB	WB		тс	SC	WFR	WPD	VEL	тс	sc	WFR	WPD	VEL	тс	SC	WER	WPD	VEL
	*F	*F	SCFM	MBH	MBH	GPM	FT	FPS	MBH	MBH	GPM	FT	FPS	MBH	MBH	GPM	FT	FPS
	76	63		19.55	17.51	3.89	2.80	1.57	22.65	19.85	4.51	3.68	1.81	25.69	21.93	5.12	4.65	2.06
222	78	65	10000	22.23	19.04	4.43	3.56	1.78	26.22	21.64	5.22	4.84	2.10	29.84	23.74	5.94	3.50	2.39
2.5	80	67	1125	25.28	20.50	5.03	4.52	2.02	29.96	23.09	5.97	3.53	2.40	34.36	25.35	6.84	4.54	2.75
	85	70	1	31.49	24.36	6.27	3.87	2.52	37.26	27.32	7.42	5.27	2.98	42.82	29.92	8.53	6.81	3.43
	76	63		31.96	28.47	6.36	2.81	1.92	37.24	32.33	7.42	3.73	2.24	42.12	35.56	8.39	4.69	2.53
2222	78	65		36.50	30.94	7.27	3.60	2.19	42.64	34.80	8.49	4.79	2.56	48.65	38.14	9.69	4.22	2.92
4	80	67	1750	41.35	33.00	8.23	4.53	2.48	48.76	37.01	9.71	4.74	2.93	56.02	40.67	11.16	5.46	3.36
	85	70	1	50.81	38.88	10.12	4.57	3.05	60.19	43.57	11.99	6.23	3.62	69.27	47.77	13.79	8.06	4.16
	76	63		42.59	38.77	8.48	2 79	1.02	50.44	45.20	10.04	1.25	1.21	57.67	50.68	11.48	1.60	1 39
	78	65		49.91	43.81	9.94	1.22	1.02	59.09	50.36	11.77	1.68	1.42	68.10	56.17	13.56	2.19	1.64
6	80	67	2915	58.04	48.38	11.56	1.62	1.39	69.06	55.07	13.75	2.25	1.66	79.84	60.96	15.90	1.90	1.92
	85	70	1	74.25	59.16	14 79	2.57	1.78	89.23	67.26	17.77	2 33	2.14	102.47	73.66	20.40	3.02	2.46
	76	63		73.78	65.92	14.69	2.57	1.77	85.79	74 77	17.08	2.55	2.06	98.07	82.91	19.53	3.26	2.40
	78	65	1	84.19	71.59	16.76	2.02	2.02	99.37	81.23	19.79	3 34	2.00	113.26	89.00	22.55	4.25	2.50
9	80	67	4105	96.54	77.16	19.22	3.16	2.02	113.67	86.47	22.63	4 28	2.35	130.53	94.99	25.99	5.53	3.14
	85	70	1	118.84	91.02	23.66	4.64	2.86	140.61	101.93	28.00	5.17	3.38	161.73	111.70	32.21	6.69	3.89
	76	63	<u> </u>	96.75	86.51	19.27	2.50	1 79	113 71	99.04	22.64	3.38	2 10	128.62	108.87	25.61	4.24	2.38
	78	65		110.34	03.04	21.97	3.10	2.04	130.23	106.63	25.03	4 34	2.10	148.45	116.89	20.01	4.08	2.30
12	80	67	5415	126.41	101.26	25.17	4.11	2.04	148.90	113 52	29.55	4.11	2.41	170.97	124 72	34.04	5 30	3.16
	85	70		155.61	119.42	30.98	4.46	2.94	184 22	133.95	36.69	4.81	3.40	211 94	146 70	42.20	6.21	3.02
	76	63		136.61	120.44	27.20	4.04	2.00	158 14	135.53	31.49	5 20	2.92	179.37	148.94	35.72	6.67	3 21
	70	65		154.07	120.44	20.69	5.04	2.52	190.59	145 20	25.06	6.75	2.32	206.41	150 20	41 10	7.04	2.91
16	20	67	7040	174.69	127.44	24.70	6.25	2.03	206.49	154.20	41 12	7.05	2.92	200.41	169.20	47.20	9.10	4 20
	95	70	1	212 10	161 25	42.45	7.47	2.04	200.49	190.56	50.20	10.22	3.02	201.44	109.21	59.04	12 22	5.20
	76	62	<u> </u>	179.62	167.47	42.45	4.96	2.52	206 77	177.20	41 17	4 70	2.00	231.47	104.76	46.70	5.02	3.33
	70	65	1	201.49	169.09	40.12	4.50	2.52	226.17	190.07	41.17	6.00	2.32	254.55	209.16	52.74	7.66	2.91
20	20	67	9205	201.43	170 71	40.12	5.65	2.03	270.02	201.63	52 77	7.67	2.92	209.90	200.10	61.92	9.01	4 30
	95	70	1	220.45	210.97	45.45	9.13	3.23	220.02	226 10	65.90	0.00	1.62	321.00	250.05	75.90	12.91	5 20
	76	63	<u> </u>	270.00	200.15	A5 49	6.49	3.34	265 20	230.10	52.91	9.50	3.75	301.09	233.03	60.05	10.77	4.26
	70	65	1	259 12	214.29	51.40	9.10	3.65	203.20	240.50	60.35	10.97	4.28	347.04	247.45	69.10	12.56	4.20
24	20	67	11330	201.90	227 27	58 12	10.14	4.12	345.80	255 14	69.96	12.49	4.20	397.04	203.00	70 21	16.11	5.62
	95	70	1	255.40	265.65	70.79	12.12	5.02	422.30	207.22	84.00	17.96	5.07	496.24	275.74	06.94	22.26	6.97
-	76	63	<u> </u>	269 72	205.05	52 51	7.49	3.02	311 00	257.52	62.13	8.42	3.37	354 79	201.09	70.64	10.67	4.26
	70	65		203.63	253.47	60.46	8.02	2.65	256 50	204.52	71.01	10.45	4.79	408 24	210.19	81.20	12.29	4.20
30	80	67	13330	242.28	267.36	68.37	10.05	4 12	406 77	202.55	81.00	12 30	4.20	400.24	320.10	02.10	15.99	5.62
	95	70		419 22	212 53	93.30	12.04	5.02	400.77	349.80	02.02	17.71	5.07	572 17	323.10	112.02	22.90	6.97
	76	63	<u> </u>	317 71	277 47	63.26	9.66	3.02	369.44	312.12	73 56	11.56	4.44	420.83	342.07	83.90	14.64	5.05
	70	65		350 30	206.57	71 56	12.09	4 32	422.51	332.12	84.13	14.75	5.08	420.03	364.93	96.42	18.00	5.82
35	80	67	15415	405.99	314 17	80.84	13.72	4.52	422.51	352.74	95.95	18.73	5.70	554 14	386.67	110 34	24.15	5.62
	29	70	1	403.33	266.29	09.22	10.52	4.00	401.07	410.06	116.95	26.90	7.05	675 59	450.21	124 52	24.15	0.00
	76	63	<u> </u>	363 58	319.87	72.40	5.23	2 73	421 38	359.97	83.01	5.27	3.16	478 30	305 54	95 24	6.65	3.50
	79	65	1	410.30	343.12	81 72	5.03	3.09	481 20	385.20	95.94	6.73	3.61	550.42	422.35	109.60	8.60	4.12
40	80	67	18500	464.84	364.42	92 56	6.31	3.40	549.97	408.94	109.49	8.50	4.12	632.27	448.62	125.00	10.00	4.15
	25	70	1	566.74	427.05	112.95	9.09	4.25	673.06	478.09	134.02	11 31	5.05	775.01	524 79	154.32	14.63	5.82
	76	63	<u> </u>	457.42	400.31	91.09	7.06	3.42	531 47	450.30	105.82	9.20	3.00	604 69	494 94	120.41	11 76	4 54
	70	65	1	517.11	400.31	102.07	0.00	3.45	607.46	490.55	120.06	10.92	456	605.92	526.07	120.44	14.00	5.22
50	20	67	22500	517.11	420.23	116.29	11.05	4 20	692.70	500.70	127.02	12.99	4.30 5.20	706.07	520.37	159.30	17.00	5.02
	85	70	1	711 51	530.26	141 69	14 59	5.24	845.40	593.50	168 34	19.00	6.25	973.40	651.86	193.95	25.01	7.31
	76	62	<u> </u>	402.21	427.25	09.32	2.01	2.12	560 54	402.11	112 41	2.67	2.44	644 62	640.07	139.05	25.01	2.77
	70	65		455.51 556 A7	437.23	110.91	3.63	2 20	651.05	520.06	120.64	3.67	2.44	742 17	570.49	147.00	3.33 A 59	3.10
60	20	67	26250	621.07	\$01.07	125.66	2 20	2.33	744.60	562.00	149.30	3.39	2.19	955 70	617.16	170.41	4.30	3.13
	95	70		773.62	589.51	154.05	4.94	2.71	916.97	660.44	182 57	6.02	2.02	1055.60	724 19	210.30	7 70	4.52
	76	62	<u> </u>	628.60	552.00	125 17	3.97	2 70	728 20	622.27	145.02	5.02	3.95	876.62	682.76	164.60	6.40	3.55
	70	65		700.40	502.00	141.27	3.8/	2.70	921.00	666.20	165.65	6.47	3.12	020.03	720.10	180.42	7.50	3.33
70	20	67	32000	902 72	620.17	160.04	4.03	3.04	050.64	707.11	103.03	7.40	3.57	1002 12	730.18	217.67	0.67	4.08
	95	70		003.72	739 62	100.04	7.03	4.21	1162.02	926.70	221 70	10.94	4.08	1220.05	007.46	217.07	12 12	9.09
	65	/0	<u> </u>	960.19	738.03	195.18	6.92	4.21	070 42	020.78	104.02	2 10.84	4.99	1112.05	907.40	200.82	10.26	5./5
	70	65		052.28	790.00	107.72	0.80	3.3/	9/8.42	029.49	194.85	0.19	3.92	1200.05	911.35	221.04	12.30	4,40
80	/8	67	41500	1076 24	789.00	214.22	0.75	3.81	1275 46	020.15	252.00	10.45	4.48	1467.35	970.00	255.05	15.39	5.13
	80	0/	1	10/6.34	030.53	214.33	9.75	4.31	12/5.46	939.15	255.98	13.29	5.11	1407.35	1029.54	292.19	10.00	3.88
	65	70		1310.49	9/7.13	260.95	13.96	5.25	1556.91	1093.61	310.02	17.89	0.23	1/92.81	1201.15	336.99	25.13	1.18

Legend & Notes

- DB : dry bulb temperature, °F
- WB : wet bulb temperature, °F
- AFR : airflow rate

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- SCFM : unit of standard airflow rate at sea level where air density is 0.075 lb/ft3
- TC : total capacity in MBH
- SC : sensible capacity in MBH
- WFR : water flow rate, GPM
- WPD : water pressure drop , ft. of water
- VEL : water velocity, FPS FPI : number of fins per inch

5/8" tube, 6 Rows

model model <th< th=""><th></th><th>ON</th><th>COIL</th><th>AFR</th><th></th><th></th><th>1050</th><th></th><th></th><th></th><th></th><th>6ROWS</th><th></th><th></th><th></th><th></th><th>44501</th><th></th><th></th></th<>		ON	COIL	AFR			1050					6ROWS					44501		
matrix matrix<	MODEL (GD)		14/17		TC		10FPI	11/00	1/51	TC			14/00	1/51	TC		14FPI	14/00	1/51
1 1		DB	WB	SCFM		SC	WFR	WPD	VEL	TC	SC	WFR	WPD	VEL		SC	WFR	WPD	VEL
16 6.8 17 8.30 7.30 8.30 7.30		°F	°F		WRH	WRH	GPM	FT	FPS	MBH	WRH	GPM	FT	FPS	MBH	MBH	GPM	FT	FPS
25 7i 66 7i 7i 7i 7ii 7iii 7iii 7iii 7iii 7iii 7iiii 7iiii 7iiii 7iiii 7iiiii 7iiiii 7iiiiii 7iiiii 7iiiii 7iiiiii 7iiiiii 7iiiiii 7iiiiii 7iiiiii 7iiiiii 7iiiiii 7iiiiiiii 7iiiiii 7iiiiiiiii 7iiiiiiiii 7iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii		76	63	4	29.20	24.12	5.82	4.53	2.34	33.33	26.45	6.64	5.76	2.67	37.09	28.41	7.38	7.01	2.97
100 67 389 2.38 7.48 1.04 1.03 1.04 1.05 1.05 1.05 1.05 1.05 1.06 1.05 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.06 1.0	2.5	78	65	1125	33.59	25.74	6.69	5.85	2.69	38.61	28.27	7.69	7.54	3.09	42.97	30.36	8.56	9.18	3.44
185 7.0 -4.2 3.8 4.2.2 3.5.8 3.6.8 1.8.1 1.7.4 4.3.8 3.7.3 1.8.3<		80	67		38.59	27.35	7.68	7.54	3.09	44.39	30.02	8.84	9.74	3.55	49.44	32.32	9.84	9.90	3.96
10 63 33 73 <th73< th=""> 73 73 73<!--</th--><th></th><th>85</th><th>70</th><th></th><th>47.29</th><th>31.98</th><th>9.42</th><th>10.93</th><th>3.79</th><th>54.28</th><th>35.06</th><th>10.81</th><th>11.74</th><th>4.35</th><th>60.26</th><th>37.71</th><th>12.00</th><th>14.19</th><th>4.83</th></th73<>		85	70		47.29	31.98	9.42	10.93	3.79	54.28	35.06	10.81	11.74	4.35	60.26	37.71	12.00	14.19	4.83
4 75 612 716 73 74 73 <th73< th=""> 73 73 73<</th73<>		76	63		46.83	38.37	9.33	7.32	2.81	53.49	42.03	10.65	7.07	3.21	59.49	45.12	11.85	8.58	3.57
80 67 6.12 4.34 1.20 1.21 1.20 1.	4	78	65	1750	53.87	40.86	10.73	7.16	3.24	61.92	44.87	12.33	9.23	3.72	68.88	48.17	13.72	11.21	4.14
88 70 77 744 90.50 90.50 90.81		80	67		61.72	43.34	12.29	9.18	3.71	71.00	47.62	14.14	11.85	4.26	78.95	51.20	15.72	13.54	4.74
i i		85	70		75.44	50.58	15.02	9.18	4.53	86.46	55.42	17.22	15.97	5.19	95.81	59.58	19.08	19.25	5.75
6 78 6.6 791 81.24 61.41 18.19 91.8 70.9 18.76 73.1 72.66 73.1 73.00 23.03 40.05 23.3 93.8 23.0 93.8 23.0 93.8 23.0 93.8 73.0 <th73.0< th=""> 73.0 73.0 7</th73.0<>		76	63		69.71	58.92	13.88	9.18	1.67	80.12	65.18	15.95	2.46	1.92	90.15	70.59	17.95	3.05	2.17
80 67 67 64 63 70 16.73 80.19 32.2 19.27 10.27 62.7 63.7 73.7 <th>6</th> <th>78</th> <th>65</th> <th>2915</th> <th>81.24</th> <th>63.64</th> <th>16.18</th> <th>9.18</th> <th>1.95</th> <th>94.20</th> <th>70.34</th> <th>18.76</th> <th>3.31</th> <th>2.26</th> <th>105.12</th> <th>75.68</th> <th>20.93</th> <th>4.05</th> <th>2.53</th>	6	78	65	2915	81.24	63.64	16.18	9.18	1.95	94.20	70.34	18.76	3.31	2.26	105.12	75.68	20.93	4.05	2.53
85 70 - 11673 80.19 23.2 918 20.8 13.23 999 26.7 6.7 3.2 10.25 10.25 10.25 3.20 10.25 3.20 10.25 3.20 10.25 3.20 918 20.0 10.25 3.20 10.25 3.20 918 20.0 10.25 2.20 10.25 2.20 10.25 2.20 10.25 2.20 10.25 2.20 10.25 2.20 10.25	-	80	67		94.54	68.31	18.83	9.18	2.27	108.74	74.90	21.65	4.31	2.61	121.33	80.73	24.16	5.28	2.91
		85	70		116.73	80.19	23.24	9.18	2.80	134.23	87.99	26.73	6.37	3.22	149.25	94.61	29.72	6.43	3.59
P1 P3 6.5 P40 P405 P3.8 P4.7 P3.03 P4.7 P3.03 P3.8 P3.		76	63		109.54	89.81	21.81	9.18	2.63	125.03	98.35	24.90	6.68	3.00	139.02	105.56	27.68	6.97	3.34
B0 67 100 144.5 101.55 28.7 91.8 47 106.1 11.48 30.0 30.2 102.4 12.43 135.7 45.7 105.7 44.5 105.7 110.7 111.5 110.7 111.5 110.7 111.5 110.7 111.5 110.7 111.5 110.7 111.5 110.7 111.5 110.7 111.5 110.7 110.7 110.7 110.7 110.7 110.7 110.7 110.7 110.7 110.7 110.7 110.7	9	78	65	4105	126.09	95.71	25.11	9.18	3.03	144.79	105.03	28.83	7.51	3.48	160.99	112.72	32.06	9.12	3.87
isb isb <th></th> <th>80</th> <th>67</th> <th>4105</th> <th>144.55</th> <th>101.55</th> <th>28.78</th> <th>9.18</th> <th>3.47</th> <th>166.11</th> <th>111.49</th> <th>33.08</th> <th>9.65</th> <th>3.99</th> <th>184.67</th> <th>119.87</th> <th>36.77</th> <th>10.56</th> <th>4.44</th>		80	67	4105	144.55	101.55	28.78	9.18	3.47	166.11	111.49	33.08	9.65	3.99	184.67	119.87	36.77	10.56	4.44
12 16 63 143.64 11.95 18.04 19.94 18.06 75.27 7.91 81.77 83.37 7.92 33.7 7.93 <th7.93< th=""> 7.93 7.93 <</th7.93<>		85	70		176.81	118.59	35.21	9.18	4.25	176.81	118.59	35.21	10.82	4.25	224.31	139.56	44.67	15.04	5.39
12 78 65 70 75.2 72.9 9.18 3.05 19.89 17.1 5.1 17.10 14.82 14.80 8.71 3.90 65 70		76	63		143.64	117.95	28.60	9.18	2.65	164.07	129.28	32.67	6.52	3.03	182.46	138.77	36.33	7.92	3.37
no	12	78	65	5415	165.28	125.72	32.91	9.18	3.05	189.94	138.06	37.82	7.17	3.51	211.30	148.20	42.08	8.71	3.90
88 70 231.73 155.76 64.14 9.18 428 265.71 170.68 54.91 132.3 49.1 294.58 185.05 186.0 140.0 140.0 76 65 77 65 78 65 78 65 78 65 78 65 78 65 78 65 78 65 78 65 78 65 78 65 78 65 78 78 65 78 78 65 78 <	12	80	67	5415	189.50	133.40	37.73	9.18	3.50	217.92	146.50	43.39	9.21	4.03	242.45	157.60	48.28	11.19	4.48
16 63 76 63 76 63 76 63 76 77 76 77<		85	70		231.73	155.76	46.14	9.18	4.28	265.71	170.68	52.91	13.23	4.91	294.58	183.51	58.66	15.96	5.44
Pic Pic <th></th> <th>76</th> <th>63</th> <th></th> <th>195.16</th> <th>158.33</th> <th>38.86</th> <th>9.18</th> <th>3.61</th> <th>223.21</th> <th>173.24</th> <th>44.45</th> <th>11.57</th> <th>4.12</th> <th>248.22</th> <th>186.02</th> <th>49.43</th> <th>14.03</th> <th>4.59</th>		76	63		195.16	158.33	38.86	9.18	3.61	223.21	173.24	44.45	11.57	4.12	248.22	186.02	49.43	14.03	4.59
B0 67 78-	16	78	65	7040	224.43	168.30	44.69	9.18	4.15	257.66	184.60	51.31	15.02	4.76	286.49	198.24	57.05	18.22	5.29
85 70 31.24 207.36 63.12 9.78 37.45 221.7 71.8 25.95 63.13 92.40 78.71<	10	80	67	/040	256.72	178.23	51.12	9.18	4.74	295.07	195.89	58.76	19.22	5.45	327.24	210.40	65.16	22.10	6.05
76 63 78 65 78 65 78 65 70 58.4 91.8 41.6 38.6 91.48 47.6 37.6 52.7 47.8 57.7 57.7 57.7 57.7 47.8 70.7 57.7 57.7 47.8 70.7 57.7 47.8 70.7 57.7 47.8 70.7 57.7 47.8 70.7 57.7 47.8 70.7 57.7 47.7 57.7 47.7 57.7 47.7 57.7 47.7 57.7 47.7 57.7 47.7 57.7 47.7 57.7 47.7 57.7 47.7 57.7 47.7 57.7		85	70		312.24	207.26	62.18	9.18	5.77	357.45	227.17	71.18	25.95	6.61	395.29	244.01	78.71	31.15	7.31
78 65 929 233.6 220.7 58.4 9.18 4.14 37.6 23.6 7.5 17.77 5.7 17.77 17		76	63		255.22	207.05	50.82	9.18	3.61	291.87	226.52	58.12	12.29	4.12	324.56	243.22	64.63	13.72	4.59
80 67 944 335,0 233,6 66,85 9.18 4/4 379,2 234,6 7,537 47,8 27,11 8,5,0 2,2,0 65,0 17,7 5,77 47,8 27,10 8,3,0 9,18 5,77 467,42 27,70 68,4 6,14 3,0 38,10 12,00 30,8 30,8 7,76 6,53 17,77 8,02 37,0 45,71 31,77 8,75 9,01 4,15 4,76 35,77 8,00 47,77 8,02 37,00 8,02 37,00 8,02 37,00 8,02 37,00 8,02 37,00 8,02 37,00 37,01 41,15 41,16 31,19 8,00 37,00	20	78	65	0.205	293.47	220.07	58.44	9.18	4.15	336.94	241.38	67.09	14.68	4.76	374.61	259.21	74.59	17.80	5.29
35 70 40.8 7.7 47.42 27.05 30.7 28.8 6.61 51.89 31.07 10.2.3 30.30 30.38 7.30 78 655 70 48.7 27.07 83.04 21.0 38.1 61.3 31.07 10.2.3 38.10 10.2.3 30.30 45.5 70 855 70 48.7 27.46 3.8 45.9 30.31 11.3 13.6 47.2 39.8 13.17 10.7.5 13.4 71.6 74.6 73.6 74.6 73.6 74.6 73.6 74.6 73.6 74.6 73.6 74.6 73.6 74.7 74.6 73.6 74.6 73.6 74.6 73.6 74.6 73.6 73.6 74.6 73.7 <th< th=""><th>20</th><th>80</th><th>67</th><th>9205</th><th>335.70</th><th>233.06</th><th>66.85</th><th>9.18</th><th>4.74</th><th>379.92</th><th>253.46</th><th>75.65</th><th>17.77</th><th>5.37</th><th>427.89</th><th>275.11</th><th>85.20</th><th>22.67</th><th>6.05</th></th<>	20	80	67	9205	335.70	233.06	66.85	9.18	4.74	379.92	253.46	75.65	17.77	5.37	427.89	275.11	85.20	22.67	6.05
76 63 388.0 28.0 348.7 28.0 348.7 27.07 68.94 6.14 3.00 385.10 292.08 76.68 7.46 5.5 80 67 399.61 280.60 79.7 30.21 37.00 48.57.1 311.77 88.73 9.01 4.51 80 67 399.61 280.60 79.72 9.18 4.51 55.00 38.21 111.43 13.64 51.7 80.75 12.04 16.44 5.73 90 65 70 48.92 37.40 97.22 91.8 8.70 90.83.71 11.143 13.64 51.7 62.06 38.44 90.54 5.5 5.6 5.7		85	70	1	408.29	271.01	81.30	9.18	5.77	467.42	297.05	93.07	25.81	6.61	516.89	319.07	102.93	30.98	7.30
134 78 65 1134 348.74 264.52 69.44 9.18 3.22 400.71 99.70 8.02 37.0 445.71 311.77 88.75 90.01 4.12 385 70 488.22 37.40 97.22 91.8 45.5 55.00 38.11 11.14 13.64 5.71 6.00 83.61 14.72 14.94 91.8 55.960 38.81 11.14 13.64 51.90 38.14 10.00 38.61 14.71 31.99 91.8 3.78 542.00 33.38 10.99 10.21 45.68 34.44 90.54 34.60 37.79 52.61 36.76 10.477 9.9 4.21 80 67 63 47.16 38.38 9.18 3.9 84.63 37.24 10.48 48.39 10.31 4.00 5.29 31.31 45.46 10.20 12.8 4.83 76 63 76 63 77.8 97.89 11.14 12.24		76	63		303.04	248.31	60.34	9.18	2.80	346.21	272.07	68.94	6.14	3.20	385.10	292.08	76.68	7.46	3.56
24 80 67 113.0 396,1 280,6 79,57 9,18 3,69 308,18 91,50 95,2 42,5 510,38 31,42 10,17 11,56 47,7 85 70 488,2 37,74 97,22 9,18 4,51 559,60 358,71 111,43 13,64 5,17 60,06 85,61 123,47 16,44 5,73 30 77 65 5 337,73 9,28 7,124 9,18 3,73 10,78 10,55 43,46 63,73 10,95 43,46 10,57 10,95 43,4 10,56 43,47 10,95 43,43 10,76 10,33 10,76 10,37 10,06 12,37 14,48 10,18 31,44 40,18 5,43 10,55 43,45 12,37 14,48 14,18 14,18 14,41 44,48 5,22,9 43,18 11,14 14,14 44,48 12,259 13,18 11,14 14,14 44,48 14,172 13,14	24	78	65	11220	348.74	264.52	69.44	9.18	3.22	400.71	290.42	79.79	8.02	3.70	445.71	311.77	88.75	9.01	4.12
85 70 48.22 327.0 97.22 91.8 4.51 556.0 358.71 11.43 13.64 51.7 62.00 83.61 12.47 16.44 57.3 76 63 357.7 29.28 71.24 91.8 2.87 400.75 320.88 81.39 6.30 32.7 45.68 34.47 90.54 7.65 36.61 80 67 330.7 29.28 71.24 91.8 3.30 47.00 32.08 81.39 63.0 32.7 45.66 30.47 90.5 42.1 85 70 76 63 76 63 78 57.66 38.09 11.41 11.44 4.18 4.18 4.23 4.23.0 43.33 42.20 131.45 14.46 62.25 73.13 45.44 17.3 13.4 4.34 13.3 4.32 131.45 14.41 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 <th>24</th> <th>80</th> <th>67</th> <th>11350</th> <th>399.61</th> <th>280.60</th> <th>79.57</th> <th>9.18</th> <th>3.69</th> <th>459.49</th> <th>308.18</th> <th>91.50</th> <th>9.52</th> <th>4.25</th> <th>510.98</th> <th>331.42</th> <th>101.75</th> <th>11.56</th> <th>4.72</th>	24	80	67	11350	399.61	280.60	79.57	9.18	3.69	459.49	308.18	91.50	9.52	4.25	510.98	331.42	101.75	11.56	4.72
90 76 63 37.78 92.89 71.24 91.8 2.87 408.75 32.08 81.39 6.30 3.27 45.66 34.47 90.54 7.65 3.64 80 67 76 63 766 30.83 93.91 9.18 3.0 473.00 363.38 107.98 10.55 4.34 60.29 390.74 120.06 12.81 43.13 36 76 63 766 38.89 91.14 91.8 4.61 660.13 42.20 131.45 14.09 5.29 731.31 454.46 145.22 1.16.4 4.32 76 63 76 565.3 70.0 91.8 3.09 595.88 31.11 1.14.4 14.82 12.44 4.46 62.59 31.13.1 1.14.8 42.55 43.18 1.13.1 43.18 1.13.3 1.14.3 43.25 43.18 1.13.1 43.18 1.13.1 43.18 43.17 1.13.8 43.18 1.11.3 43		85	70]	488.22	327.40	97.22	9.18	4.51	559.60	358.71	111.43	13.64	5.17	620.06	385.61	123.47	16.44	5.73
30 78 65 1339 41.72 31.94 81.98 9.18 3.0 473.00 342.42 94.19 8.22 3.79 526.16 367.63 10.47 9.99 4.21 80 670 670 576.6 385.9 107.9 10.55 4.44 106.29 390.4 10.06 12.88 4.83 78 655 70 676 63 70.8 655.3 97.08 10.8 3.90 559.88 402.13 11.49 12.44 4.48 62.55 43.82 11.08 3.90 559.88 402.13 11.44 4.48 62.55 43.82 11.08 1.00 10.8 10.80 <th< th=""><th></th><th>76</th><th>63</th><th></th><th>357.78</th><th>292.89</th><th>71.24</th><th>9.18</th><th>2.87</th><th>408.75</th><th>320.88</th><th>81.39</th><th>6.30</th><th>3.27</th><th>454.68</th><th>344.47</th><th>90.54</th><th>7.65</th><th>3.64</th></th<>		76	63		357.78	292.89	71.24	9.18	2.87	408.75	320.88	81.39	6.30	3.27	454.68	344.47	90.54	7.65	3.64
30 67 15.37 471.60 30.83 9.91 9.18 3.78 542.30 653.8 10.79 10.55 4.34 602.96 39.07 120.06 12.81 4.83 85 70 576.06 380.89 11.47 9.18 4.61 660.13 32.28 131.45 14.09 5.29 73.13 454.40 145.20 16.97 5.66 76 653 70 544.73 84.83 9.18 3.39 486.01 31.47 17.40 50.50 55.6 43.72 45.50 55.6 35.78 38.38 111.09 9.18 4.47 47.28 42.74 12.76 14.8 14.27 18.08 10.3 3.88 646.85 466.1 13.30 4.47 47.55 53.20 17.10 48.84 11.13 4.32 76 63 70 585.15 43.991 116.52 9.18 3.90 67.12 13.82 11.20 4.84 57.0 53.00 7	20	78	65	12220	411.72	311.94	81.98	9.18	3.30	473.00	342.42	94.19	8.22	3.79	526.16	367.63	104.77	9.99	4.21
85 70 576.06 385.90 114.71 9.18 4.61 660.13 422.80 131.45 14.09 5.29 731.31 454.40 145.62 16.07 5.86 76 635 778 655 778 778 655 778 778 788 778 788 788 778 788 788 778 788 788 778 788 788 778 788 788 778 788 788 778 788 788 778 788 788 778 788 788 778 788 788 778 788 789 788 788 788 788 788 788 788 788 788 788 788 788 788 788 788 <t< th=""><th>50</th><th>80</th><th>67</th><th>13330</th><th>471.60</th><th>330.83</th><th>93.91</th><th>9.18</th><th>3.78</th><th>542.30</th><th>363.38</th><th>107.98</th><th>10.55</th><th>4.34</th><th>602.96</th><th>390.74</th><th>120.06</th><th>12.81</th><th>4.83</th></t<>	50	80	67	13330	471.60	330.83	93.91	9.18	3.78	542.30	363.38	107.98	10.55	4.34	602.96	390.74	120.06	12.81	4.83
35 76 63 78 65 3.8 53.8.5 40.5.5 1.1.2 1.1.6 4.3.2 35 78 65 78 65 70 43.5.5 366.5.3 97.08 9.18 3.90 559.8.8 402.13 11.1.4 12.44 4.48 62.259 431.82 12.3.97 14.18 4.99 40 85 70 67.5 63.3 70.8 53.8.8 11.09 5.14 71.17.0 458.4 14.7.1 13.08 5.70 53.1.0 171.30 58.6 14.14 4.99 76 633 70 508.53 13.17 10.12.6 9.18 3.90 671.95 482.71 115.81 10.03 3.88 646.85 486.13 12.80 11.13 4.32 76 63 50.5 640.50 13.3.1 9.18 4.37 69.44 183.89 20.86 6.23 103.28 18.22 18.20 18.24 46.5.5 13.81 11.00		85	70		576.06	385.90	114.71	9.18	4.61	660.13	422.80	131.45	14.09	5.29	731.31	454.46	145.62	16.97	5.86
35 78 65 15415 487.55 366.53 97.08 9.18 3.90 559.88 402.13 11.49 12.44 4.48 622.59 431.82 12.397 14.18 4.99 80 677 557.89 388.35 11.09 9.18 4.47 641.28 426.74 12.69 14.56 5.14 71.10 458.46 14.72 18.08 5.70 400 673 655 453.70 135.26 9.18 3.90 581.61 452.74 15.81 10.30 38.8 646.85 486.13 12.80 11.13 43.23 400 677 655 553.15 439.91 16.52 9.18 3.90 671.95 482.67 133.80 11.93 44.47 44.99 50 76 63 655 153.91 10.20 10.20 9.18 9.00 512.1 135.80 10.23 633.91 10.21 13.20 10.23 10.23 10.23 10.23		76	63		423.76	344.74	84.38	9.18	3.39	484.63	377.24	96.50	9.56	3.88	538.95	405.05	107.32	11.60	4.32
53 80 67 1517 57.89 388.35 11.09 9.18 4.47 641.28 426.74 127.69 14.96 5.4 71.10 458.46 14.72 18.08 5.70 85 70 679.26 451.90 135.26 9.18 5.44 77.87 495.20 158.89 12.6 6.33 860.57 532.10 171.36 25.54 6.39 40 78 655 70 585.15 439.91 116.52 9.18 50.05 51.22 14.87 14.47 9.99 80 677 635 700 609.04 460.53 9.18 9.18 9.35 59.41 18.89 20.98 6.23 103.22 638.59 20.50 22.1 6.89 3.89 6.91 3.81 1.10 4.80 7.91 3.94 3.91 3.91 3.91 3.91 3.91 3.91 3.91 3.91 3.91 3.91 3.91 3.91 3.91 3.91 <	25	78	65	15415	487.55	366.53	97.08	9.18	3.90	559.88	402.13	111.49	12.44	4.48	622.59	431.82	123.97	14.18	4.99
8870679.6679.6451.90138.269.185.4477.87495.29154.8921.266.23860.75532.10171.3625.546.897663.37663.3585.1543.91101.269.183.39581.61452.74115.8110.033.88646.85486.13128.8011.134.328067585.1543.90116.529.183.90671.95482.62133.80133.5215.275.14850.55585.1614.9910.07138.465.7080677665.7665.70482.91116.529.183.05696.34545.07138.657.123.48771.55585.16154.248.653.8870778663770701.29527.37139.649.183.05696.34545.07138.667.123.49774.1585.16154.248.653.8880677771.79676633770771.79597.8160.47938.5160.41938.5160.419.294.03101.26103.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.4113.75513.	35	80	67	15415	557.89	388.35	111.09	9.18	4.47	641.28	426.74	127.69	14.96	5.14	711.70	458.46	141.72	18.08	5.70
40 76 63 78 65 413.71 101.26 9.18 3.90 581.61 452.74 115.81 10.03 3.88 646.85 486.13 12.80 11.13 4.32 78 655 455.15 439.91 116.52 9.18 3.90 671.95 482.62 133.80 11.93 4.48 747.15 513.22 148.78 14.47 4.99 85 700 663 466.05 133.31 9.18 5.44 933.53 594.41 158.25 15.27 51.4 854.09 550.16 15.02 18.46 5.00 76 63 70 671.95 51.81 160.41 92.95 584.41 18.50 10.22 13.49 10.12 3.49 774.1 585.16 154.4 13.57 51.3 76 63 70 711.00 580.65 141.8 10.22 717.18 223.48 15.99 16.21 124.26 777.2 288.0 138.3		85	70		679.26	451.90	135.26	9.18	5.44	777.87	495.29	154.89	21.26	6.23	860.57	532.10	171.36	25.54	6.89
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		76	63		508.53	413.71	101.26	9.18	3.39	581.61	452.74	115.81	10.03	3.88	646.85	486.13	128.80	11.13	4.32
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	10	78	65	18500	585.15	439.91	116.52	9.18	3.90	671.95	482.62	133.80	11.93	4.48	747.15	518.22	148.78	14.47	4.99
85 70 815.0 542.34 162.33 9.18 5.44 933.53 594.41 185.89 20.8 6.23 1032.82 638.59 205.66 25.21 6.89 76 633 778 655 700 920.9 4.03 50.56 581.39 160.41 9.29 4.03 895.91 624.21 178.40 10.61 4.48 800 677 653 701.9 529.73 139.64 9.18 3.51 805.56 581.39 160.41 9.29 4.03 895.91 624.21 178.40 10.61 4.48 800 677 653 700 929.56 654.47 195.05 91.8 4.00 102.23 117.10 83.81 11.00 4.62 103.84 143.81 90.371 663.17 70.74 247.45 10.85 10.83 103.93 83.61 161.77 7.43 3.49 903.71 682.69 208.40 4.88 60 670 780	-+0	80	67	10500	669.50	466.05	133.31	9.18	4.47	769.60	512.14	153.25	15.27	5.14	854.09	550.19	170.07	18.46	5.70
50 63 76 63 78 65 78 65 701 97		85	70		815.20	542.34	162.33	9.18	5.44	933.53	594.41	185.89	20.98	6.23	1032.82	638.59	205.66	25.21	6.89
50 78 65 2250 70.29 52.97.3 139.64 9.18 3.51 805.56 581.39 16.04 9.29 4.03 895.91 624.21 178.00 10.61 4.48 800 670 902.77 561.64 159.85 9.18 4.02 923.08 616.99 183.81 11.00 4.62 1025.71 663.17 204.24 135.7 51.33 660 707 67.63 707 70.74 20.77 56.14 195.05 141.8 9.18 3.05 81.20 161.77 7.43 3.99 90.371 682.69 17.95 8.32 3.83 660 67 97.56 65.47 161.02 161.27 17.81 8.34 104.57 7.82.6 2.81.4 10.84 4.84 680 670 96.52 165.26 161.57 162.9 104.57 12.82 13.86 13.86 13.86 13.86 13.86 13.86 13.86 14.85 14.86 </th <th></th> <th>76</th> <th>63</th> <th></th> <th>609.40</th> <th>497.68</th> <th>121.35</th> <th>9.18</th> <th>3.05</th> <th>696.34</th> <th>545.07</th> <th>138.66</th> <th>7.12</th> <th>3.49</th> <th>774.61</th> <th>585.16</th> <th>154.24</th> <th>8.65</th> <th>3.88</th>		76	63		609.40	497.68	121.35	9.18	3.05	696.34	545.07	138.66	7.12	3.49	774.61	585.16	154.24	8.65	3.88
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	50	78	65	22500	701.29	529.73	139.64	9.18	3.51	805.56	581.39	160.41	9.29	4.03	895.91	624.21	178.40	10.61	4.48
85 70 97.56 65.47 195.0 9.18 4.90 122.32 71.18 23.48 15.99 5.62 124.69 70.74 247.45 19.50 6.22 66 776 633 776 633 771.00 580.56 141.58 9.18 3.05 812.40 635.92 161.77 7.43 3.49 903.71 682.69 70.74 247.45 3.83 660 677 663 706 663 667 96.55 163.50 161.27 17.18 23.48 14.54 14.54 14.52 17.372 23.80 13.83 13.83 70 673 673 673 673 673 100.7 77.72 23.80 13.83 13.83 70 673 673 673 673 673 102.57 763.8 97.43 17.83 97.83 97.83 97.83 97.83 97.83 97.83 97.83 97.83 97.83 97.83 97.83	50	80	67	22500	802.77	561.64	159.85	9.18	4.02	923.08	616.99	183.81	11.20	4.62	1025.71	663.17	204.24	13.57	5.13
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		85	70		979.56	654.47	195.05	9.18	4.90	1122.32	717.18	223.48	15.99	5.62	1242.69	770.74	247.45	19.25	6.22
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		76	63		711.00	580.65	141.58	9.18	3.05	812.40	635.92	161.77	7.43	3.49	903.71	682.69	179.95	8.32	3.88
	60	78	65	26250	818.17	618.02	162.92	9.18	3.51	939.84	678.30	187.15	8.93	4.03	1045.27	728.26	208.14	10.84	4.48
	00	80	67	20250	936.59	655.26	186.50	9.18	4.02	1076.96	719.84	214.45	11.45	4.62	1196.72	773.72	238.30	13.88	5.13
76 63 895.69 724.38 178.35 9.18 3.84 1024.12 792.28 20.39 12.26 4.39 1138.69 850.71 226.74 14.87 4.89 78 655 32000 1029.25 769.66 204.95 9.18 4.42 1181.36 843.97 235.24 15.90 5.07 131.36 906.25 261.46 19.27 5.63 800 67 1177.13 814.76 234.40 9.18 5.05 1352.37 895.37 269.29 19.41 5.80 1498.74 961.52 298.44 23.39 6.33 805 700 1429.96 946.74 284.74 9.18 6.13 1636.39 1037.75 325.85 27.43 7.02 180.49 1114.36 360.12 32.89 7.65 800 67 1121.93 916.9 223.40 9.18 3.45 1483.55 107.10 245.31 142.59 140.39 36.31 36.35 17.65 36.		85	70		1142.81	763.54	227.56	9.18	4.90	1309.38	836.71	260.73	16.35	5.62	1449.82	899.20	288.70	18.63	6.22
78 65 32000 1029.25 769.66 204.95 9.18 4.42 1181.36 843.97 235.24 15.90 5.07 131.30 906.25 261.46 19.27 5.63 80 67 1177.13 814.76 234.40 9.18 5.05 1352.37 895.37 269.29 19.41 5.80 1498.74 961.52 298.44 23.39 6.33 85 70 1429.96 946.74 284.74 9.18 6.63 1636.39 1037.75 325.85 27.43 7.02 1808.49 114.36 360.12 32.89 7.66 76 63 1121.93 916.69 223.40 9.18 2.99 1281.68 1003.96 255.21 7.06 3.42 1425.80 107.77.8 283.91 7.55 3.81 78 65 1478.20 1034.74 294.35 9.18 3.45 1483.05 17.02 295.31 8.11 3.96 1649.35 121.74 36.00 14.40		76	63		895.69	724.38	178.35	9.18	3.84	1024.12	792.28	203.93	12.26	4.39	1138.69	850.71	226.74	14.87	4.89
No 80 67 52000 1177.13 814.76 234.00 9.18 5.05 1352.37 895.37 269.29 19.41 5.80 1498.74 961.52 298.44 23.39 6.43 85 70 1429.96 946.74 284.74 9.18 6.13 1636.39 1037.75 325.85 27.43 7.02 1808.49 1114.36 360.12 32.89 7.65 76 63 1121.93 916.69 223.40 9.18 2.99 1281.68 1003.96 255.21 7.06 3.42 1425.80 107.77.8 283.91 7.55 3.81 78 65 1291.09 975.84 257.09 9.18 3.45 1483.05 1071.02 295.31 8.11 3.96 1649.35 1149.85 328.43 9.84 4.40 80 67 1478.20 1034.74 294.35 9.18 3.45 1483.05 137.10 38.43 10.40 39.44 4.40 835	70	78	65	22000	1029.25	769.66	204.95	9.18	4.42	1181.36	843.97	235.24	15.90	5.07	1313.06	906.25	261.46	19.27	5.63
85 70 1429.96 946.74 284.74 9.18 6.13 1636.39 1037.75 325.85 27.43 7.02 1808.49 111.43 360.12 32.89 7.76 80 63 63 2.39 2.81.8 103.75 325.85 27.43 7.02 1808.49 114.36 360.12 32.89 7.76 80 63 1121.93 916.95 223.40 9.18 2.99 1281.68 1003.96 255.21 7.06 3.42 1425.80 107.78 28.39 7.55 3.81 780 655 1291.09 975.84 257.09 9.18 3.45 1483.05 107.02 29.51 8.11 3.69 149.85 328.43 9.84 4.40 800 677 1478.20 103.47 29.45 9.18 3.45 149.85 136.43 149.85 149.85 149.85 149.85 149.85 149.85 149.85 149.85 149.85 149.85 149.85 149.85 </th <th>/0</th> <th>80</th> <th>67</th> <th>32000</th> <th>1177.13</th> <th>814.76</th> <th>234.40</th> <th>9.18</th> <th>5.05</th> <th>1352.37</th> <th>895.37</th> <th>269.29</th> <th>19.41</th> <th>5.80</th> <th>1498.74</th> <th>961.52</th> <th>298.44</th> <th>23.39</th> <th>6.43</th>	/0	80	67	32000	1177.13	814.76	234.40	9.18	5.05	1352.37	895.37	269.29	19.41	5.80	1498.74	961.52	298.44	23.39	6.43
80 663 1121.93 916.95 223.40 9.18 2.99 1281.68 1003.96 255.21 7.06 3.42 1425.80 107.78 283.91 7.55 3.81 78 655 1291.09 975.84 257.09 9.18 3.45 1483.05 1071.02 295.31 8.11 3.96 1649.35 149.85 328.43 9.84 4.40 80 67 1478.20 103.47 294.35 9.18 3.95 1699.57 136.60 338.43 1.040 4.54 1888.73 1221.74 376.09 12.60 5.04 85 70 1804.21 1206.04 359.26 9.18 4.82 2067.07 1321.49 41.61 14.86 5.52 228.92 1420.20 455.78 17.89 6.11		85	70	1	1429.96	946.74	284.74	9.18	6.13	1636.39	1037.75	325.85	27.43	7.02	1808.49	1114.36	360.12	32.89	7.76
78 65 1291.09 975.84 257.09 9.18 3.45 1483.05 1071.02 295.31 8.11 3.96 1649.35 1149.85 328.43 9.84 4.40 80 67 1478.20 1034.74 294.35 9.18 3.95 1699.57 1136.60 338.43 1.040 4.54 1888.73 1221.74 376.09 12.60 3.04 85 70 1804.21 1206.04 359.26 9.18 4.82 2067.07 1321.49 41.61 14.86 5.52 228.92 1420.20 455.78 17.89 6.11		76	63		1121.93	916.69	223.40	9.18	2.99	1281.68	1003.96	255.21	7.06	3.42	1425.80	1077.78	283.91	7.55	3.81
80 67 41500 1478.20 1034.74 294.35 9.18 3.95 1699.57 1136.60 338.43 10.40 4.54 1888.73 1221.74 376.09 12.60 5.04 85 70 1804.21 1206.04 359.26 9.18 4.82 2067.07 1321.49 41.161 14.86 5.52 228.92 1420.20 455.78 17.89 6.11		78	65	41500	1291.09	975.84	257.09	9.18	3.45	1483.05	1071.02	295.31	8.11	3.96	1649.35	1149.85	328.43	9.84	4.40
85 70 1804.21 1206.04 359.26 9.18 4.82 2067.07 1321.49 411.61 14.86 5.52 2288.92 1420.20 455.78 17.89 6.11	80	80	67	41500	1478.20	1034.74	294.35	9.18	3.95	1699.57	1136.60	338.43	10.40	4.54	1888.73	1221.74	376.09	12.60	5.04
		85	70]	1804.21	1206.04	359.26	9.18	4.82	2067.07	1321.49	411.61	14.86	5.52	2288.92	1420.20	455.78	17.89	6.11

Legend & Notes

- DB : dry bulb temperature, °F
- WB : wet bulb temperature, °F
- AFR : airflow rate
- SCFM : unit of standard airflow rate at sea level where air density is 0.075 lb/ft3
- TC : total capacity in MBH
- SC : sensible capacity in MBH
- WFR : water flow rate, GPM
- WPD : water pressure drop , ft. of water
- VEL : water velocity, FPS
- FPI : number of fins per inch

5/8" tube, 8 Rows

	ON	COIL	AFR			1050					1250					1/1501		
MODEL (GD)		W/P		тс	50	10FPI	W/PD	VEL	тс	50	12FPI	WPD	VEI	тс	50	14FP1	WPD	VEL
	00 °E	°E	SCFM	MBH	MBH	GPM	FT	EDS	MBH	MBH	GPM	FT	EDS	MBH	MBH	GPM	FT	EDS
	76	63		36.95	28.34	7.36	8 73	2.96	A1 32	30.55	9.23	10.70	3 21	44.97	32.30	8 02	12.44	3 50
	78	65		42.63	30.20	8.49	11 33	3.41	47.65	32.58	9.49	13.88	3.82	51.67	34.49	10.29	13.96	4 14
2.5	80	67	1125	48.86	32.06	9.73	12.62	3.91	54.39	34.58	10.83	15.32	4.36	58.82	36.65	11.71	17.66	4.71
	85	70		59.20	37.23	11.79	17.87	4.74	65.65	40.11	13.07	21.55	5.26	70.73	42.47	14.08	24.68	5.66
	76	63		58.77	44.75	11.70	10.83	3.53	65.73	48.26	13.09	13.27	3.95	71.23	50.96	14.18	15.36	4.28
	78	65		67.79	47.66	13.50	14.04	4.07	75.67	51.41	15.07	17.14	4.54	81.85	54.36	16.30	18.87	4.92
4	80	67	1750	77.52	50.55	15.44	17.91	4.66	86.19	54.52	17.16	20.73	5.18	92.98	57.71	18.51	23.78	5.58
	85	70		93.63	58.61	18.64	24.08	5.62	103.69	63.11	20.65	28.98	6.23	111.51	66.75	22.20	33.07	6.70
	76	63		95.34	73.22	18.98	6.78	2.86	106.63	78.95	21.23	8.32	3.20	115.81	83.49	23.06	9.67	3.48
	78	65		110.07	78.07	21.92	8.82	3.31	123.03	84.20	24.50	10.80	3.69	133.44	89.16	26.57	12.53	4.01
6	80	67	2915	126.17	82.88	25.12	11.31	3.79	140.50	89.41	27.98	12.60	4.22	151.93	94.74	30.25	14.52	4.56
	85	70		152.93	96.26	30.45	14.70	4.59	169.65	103.72	33.78	17.75	5.09	182.82	109.83	36.40	20.34	5.49
	76	63		137.69	104.87	27.42	8.73	3.31	153.86	113.04	30.64	10.68	3.70	166.69	119.34	33.19	12.36	4.00
	78	65	4105	158.84	111.72	31.63	11.32	3.82	177.20	120.46	35.28	13.82	4.26	191.67	127.36	38.17	14.70	4.60
9	80	67	4105	181.74	118.54	36.19	14.47	4.37	201.91	127.77	40.20	16.15	4.85	217.80	135.22	43.37	18.54	5.23
	85	70		219.63	137.48	43.73	18.82	5.28	243.11	147.98	48.41	22.63	5.84	261.40	156.50	52.05	25.82	6.28
	76	63		180.69	137.85	35.98	9.69	3.34	202.08	148.67	40.24	10.37	3.73	219.07	157.03	43.62	12.00	4.05
13	78	65	5/15	208.44	146.86	41.51	10.97	3.85	232.76	158.43	46.35	13.40	4.30	251.97	167.59	50.17	15.48	4.66
12	80	67	5415	238.53	155.82	47.50	14.01	4.41	265.28	168.05	52.82	17.00	4.90	286.37	177.93	57.02	19.54	5.29
	85	70		288.33	180.74	57.41	19.78	5.33	319.45	194.63	63.61	22.78	5.90	343.74	205.95	68.45	26.02	6.35
	76	63		234.74	179.14	46.74	8.30	3.32	262.52	193.18	52.27	10.18	3.71	284.63	204.06	56.68	11.79	4.02
16	78	65	7040	270.76	190.83	53.92	10.77	3.83	302.39	205.87	60.21	13.17	4.27	327.37	217.77	65.19	14.12	4.63
10	80	67	7040	309.87	202.48	61.70	12.78	4.38	344.64	218.37	68.63	15.51	4.87	372.11	231.24	74.10	17.83	5.26
	85	70		374.62	234.86	74.60	18.04	5.29	415.08	252.93	82.65	21.74	5.87	446.71	267.66	88.95	24.17	6.31
	76	63		299.58	230.45	59.65	6.22	2.77	335.20	248.54	66.75	6.37	3.10	364.10	262.85	72.50	7.41	3.36
20	78	65	9205	346.05	245.79	68.91	6.76	3.20	386.89	265.11	77.04	8.28	3.57	419.75	280.78	83.58	9.61	3.88
	80	67	5205	390.91	258.39	77.84	8.22	3.61	441.95	281.53	88.00	9.83	4.08	478.12	298.41	95.21	11.35	4.42
	85	70		481.24	303.22	95.83	11.48	4.45	533.99	326.74	106.33	13.88	4.93	575.65	346.02	114.63	15.91	5.32
	76	63		380.50	289.69	75.77	9.30	3.52	425.47	312.42	84.72	11.40	3.93	460.99	329.84	91.79	12.41	4.26
24	78	65	11330	438.72	308.49	87.36	11.34	4.05	489.76	332.79	97.52	13.86	4.53	529.89	351.93	105.51	15.99	4.90
	80	67		501.76	327.24	99.91	14.48	4.64	557.86	352.93	111.08	17.55	5.15	601.90	373.58	119.85	20.15	5.56
	85	70		598.19	375.85	119.11	19.39	5.53	671.24	408.54	133.66	23.61	6.20	721.91	432.16	143.75	26.94	6.67
	76	63		444.85	339.38	88.58	8.02	3.34	497.47	365.99	99.06	9.84	3.73	539.30	386.55	107.39	11.40	4.05
30	78	65	13330	513.13	361.53	102.18	10.41	3.85	572.98	389.99	114.09	12.73	4.30	620.27	412.54	123.51	13.79	4.66
	80	67		587.13	383.57	116.91	13.31	4.41	653.05	413.70	130.04	15.15	4.90	704.98	438.03	140.38	17.41	5.29
	85	70		709.81	444.93	141.34	17.62	5.33	786.38	479.12	156.59	21.23	5.90	846.22	506.99	168.50	24.26	6.35
	76	63		508.51	389.41	101.26	6.61	3.05	568.84	419.98	113.27	8.12	3.42	617.22	443.85	122.90	8.52	3.71
35	78	65	15415	586.90	415.07	116.87	8.60	3.52	655.76	447.74	130.58	9.52	3.94	710.62	4/3.8/	141.50	11.02	4.27
	80	67		672.26	440.55	133.86	9.96	4.04	748.14	475.15	148.97	12.10	4.49	808.54	503.39	161.00	13.94	4.86
	85	/0		813.90	511.38	162.07	14.10	4.89	902.34	550.85	179.68	16.38	5.42	9/1.94	583.19	193.54	18.74	5.84
	70	65		704.20	407.34	140.24	6.19	3.05	796.04	504.03	155.94	7.59	3.42	740.75	552.68	147.50	8.81 11.20	3.71
40	/8	67	18500	906.90	498.11	140.24	0.03	3.53	700.94 907.00	570.32	179.70	9.84	3.94	070.20	506.7Z	102.03	12.64	4.2/
	95	70		976 72	612 70	194 40	13.90	4.04	1082.01	661.09	215.62	16.65	5.42	1166 44	699.90	232.27	19.04	4.80
	76	63		762.67	578.05	151.97	10.70	3.97	852.91	624.16	169.75	13.00	4 27	972.22	658.89	182.2/	14.57	4.62
	70	60		870.05	616.29	175.04	13 22	4.40	980 97	664.82	105.73	16.27	4.27	1060 16	702 70	211 10	18.72	5 21
50	80	67	22500	1004.49	653 50	200.02	16.99	5.03	1116 19	704.76	222.26	20.57	5.59	1203.41	745 71	239.63	23.58	6.02
	85	70		1211 51	756.94	241 24	23.87	6.06	1341 37	815 15	267 10	27.85	6.71	1441 54	861.94	287.05	31.73	7.21
	76	63		889.79	675.45	177.18	10.47	3.82	994.60	728.22	198.05	12.82	4.27	1077.11	768.69	214.48	14.82	4.62
	78	65		1025.55	718.98	204.21	13.55	4.40	1144.36	775.64	227.87	16.54	4,91	1236.89	819.83	246.30	19.06	5.31
60	80	67	26250	1171.95	762.44	233.36	17.28	5.03	1302.28	822.24	259.32	20.93	5,59	1403.96	869.99	279.56	23.00	6.02
	85	70		1413.45	883.10	281.45	23.28	6.06	1564.94	951.01	311.62	28.01	6.71	1681.84	1005.62	334.90	31.91	7.22
	76	63		1055.10	808.11	210.10	6.02	3,02	1180.18	871.50	235.00	7.38	3,38	1280.56	921.03	254.99	8,57	3,66
	78	65		1217.86	861.41	242.51	7.82	3.48	1360.55	929.12	270.92	8.65	3.89	1474.52	983.39	293.61	10.01	4,22
70	80	67	32000	1395.16	914.37	277.81	9.05	3.99	1552.52	986.11	309.14	10.99	4.44	1677.67	1044.63	334.07	12.66	4.80
	85	70		1689.28	1061.44	336.38	12.82	4.83	1872.77	1143.33	372.92	15.47	5.36	2017.17	1210.42	401.67	17.71	5.77
	76	63		1346.16	1036.66	268.05	4.21	2.70	1506.12	1117.94	299.91	5.16	3.02	1636.39	1182.54	325.85	6.01	3.28
	78	65		1555.45	1105.85	309.73	5.48	3.11	1739.08	1192.70	346.29	6.71	3.48	1887.23	1263.41	375.79	7.80	3.78
80	80	67	41500	1784.05	1174.54	355.25	7.03	3.57	1987.07	1266.75	395.67	8.57	3.98	2150.30	1342.89	428.18	9.90	4.30
	85	70		2164.52	1364.74	431.01	10.02	4.33	2402.20	1470.70	478.34	11.77	4.81	2589.93	1557.49	515.72	13.50	5.19

Legend & Notes

- DB : dry bulb temperature, °F
- WB : wet bulb temperature, °F
- AFR : airflow rate

H

- SCFM : unit of standard airflow rate at sea level where air density is 0.075 lb/ft3
- TC : total capacity in MBH
- SC : sensible capacity in MBH WFR : water flow rate, GPM
- WPD : water pressure drop , ft. of water
- VEL : water velocity, FPS FPI : number of fins per inch

A C E

1/2" tube, 4 Rows

	ON	COIL	AFR	<u> </u>		10EPI					4KOWS					14EPI		
MODEL (GD)	DB	WB		тс	SC	WFR	WPD	VEL	тс	sc	WFR	WPD	VEI	тс	sc	WFR	WPD	VEL
	°F	°F	SCFM	MBH	MBH	GPM	FT	FPS	MBH	MBH	GPM	FT	FPS	MBH	MBH	GPM	FT	FPS
	76	63		23.68	20.61	4 71	4 44	2 57	27.67	23.21	5.51	5.89	3.00	31.49	25.47	6.27	7.45	3.42
	78	65		26.97	22.10	5.37	5.63	2.93	31.78	24.80	6.33	7.58	3.45	36.42	27.18	7.25	9.70	3.95
2.5	80	67	1125	30.64	23.44	6.10	7.09	3.32	36.51	26.37	7.27	9.74	3.96	41.87	28.86	8.34	12.25	4.54
	85	70		37.53	27.45	7.47	10.25	4.07	44.73	30.80	8.91	13.81	4.85	51.35	33.76	10.23	17.73	5.57
	76	63		37.96	32.80	7.56	6.24	3.09	44.44	36.94	8.85	8.03	3.62	50.62	40.49	10.08	10.17	4.12
	78	65		43.15	35.12	8.59	7.62	3.51	50.97	39.40	10.15	10.30	4.15	58.41	43.17	11.63	13.19	4.75
4	80	67	1750	49.10	37.19	9.78	9.63	3.99	58.48	41.81	11.65	13.22	4.76	67.08	45.79	13.36	16.96	5.46
	85	70		59.88	43.43	11.92	13.80	4.87	71.38	48.75	14.21	18.72	5.81	80.66	52.86	16.06	23.36	6.56
	76	63		63.57	54.86	12.66	5.81	2.96	74.42	61.76	14.82	7.39	3.46	84.86	67.73	16.90	9.38	3.94
	78	65		72.30	58.75	14.40	7.01	3.36	85.40	65.89	17.01	9.49	3.97	97.99	72.25	19.51	12.18	4.55
ь	80	67	2915	82.30	62.20	16.39	8.87	3.83	97.99	69.91	19.51	12.18	4.55	112.53	76.64	22.41	15.21	5.23
	85	70		100.35	72.63	19.98	12.72	4.66	119.66	81.56	23.83	17.00	5.56	137.37	89.39	27.36	21.83	6.39
	76	63		91.59	78.61	18.24	6.98	3.31	107.32	88.48	21.37	9.31	3.88	122.50	96.99	24.39	11.31	4.43
•	78	65	4105	104.05	84.05	20.72	8.80	3.76	123.19	94.25	24.53	11.42	4.45	141.48	103.44	28.17	14.69	5.11
9	80	67	4105	118.52	88.94	23.60	10.65	4.28	141.10	99.92	28.10	14.62	5.10	162.19	109.65	32.30	18.56	5.68
	85	70		144.16	103.66	28.71	15.20	5.21	171.97	116.45	34.24	20.64	6.22	181.49	120.60	36.14	22.75	6.56
	76	63		119.41	102.78	23.78	6.34	3.24	139.88	115.71	27.85	8.45	3.79	159.50	126.81	31.76	10.72	4.32
12	78	65	5415	135.66	109.96	27.01	7.99	3.68	160.46	123.30	31.95	10.56	4.35	184.11	135.23	36.66	13.55	4.99
	80	67	5415	154.46	116.36	30.76	10.11	4.19	183.94	130.77	36.63	13.53	4.99	211.20	143.37	42.06	17.39	5.73
	85	70		188.05	135.71	37.45	14.08	5.10	224.25	152.42	44.66	19.38	6.08	241.96	160.20	48.18	22.25	6.56
	76	63		156.27	134.29	31.12	6.88	3.39	183.09	151.16	36.46	8.82	3.97	208.81	165.64	41.58	11.20	4.53
16	78	65	7040	177.45	143.61	35.34	8.34	3.85	210.06	161.03	41.83	11.32	4.56	241.01	176.61	47.99	14.53	5.23
	80	67		202.09	151.93	40.24	10.56	4.38	240.65	170.72	47.92	14.49	5.22	276.33	187.21	55.03	18.63	5.99
	85	70		245.81	177.08	48.95	15.06	5.33	293.17	198.92	58.38	20.45	6.36	302.49	203.05	60.23	21.64	6.56
	76	63		202.41	174.33	40.31	6.23	3.29	237.07	196.26	47.21	8.30	3.86	270.17	215.05	53.80	10.53	4.40
20	78	65	9205	229.91	186.50	45.78	7.85	3.74	271.91	209.17	54.15	10.65	4.42	311.76	229.29	62.08	13.29	5.07
	80	67		261.69	197.36	52.11	9.94	4.26	311.65	221.81	62.06	13.28	5.07	357.64	243.08	71.22	17.06	5.82
	85	70		318.59	230.17	63.44	13.83	5.18	379.93	258.50	75.66	19.04	6.18	403.31	268.85	80.31	21.22	6.56
	76	63		250.19	215.27	49.82	6.61	3.39	293.08	242.33	58.36	8.48	3.97	334.02	265.49	66.52	10.76	4.53
24	78	65	11330	284.12	230.24	56.58	8.02	3.85	336.15	258.19	66.94	10.88	4.56	385.46	283.06	76.76	13.96	5.23
	80	6/		323.42	243.59	64.40	10.15	4.38	385.14	2/3./4	76.69	13.94	5.22	442.02	300.03	88.02	17.90	5.99
	85	/0		393.50	283.97	78.36	14.49	5.33	469.32	318.96	93.46	19.48	6.36	483.99	325.53	96.38	20.60	6.56
	76	63		297.45	255.31	59.23	6.91	3.46	348.57	287.35	69.41 70.65	8.92	4.05	397.70	314.89	79.19	11.33	4.62
30	/8	67	13330	337.82	272.91	76.61	8.43	3.93	399.99	306.02	/9.65	11.45	4.05	459.08	335.74	91.42	14.71	5.33
	85	70		304.73 467.70	200.75	02.12	15.21	5.42	458.09	324.40	91.22	20.96	5.52	564.60	290.95	104.77	21.42	6.56
	76	63		407.70	201 21	55.15	15.21	3.45	205 59	377.90	79.77	6.38	2.59	304.00 451.10	350.65	90.95	21.42	4.08
	78	65		384.03	311 72	76.47	6.04	3.05	453.90	349 56	90.39	8.19	4 10	520.92	383.42	103 73	10.52	4.00
35	80	67	15415	437.24	329.99	87.07	7.65	3.95	520.56	370.82	103.66	10.51	4.10	597.95	406.62	119.07	13.23	5.40
	85	70		532.89	385 13	106 11	10.97	4.82	635 38	432.49	126 53	14.78	5 74	725.94	472.46	144 56	18.83	6.56
	76	63		405.48	349.50	80.74	5.82	3.30	474.82	393.46	94.55	7.76	3.86	540.94	431.10	107.72	9.83	4.40
	78	65		460.61	373.94	91.72	7.34	3.75	544.48	419.39	108.42	9.95	4.43	624.05	459.61	124.27	12.43	5.08
40	80	67	18500	524.08	395.69	104.36	9.28	4.26	624.12	444.74	124.28	12.43	5.08	716.04	487.26	142.59	15.95	5.82
	85	70		638.12	461.53	127.07	12.94	5.19	761.02	518.33	151.54	17.82	6.19	806.61	538.63	160.62	19.81	6.56
	76	63		494.21	425.76	98.41	6.02	3.35	578.89	479.38	115.28	7.74	3.92	659.49	525.17	131.32	9.81	4.47
50	78	65	22500	561.39	455.51	111.79	7.59	3.81	663.82	510.87	132.19	9.93	4.50	760.86	559.89	151.51	12.72	5.16
50	80	67	22500	638.86	481.99	127.22	9.26	4.33	760.80	541.71	151.50	12.72	5.16	872.78	593.50	173.80	16.33	5.93
	85	70		777.57	562.03	154.84	13.23	5.27	927.36	631.24	184.67	17.81	6.29	967.96	649.48	192.75	19.25	6.56
	76	63		579.36	498.55	115.37	5.99	3.37	678.72	561.27	135.16	7.98	3.94	773.57	614.93	154.04	10.13	4.49
60	78	65	26250	658.01	533.28	131.03	7.55	3.82	778.45	598.01	155.01	10.25	4.52	892.69	655.64	177.76	12.73	5.19
00	80	67	20230	749.06	564.23	149.16	9.55	4.35	891.96	634.05	177.62	12.72	5.18	1023.80	694.99	203.87	16.33	5.95
	85	70		911.41	657.77	181.49	13.22	5.30	1086.99	738.83	216.45	18.21	6.32	1129.30	757.73	224.88	19.52	6.56
	76	63		707.55	608.60	140.90	6.06	3.39	828.95	685.14	165.07	8.09	3.97	944.96	750.67	188.17	9.81	4.52
70	78	65	32000	803.51	650.93	160.00	7.64	3.84	950.91	729.97	189.36	9.92	4.55	1090.60	800.40	217.17	12.73	5.22
~~~	80	67	32000	914.88	688.72	182.18	9.25	4.38	1089.44	773.93	216.94	12.71	5.21	1250.56	848.38	249.03	16.33	5.98
	85	70		1112.99	802.80	221.63	13.21	5.33	1327.47	901.78	264.34	18.20	6.35	1371.28	921.32	273.07	19.30	6.56
	76	63		931.95	798.71	185.58	6.87	3.61	1092.58	899.05	217.57	9.18	4.23	1246.60	984.91	248.24	11.66	4.83
80	78	65	41500	1058.66	853.33	210.81	8.66	4.10	1253.83	957.02	249.68	11.78	4.86	1439.24	1050.13	286.60	15.14	5.57
	80	67		1205.17	902.76	239.99	10.97	4.67	1435.14	1014.21	285.78	15.06	5.56	1648.46	1112.64	328.26	19.38	6.39
	85	70		1463.90	1051.15	291.51	15.62	5.67	1693.93	1156.57	337.32	20.36	6.56	1693.93	1156.57	337.32	20.36	6.56

### Legend & Notes

- DB : dry bulb temperature, °F

- WB : wet bulb temperature, °F

- AFR : airflow rate

- SCFM : unit of standard airflow rate at sea level where air density is 0.075 lb/ft3

- TC : total capacity in MBH
- SC : sensible capacity in MBH WFR : water flow rate, GPM

- WPD : water pressure drop , ft. of water
- VEL : water velocity, FPS
- FPI : number of fins per inch

1/2" tube, 6 Rows

	ON	COIL	AFR			10EPI					12EPI					14EDI		
MODEL (GD)	DB	WB		тс	SC	WFR	WPD	VEL	тс	sc	WFR	WPD	VEL	тс	SC	WFR	WPD	VEL
	°F	°F	SCFM	MBH	MBH	GPM	FT	FPS	MBH	MBH	GPM	FT	FPS	MBH	MBH	GPM	FT	FPS
	76	63		32.10	25.70	6 30	5.23	2.61	36.71	28.21	7 31	6.67	2 00	40.67	30.23	8 10	7.80	3 31
	70	65		37.00	27.48	7 37	6.76	3.01	42.46	30.12	8.46	8.43	3.45	47.03	32.28	9.37	10.15	3.83
2.5	80	67	1125	42.48	29.14	8.46	8.44	3.46	42.40	32.02	9.40	10.45	3.45	53.81	34.31	10 71	12.95	4 38
	95	70		51.96	23.14	10.40	12 11	4 22	59.30	37.28	11.91	15.44	1.97	65.20	30.01	12.08	18.3/	5.30
	76	63		51.00	41 13	10.33	9.51	3 37	59.30	45.01	11.01	10.97	3.96	65.67	49.23	12.50	13.09	4.27
	70	65		50.74	41.13	11.00	11.02	2 00	69 11	43.01	12.62	14.10	1.45	75.67	40.23 51 /1	15.00	16.62	4.27
4	20	67	1750	69.29	45.02	12.62	14.02	3.05 A 45	79.24	50.02	15.05	17.70	5 10	96.20	54.57	17.19	21.00	4.52
	00	70		00.50	40.33 E2.02	16.54	10.69	4.45 E.40	04.75	50.92	10.00	24.00	6.17	100.23	61.01	20.09	21.03	5.02
	05 76	62		03.05	55.9Z	17.50	19.00	2.40	94.75	75.96	20.00	24.99	4.00	111 27	01.01	20.06	15.22	0.50
	70	65		101.20	72.96	20.17	12.21	3.57	115.04	75.00	20.00	16.40	4.09	120.10	01.27	22.10	10.67	4.55
6	/0	67	2915	101.50	79.10	20.17	16.20	4.12	113.94	00.01	25.09	20.00	4.72	145.06	80.00	25.55	19.07	5.21
	00 0E	70		140.41	70.19	23.07	22.20	4.71	152.52	00.41	20.39	20.90	5.59	145.90	100.00	29.07	24.03	5.94
	65 76	62		140.41	90.74	27.90	23.20	2.24	141.00	106 50	28.00	29.14	2 0.51	101.33	114.22	32.15	29.56	0.50
	70	03		142.32	97.43	24.50	7.71	3.34	141.00	112 59	28.08	9.85	3.82	190.07	114.23	31.11	11.84	4.24
9	/8	65	4105	142.23	103.81	28.32	9.98	3.80	102.80	113.58	32.42	12.49	4.41	180.07	121.83	35.80	14.99	4.00
	80	6/		162.77	109.92	32.41	12.49	4.41	186.18	120.55	37.07	15.93	5.05	205.11	129.27	40.84	18.99	5.56
	85 76	/0		197.42	127.65	39.31	17.72	2.35	224.96	139.84	44.80	22.45	0.10	241.98	147.46	48.19	25.62	0.50
	76	03		102.57	128.47	32.37	8.65	3.53	185.91	140.56	37.02	14.03	4.03	205.94	150.60	41.01	13.28	4.47
12	/8	67	5415	107.42	144.07	37.32	14.20	4.07	214.58	149.74	42.73	14.31	4.05	237.23	170.37	47.24	21.72	5.15
	80	5/		214.44	144.87	42.70	14.29	4.65	245.32	194.30	48.85	18.24	5.32	270.19	1/0.34	53.80	21.73	5.86
	85	/0		259.94	166.60	51.76	20.26	5.64	290.32	184.28	59.01	25.38	0.43	302.49	105.24	52.12	20.35	0.50
	70	65		210.59	177.40	41.93	7.67	3.43	240.82	104.21	47.95	9.79	3.92	200.82	195.34	53.13	14.02	4.34
16	/8	65	7040	242.79	1/7.48	48.35	9.93	3.95	278.00	194.21	55.30	12.70	4.52	307.44	208.28	61.22	14.92	5.00
	80	5/		277.87	187.92	55.33	12.69	4.52	317.96	206.14	03.32	15.86	5.17	350.24	220.97	69.74	18.90	5.70
	85	70		337.02	218.24	67.11	7.07	5.48	384.20	239.12	76.51	22.35	0.25	403.31	247.60	80.31	24.41	0.50
	70	65		2/4.13	217.18	54.59	7.87	3.43	313.50	237.03	02.43	9.68	3.92	347.28	254.63	70.60	11.65	4.35
20	/8	65	9205	315.92	231.31	52.91	9.81	3.95	361.92	253.20	72.07	12.56	4.53	400.17	2/1.46	79.69	15.07	5.01
	80	5/		361.67	244.94	72.02	12.54	4.53	414.04	268.76	82.45	16.03	5.18	456.04	288.04	90.81	18.65	5.71
	85	70		438.79	284.51	87.38	17.81	5.49	207.62	311.82	99.66	22.08	6.26	524.30	322.37	104.40	24.02	0.50
	76	63		338.97	268.15	67.50	8.13	3.50	387.03	293.40	77.19	10.37	4.07	429.30	314.34	85.50	12.49	4.51
24	/8	65	11330	390.68	285.60	77.80	10.52	4.10	447.42	312.57	89.10	13.03	4.70	494.61	335.11	98.49	15.63	5.19
	80	6/		447.00	302.34	89.01	13.01	4.69	511.62	331./1	101.88	16.61	5.37	563.42	355.52	112.19	19.79	5.91
	76	62		200.61	351.05	107.93	18.45	2.09	456.96	364.71	123.07	23.41	0.49	506.20	387.84	124.49	23.90	0.50
	70	63		399.61	315.92	79.58	7.33	3.42	456.86	345.61	90.98	9.35	3.91	506.20	370.35	100.80	11.27	4.33
30	/8	67	13330	460.72	330.54	91.74	9.50	3.94	527.46	308.24	105.03	12.14	4.52	583.35	394.95	110.10	14.30	4.99
	80	70		527.22	350.32	104.99	12.13	4.51	720.70	390.83	120.11	15.19	5.10	766.32	419.04	152.55	18.11	5.69
	85 76	70		461.07	415.79	01.00	7.21	3.47	728.78	455.50	145.12	21.42	0.24	700.32	470.01	152.00	23.40	0.50
	70	63		461.97	365.26	91.99	7.21	3.42	528.23	399.62	105.19	9.20	3.91	585.28	428.23	116.55	10.81	4.33
35	/8	67	15415	552.05	309.12	100.07	9.34	5.94 A E 1	607.27	423.78	121.44	14.05	4.51 5.10	769.37	430.03	154.29	17.75	4.99
	80	0/		720.24	411.99	147.35	16.52	4.51	097.37	451.90	158.8/	20.05	5.10	/08.2/	484.50	176.69	17.71	5.68
	85	70		739.24	478.45	147.21	16.52	5.47	842.63	524.20	167.79	20.95	6.23	887.26	544.02	176.68	23.01	6.56
	70	03		549.33	433.01	109.39	7.35	3.44	725.29	4/0.05	144 45	9.06	3.93	801.05	510.80	156.61	14.11	4.30
40	/8	67	18500	724 71	403.98	144.33	9.18	5.90	920.00	520.19	144.45	15.02	4.54	014.07	544.47	192.02	14.11	5.02
	80	70		970 55	491.31	175 15	16.60	4.54	1002.41	539.18	100.28	20.70	5.19	1049 50	5/7.75	209 91	22.42	5.72
	65	70		670.12	570.75	122 44	7.40	3.50	766 42	523.01	153.61	20.70	0.28	240.05	622.20	160.02	22.43	0.50
	70	03		772.10	530.89	153.44	0.61	3.52	700.42	580.90	176.10	9.48	4.02	046.85	662.46	104.75	14.20	4.45
50	/8	67	22500	002.04	505.39	176.00	9.61	4.05	1011.00	656.01	201 52	15.30	4.04	978.00	702.00	194.75	14.29	5.13
	00 05	70		003.04	596.05	170.00	12.20	4.04	1011.99	762.02	201.52	21.44	5.51	1114.35	705.90	221.90	10.11	5.65
	- 65 - 76	63		795 50	621.20	156 43	7 70	2.03	909.33	670.00	243.53	0.52	0.42	1250.27	779.30	246.9/	11.40	0.50
	76	03		785.52	661.01	100.42	7.79	3.55	898.32	0/9.88	1/8.88	9.52	4.06	994.95	728.58	198.13	14.02	4.50
60	/8	67	26250	905.38	700.63	160.29	9.00	4.09	1036.88	724.30	200.48	12.30	4.69	1205.20	//0.50	228.20	14.82	5.18
	80	D/		1035.94	700.63	206.29	17.50	4.68	1422.24	768.64	236.09	15.76	5.30	1451.04	823.84	260.01	18.//	5.90
	85 76	/0		1256.09	813.49	250.13	17.50	2.68	1432.21	891.46	285.20	22.21	0.47	1451.94	900.13	289.13	22.76	0.50
	76	63		958.26	/5/.84	190.82	7.33	3.54	1095.77	829.16	218.20	9.35	4.05	1213.75	888.36	241.70	11.26	4.49
70	/8	65	32000	1104.52	807.17	219.95	9.49	4.08	1264.81	883.34	251.8/	12.13	4.68	1598.29	947.11	2/8.44	14.56	5.1/
	80	67		1263.79	854.53	251.66	12.12	4.67	1446.27	937.45	288.00	15.48	5.35	1592.71	1004.76	317.16	18.44	5.89
	85	/0		1532.19	992.11	305.11	17.19	5.67	1/47.01	1087.21	347.89	21.82	6.46	1//4.57	1099.32	353.38	22.45	0.56
	/6	63		1260.59	992.48	251.02	8.85	3.80	1441.56	1085.83	287.06	11.30	4.34	1595.78	1162.83	317.77	13.59	4.81
80	78	65	41500	1453.29	1056.93	289.40	11.47	4.38	1662.79	1156.21	331.12	14.65	5.01	1837.83	1240.02	365.97	17.57	5.54
	80	67		1661.43	1118.69	330.84	14.62	5.01	1899.04	1226.46	378.16	18.65	5.72	2090.93	1314.94	416.37	22.21	6.30
	85	70		2011.46	1297.25	400.55	20.70	6.06	2177.89	1370.75	433.69	23.92	6.56	2177.89	1370.75	433.69	23.92	6.56

### Legend & Notes

- DB : dry bulb temperature, °F
- WB : wet bulb temperature, °F
- AFR : airflow rate

H

- SCFM : unit of standard airflow rate at sea level where air density is 0.075 lb/ft3
- TC : total capacity in MBH
- SC : sensible capacity in MBH WFR : water flow rate, GPM
- WPD : water pressure drop , ft. of water
- VEL : water velocity, FPS FPI : number of fins per inch

## 1/2" tube, 8 Rows

	ON	COIL	AFR			10FPI				1	12EPI					14FPI		
MODEL (GD)	DB	W/B		TC	SC	WER	WPD	VEL	TC	sc	WFR	WPD	VEL	тс	SC	WER	WPD	VEL
	0B 0F	¥¥В ∘с	SCFM			CDM	ET.	EDC			CDM	TT VVFD	EDC			CDM	TT FT	
	F	F				GPIVI	FI	FP5		1VIDH	GPINI	FI 12.05	FP5			GPIVI	FI	FP5
	76	63	{	39.92	29.85	7.95	10.16	3.25	44.42	32.09	8.85	12.05	3.61	47.80	33.76	9.52	13.76	3.89
2.5	/8	65	1125	46.01	31.79	9.16	12.84	3.74	51.13	34.23	10.18	15.54	4.16	54.88	36.05	10.93	17.67	4.46
	80	6/	{	52.51	33.72	10.46	16.31	4.27	58.14	36.33	11.58	19.61	4.73	62.24	38.27	12.39	22.19	5.06
	85	70		63.33	39.06	12.61	22.89	5.15	69.84	42.05	13.91	27.33	5.68	74.45	44.23	14.83	30.40	6.06
	76	63		62.39	46.58	12.42	9.58	3.38	69.42	50.07	13.82	11.63	3.76	74.71	52.70	14.88	12.99	4.05
4	78	65	1750	71.92	49.61	14.32	12.13	3.90	79.87	53.41	15.90	14.66	4.33	85.67	56.22	17.06	16.65	4.65
	80	67		82.02	52.61	16.33	15.39	4.45	90.79	56.68	18.08	18.50	4.92	97.14	59.69	19.34	20.91	5.27
	85	70		98.88	60.93	19.69	21.59	5.36	108.98	65.57	21.70	25.75	5.91	116.15	68.96	23.13	28.50	6.30
	76	63		104.99	78.13	20.91	10.20	3.42	116.66	83.91	23.23	11.87	3.80	125.50	88.32	24.99	13.54	4.08
6	78	65	2915	120.92	83.18	24.08	12.66	3.93	134.12	89.49	26.71	15.27	4.36	143.85	94.22	28.64	17.34	4.68
	80	67		137.88	88.20	27.46	16.06	4.49	152.41	94.97	30.35	19.25	4.96	162.99	100.01	32.46	21.48	5.30
	85	70		166.07	102.10	33.07	22.22	5.40	182.86	109.84	36.41	26.45	5.95	194.73	115.47	38.78	29.64	6.34
	76	63		150.04	111.11	29.88	11.63	3.76	166.45	119.22	33.15	13.76	4.17	178.90	125.48	35.63	15.68	4.48
	78	65	4105	172.63	118.27	34.38	14.70	4.32	191.16	127.11	38.07	17.68	4.78	204.84	133.81	40.79	20.03	5.13
	80	67	4105	196.62	125.33	39.15	18.60	4.92	216.99	134.84	43.21	22.24	5.43	231.83	141.95	46.16	25.07	5.80
	85	70		236.42	144.94	47.08	25.97	5.92	259.90	155.80	51.75	30.83	6.50	262.15	156.86	52.20	31.31	6.56
	76	63		196.76	145.99	39.18	11.44	3.77	218.43	156.71	43.50	13.82	4.18	234.80	164.92	46.76	15.76	4.49
1.1	78	65	5/15	226.42	155.38	45.09	14.75	4.33	250.92	167.08	49.97	17.77	4.80	268.93	175.87	53.55	20.15	5.15
12	80	67	5415	257.94	164.68	51.37	18.68	4.94	284.93	177.26	56.74	22.09	5.45	304.48	186.61	60.63	24.91	5.83
	85	70		310.27	190.47	61.79	25.78	5.94	341.42	204.86	67.99	30.65	6.53	342.82	205.52	68.27	30.88	6.56
	76	63		254.57	189.18	50.69	9.75	3.60	282.75	203.13	56.30	11.79	4.00	304.04	213.78	60.54	13.13	4.30
	78	65	1	293.04	201.38	58.35	12.29	4.15	324.95	216.61	64.71	14.82	4.60	348.39	228.03	69.38	16.81	4.93
16	80	67	7040	334.03	213.49	66.52	15.58	4.73	369.11	229.83	73.50	18.66	5.22	394.59	241.99	78.58	21.07	5.58
	85	70	1	402.05	247.03	80.06	21.79	5.69	442.58	265.74	88.13	25.94	6.26	463.81	275.76	92.36	27.80	6.56
	76	63		332.81	247.34	66.27	10.54	3.73	369.73	265.61	73.63	12.75	4.15	397.50	279.51	79.16	14.54	4.46
	78	65	1	383.07	263.26	76.28	13.60	4.30	424.83	283.20	84.60	16.40	4.77	455.41	298.10	90.69	18.16	5.11
20	80	67	9205	436.59	279.08	86.94	17.24	4.90	482.55	300.48	96.09	20.16	5.41	515.75	316.32	102.70	22.75	5.79
	85	70	1	525.35	322.85	104.61	23.52	5.89	578.44	347.34	115.19	28.00	6.49	584.79	350.30	116.45	28.56	6.56
	76	63		409.23	304.23	81.49	10.06	3.70	454.67	326.73	90.54	11.73	4.11	488.86	343.83	97.35	13.37	4.42
	78	65	1	471.06	323.83	93.80	12.50	4.26	522.48	348 38	104.04	15.08	4.72	560.12	366.71	111.54	17.11	5.06
24	80	67	11330	536.91	343.28	106.92	15.85	4.85	593.48	369.62	118 18	19.00	5.36	634 35	389.11	126.32	21.44	5.00
	85	70	1	646.13	397.15	128.66	22.17	5.84	711 50	427.30	141 68	26.40	6.43	725.97	434.07	144 56	27.38	6.56
	76	63		485.18	359.80	96.62	10.44	3.76	528 55	386.18	107.24	12.62	4 17	578.81	406.38	115 26	1/ 11	4.48
	78	65		558.24	382.92	111 16	13.47	4 32	618 56	411 72	107.24	15.02	4.17	662.92	400.38	132.01	19.11	5.14
30	80	67	13330	635.99	405.85	126.65	16.74	4.32	702.32	411.72	129.10	20.03	5.44	750.50	459.83	1/9 /5	22.59	5.81
	95	70		764.95	469.40	152.22	22.20	5.02	941 52	504.70	167.57	20.05	6.52	946.09	507.24	169.66	22.35	6.56
	76	63		550.09	405.40	111 22	0.40	3.55	620.77	145 50	107.57	11 16	4.04	667.44	168.08	122.01	12 72	4.34
	70	65	1	642 64	413.07	120.15	11.02	4 10	712.20	445.55	142.04	14.26	4.04	764.60	400.30 E00.19	152.91	16.20	4.54
35	20	67	15415	722.24	441.05	146.02	15.10	4.13	910.11	473.13 E04.12	161.22	19.00	5.04	0CE 0C	520.76	172.20	20.41	4.50
	85	70	{	755.54	400.33 E 41.94	140.03	21.12	4.77	071.05	504.15	101.52	24.60	6.22	1009.35	600.20	200.77	20.41	5.05
	- 65 - 76	62		667.25	406.29	122.07	21.15	3.74	741.67	502.70	195.57	24.09	0.52	707.22	560.05	150.77	12.62	0.30
	70	65	1	769 17	470.28	152.07	3.87	5.74 1 21	741.57 952.10	553.08	160.70	15.20	4.10	012 50	500.95	191.02	17.03	5.12
40	/0	67	18500	975 51	550.00	17/ 2/	16.15	4.31	052.18	602.05	109.70	12.38	4.70 5.42	1034 72	63/ 9/	206.05	21.04	5.13
	00	70	1	1052.62	647.95	200.01	22.06	5.01	1160 50	607.11	221.00	26.92	5.45	1160 57	701.26	200.05	21.33	5.80
	76	62		2003.03	602.60	161 21	22.00	3.91	2100.50	647.33	170.10	10.28	4.07	067 73	601.30	102 71	12.05	4.37
	70	03	1	023.14	641.40	101.21	9.19	5.00	099.83	600.37	1/9.18	12.02	4.07	1100.02	726.00	192.71	12.25	4.3/
50	/8	67	22500	952.14	690.00	211.00	14.52	4.21	1054.30	722.42	205.90	17.62	4.07	1256.00	720.00	220.84	10.00	5.01
	80	57	{	1062.63	580.08	211.60	14.52	4.80	11/5.15	732.42	234.01	17.42	5.31	1256.29	771.06	250.17	19.66	5.68
	65	/0		12/9.2/	780.96	254.74	20.32	5.78	1409.20	840.79	280.62	24.22	0.37	1451.92	706.44	289.12	25.57	0.56
	76	65	{	947.72	704.66	188.72	9.07	3.67	1053.02	/56.78	209.69	10.97	4.08	1132.31	796.44	225.48	12.52	4.39
60	/8	65	26250	1091.06	750.10	217.27	11.70	4.23	1210.14	806.96	240.98	14.12	4.69	1297.42	849.46	258.36	16.02	5.03
	80	67		1243.60	795.18	247.64	14.84	4.82	1374.69	856.21	273.74	17.80	5.32	1469.40	901.38	292.61	20.08	5.69
L	85	70		1496.77	920.05	298.06	20.77	5.80	1648.19	989.88	328.21	24.74	6.38	1693.91	1011.32	337.31	25.99	6.56
	76	63	4	1156.91	859.81	230.38	9.08	3.69	1285.27	923.34	255.94	11.00	4.10	1381.90	971.69	275.18	12.54	4.41
70	78	65	32000	1331.83	915.26	265.21	11.73	4.25	1476.90	984.53	294.10	14.15	4.71	1583.22	1036.33	315.27	16.06	5.05
	80	67		1517.85	970.21	302.25	14.87	4.84	1677.53	1044.57	334.05	17.83	5.35	1793.06	1099.69	357.06	20.13	5.72
	85	70		1826.57	1122.45	363.73	20.82	5.83	2011.09	1207.59	400.47	24.79	6.42	2056.95	1229.06	409.61	25.83	6.56
	76	63	1	1509.46	1119.62	300.58	9.42	3.72	1675.63	1201.79	333.67	11.39	4.13	1801.12	1264.73	358.66	12.99	4.44
80	78	65	41500	1737.04	1191.71	345.90	12.16	4.28	1924.76	1281.32	383.28	14.65	4.74	2062.88	1348.78	410.79	16.62	5.08
	80	67		1979.08	1263.09	394.10	15.42	4.88	2185.51	1359.34	435.21	18.46	5.39	2335.50	1431.08	465.07	19.89	5.76
	85	70		2380.50	1460.92	474.03	20.59	5.87	2618.86	1571.08	521.50	24.49	6.46	2661.92	1591.26	530.07	25.22	6.56

#### Legend & Notes

- DB : dry bulb temperature, °F
- WB : wet bulb temperature, °F
- AFR : airflow rate
- SCFM : unit of standard airflow rate at sea level where air density is 0.075 lb/ft3
- TC : total capacity in MBH
- SC : sensible capacity in MBH WFR : water flow rate, GPM
- WPD : water pressure drop , ft. of water
- VEL : water velocity, FPS
- FPI : number of fins per inch

## FAN PERFORMANCE TABLE

							Fa	an Total Sta	tic Pressure	(Inch Wat	er)					
MODEL	SCFM		1.5"			2"			2.5"			3"			3.5"	
		FAN HP	MTR HP	RPM	FAN HP	MTR HP	RPM	FAN HP	MTR HP	RPM	FAN HP	MTR HP	RPM	FAN HP	MTR HP	RPM
	900	0.42	0.75	1774	0.57	0.75	2066	0.77	1.0	2602	0.92	1.5	2859	1.08	1.5	3101
GD-2.5	1125	0.54	0.75	1770	0.70	1.0	2042	0.87	1.5	2294	1.06	1.5	2527	1.25	1.5	2744
	1350	0.70	1.0	1805	0.87	1.5	2049	1.05	1.5	2281	1.25	1.5	2502	1.45	2.0	2712
	1400	0.68	1.0	1512	0.91	1.5	1791	1.18	1.5	2046	1.30	2.0	2500	1.51	2.0	2707
GD-4	1750	0.89	1.5	1494	1.13	1.5	1729	1.40	2.0	1962	1.70	3.0	2185	2.02	3.0	2396
	2100	1.23	1.5	1540	1.46	2.0	1730	1.72	3.0	1925	2.01	3.0	2121	2.34	3.0	2316
	2333	0.95	1.5	1157	1.24	1.5	1354	1.56	2.0	1538	1.91	3.0	1709	2.62	5.0	2285
GD-6	2915	1.31	2.0	1163	1.62	2.0	1333	1.96	3.0	1497	2.32	3.0	1655	2.71	5.0	1805
	3500	1.81	3.0	1199	2.14	3.0	1349	2.50	5.0	1493	2.89	5.0	1633	3.29	5.0	1770
	3333	1.29	2.0	893	1.73	3.0	1059	2.22	3.0	1209	2.72	5.0	1636	3.12	5.0	1776
GD-9	4105	1.64	2.0	873	2.11	3.0	1021	2.63	5.0	1162	3.18	5.0	1295	3.77	5.0	1420
	5000	2.22	3.0	879	2.72	5.0	1006	3.25	5.0	1131	3.84	5.0	1252	4.46	7.5	1368
	4333	1.61	2.0	802	2.16	3.0	948	2.75	5.0	1080	3.50	5.0	1448	4.01	5.0	1570
GD-12	5415	2.13	3.0	785	2.71	5.0	917	3.34	5.0	1041	4.02	5.0	1158	4.74	7.5	1267
	6500	2.88	5.0	791	3.47	5.0	905	4.13	5.0	1017	4.84	7.5	1125	5.61	7.5	1229
60.46	5633	2.10	3.0	698	2.80	5.0	828	3.57	5.0	950	4.43	7.5	1236	5.07	7.5	1345
GD-16	7040	2.83	5.0	688	3.54	5.0	798	4.35	7.5	906	5.22	7.5	1010	6.15	7.5	1110
	8450	3.87	5.0	702	4.62	7.5	796	5.44	7.5	888	6.34	10.0	980	7.30	10.0	1070
CD 20	/36/	2.81	5.0	636	3.72	5.0	749	4.76	7.5	858	5.92	7.5	961	6.46	10.0	1209
GD-20	9205	3.91	5.0	640	4.80	7.5	732	5.81	7.5	823	6.95	10.0	914	8.20	10.0	1002
<u> </u>	11050	5.51	7.5	500	6.43	10.0	/43	7.44	10.0	820	8.56	15.0	896	9.78	15.0	973
GD-24	9067	3.37	5.0	592	4.39	7.5	692	5.52	7.5	785	0.75	10.0	8/3	7.92	10.0	1059
60-24	11330	4.72	7.5	599	5.78	7.5	605	0.95	10.0	760	8.22	10.0	845	9.59	15.0	922
	10667	2.91	10.0	526	5.09	7.5	610	6.51	10.0	707	9.17	10.0	809	0.20	15.0	905
GD-30	12220	5.01	7.5	520	5.00	10.0	605	7.90	10.0	682	0.17	10.0	756	9.39 11.20	15.0	826
00.00	16000	7.08	10.0	541	8.43	15.0	609	9.91	15.0	676	11 52	15.0	741	13.25	20.0	805
	12333	4 59	7.5	524	5.87	7.5	608	7 31	10.0	688	8.89	15.0	765	11.29	15.0	968
GD-35	15415	6.60	10.0	537	7.94	10.0	607	9.41	15.0	676	11.01	15.0	743	12.74	20.0	809
	18500	9.44	15.0	565	10.91	15.0	625	12.46	15.0	684	14.11	20.0	742	15.87	20.0	800
	14800	5.36	7.5	449	7.03	10.0	530	8.87	15.0	605	10.86	15.0	675	13.19	20.0	904
GD-40	18500	7.43	10.0	448	9.15	15.0	516	11.07	15.0	582	13.15	20.0	647	15.39	20.0	708
	22200	10.41	15.0	464	12.21	15.0	520	14.18	20.0	577	16.32	20.0	633	18.63	25.0	688
	18000	6.51	10.0	410	8.54	15.0	480	10.79	15.0	545	13.22	20.0	606	15.29	20.0	800
GD-50	22500	8.96	15.0	411	11.10	15.0	472	13.44	20.0	531	15.99	20.0	587	18.71	25.0	640
	27000	12.38	15.0	422	14.69	20.0	476	17.16	20.0	528	19.81	25.0	578	22.63	30.0	627
	21000	7.40	10.0	360	9.77	15.0	423	12.36	15.0	480	15.14	20.0	533	17.54	25.0	693
GD-60	26250	9.95	15.0	355	12.53	20.0	413	15.32	20.0	466	18.29	25.0	516	21.43	25.0	563
	31500	13.43	20.0	358	16.24	20.0	410	19.25	25.0	460	22.42	30.0	506	27.92	40.0	625
	25667	9.68	15.0	355	12.25	15.0	413	15.02	20.0	467	17.98	25.0	518	21.11	25.0	565
GD-70	32000	13.87	20.0	359	16.72	20.0	411	19.75	25.0	459	22.95	30.0	506	26.32	40.0	550
	38500	19.80	25.0	370	22.99	30.0	416	26.32	40.0	460	29.81	40.0	503	33.45	40.0	543
	33250	12.31	15.0	315	15.65	20.0	367	19.42	25.0	417	23.55	30.0	465	27.96	40.0	510
GD-80	41500	17.97	25.0	320	21.37	25.0	364	25.17	30.0	407	29.35	40.0	449	33.89	40.0	490
	49875	26.267	40.0	334	29.885	40.0	372	33.789	40.0	409	38.018	50.0	445	42.581	50.0	481

#### Legends

FAN HP : fan shaft power

MTR HP : Motor HP

RPM : fan speed SCFM : unit of standa

SCFM : unit of standard airflow rate at sea level where air density is 0.075 lb/ft3

#### <u>Notes</u>

- 1. These fan performance can be used for preliminary slections. There will be a small discrepancy between manual and computer selection. For complete fan performance data including sound power level, obtained a computer selection from nearest HACE office.
- 2. See applicable fan for the shaded and non shaded area.

H A C E

## FAN PERFORMANCE TABLE

							Fa	an Total Sta	tic Pressure	(Inch Wat	er)					
MODEL	SCFM		4"			4.5"			5"			5.5"			6"	
		FAN HP	MTR HP	RPM	FAN HP	MTR HP	RPM	FAN HP	MTR HP	RPM	FAN HP	MTR HP	RPM	FAN HP	MTR HP	RPM
	900	1.25	2.0	3328	1.43	2.0	3542	1.15	1.5	5663	1.27	1.5	5852	1.385	2.0	6034
GD-2.5	1125	1.52	2.0	3292	1.71	3.0	3498	1.90	3.0	3697	2.11	3.0	3888	1.72	2.0	6498
	1350	1.67	3.0	2911	1.89	3.0	3099	2.12	3.0	3279	2.49	3.0	3858	2.71	5.0	4034
	1400	1.72	3.0	2904	1.95	3.0	3092	2.18	3.0	3271	2.42	3.0	3442	2.67	5.0	3605
GD-4	1750	2.35	3.0	2594	2.42	3.0	3061	2.68	5.0	3230	2.94	5.0	3394	3.21	5.0	3552
	2100	2.69	5.0	2505	3.06	5.0	2687	3.44	5.0	2862	3.84	5.0	3029	3.01	5.0	5210
	2333	2.96	5.0	2461	3.34	5.0	2635	3.73	5.0	2804	4.14	5.0	2968	2.95	5.0	4024
GD-6	2915	3.12	5.0	1949	3.55	5.0	2086	3.25	5.0	4087	3.52	5.0	4205	3.79	5.0	4319
	3500	3.72	5.0	1902	4.19	7.5	2031	4.66	7.5	2156	5.14	7.5	2277	5.65	7.5	2394
	3333	3.55	5.0	1913	3.99	5.0	2044	4.46	7.5	2172	4.94	7.5	2294	5.43	7.5	2413
GD-9	4105	4.55	7.5	1885	5.02	7.5	2003	5.50	7.5	2118	6.01	7.5	2231	6.54	10.0	2341
	5000	5.12	7.5	1481	5.81	7.5	1588	6.52	10.0	1691	7.25	10.0	1790	8.01	10.0	1885
	4333	4.53	7.5	1688	5.08	7.5	1802	5.65	7.5	1911	6.23	7.5	2017	6.83	10.0	2120
GD-12	5415	5.49	7.5	1369	6.59	10.0	1772	7.21	10.0	1872	7.84	10.0	1969	8.49	15.0	2064
	6500	6.41	10.0	1328	7.24	10.0	1423	8.11	10.0	1513	8.99	15.0	1599	9.91	15.0	1681
	5633	5.75	7.5	1451	6.46	10.0	1553	7.20	10.0	1653	7.96	10.0	1749	8.75	15.0	1842
GD-16	7040	7.14	10.0	1205	8.17	10.0	1295	9.12	15.0	1600	9.93	15.0	1686	10.77	15.0	1771
	8450	8.32	10.0	1157	9.40	15.0	1243	10.52	15.0	1325	11.69	15.0	1405	12.90	20.0	1482
	7367	7.29	10.0	1303	8.16	10.0	1394	9.06	15.0	1482	10.00	15.0	1566	10.96	15.0	1648
GD-20	9205	9.54	15.0	1088	10.98	15.0	1171	11.67	15.0	1439	12.66	20.0	1516	13.68	20.0	1591
	11050	11.10	15.0	1048	12.52	20.0	1123	14.03	20.0	1197	15.62	20.0	1269	16.42	20.0	1401
	9067	8.95	15.0	1143	10.04	15.0	1225	11.18	15.0	1305	12.37	15.0	1383	13.60	20.0	1458
GD-24	11330	11.05	15.0	995	12.58	20.0	1065	14.29	20.0	1261	15.52	20.0	1328	16.88	20.0	1396
	13600	13.20	20.0	973	14.77	20.0	1038	16.43	20.0	1101	20.11	25.0	1318	21.43	25.0	1375
	10667	10.72	15.0	1055	12.15	15.0	1131	13.66	20.0	1206	15.26	20.0	1280	15.83	20.0	1409
GD-30	13330	13.04	20.0	894	15.39	20.0	1098	16.95	20.0	1162	18.52	25.0	1225	20.16	25.0	1287
	16000	15.11	20.0	868	17.08	20.0	928	19.15	25.0	987	23.46	30.0	1214	25.08	30.0	1267
60.05	12333	12.59	20.0	1036	13.99	20.0	1105	15.47	20.0	1173	17.15	20.0	1240	18.81	25.0	1306
GD-35	15415	14.59	20.0	872	16.56	20.0	934	18.63	25.0	993	22.21	30.0	1213	23.83	30.0	1268
<u> </u>	18500	17.74	25.0	856	19.72	25.0	912	24.00	30.0	1082	25.80	30.0	1133	27.68	40.0	1184
CD 40	14800	14.70	20.0	967	16.30	20.0	1029	17.98	25.0	1090	19.73	25.0	1150	21.55	25.0	1208
60-40	18500	17.75	25.0	/6/	22.25	30.0	1030	24.00	30.0	1082	25.80	30.0	1133	27.68	40.0	1184
	22200	23.15	30.0	860	25.19	30.0	908	27.32	40.0	956	29.54	40.0	1003	31.85	40.0	1050
60.50	22500	21.60	20.0	601	19.13	25.0	914	21.32	25.0	969	23.52	30.0	1023	25.81	30.0	1076
00-50	22500	21.60	25.0	720	25.70	30.0	909	27.84	40.0	956	30.06	40.0	1003	32.38	40.0	1049
	27000	27.10	40.0	729	29.76	40.0	//5	32.55	40.0	821	35.59	50.0	807	39.15	50.0	849
60-60	21000	19.97	25.0	749	22.52	30.0	803	25.19	30.0	822	27.90	40.0	906	30.83	40.0	954
GD-60	26250	26.03	30.0	/30	28.68	40.0	710	31.46	40.0	823	34.30	40.0	869	37.30	50.0	914
	31500	31.01	40.0	610	34.20	40.0	710	37.05	50.0	/51	41.18	50.0	/91	46.41	50.0	895
GD-70	2000/	24.40	30.0	610	27.87	40.0	622	27.24	40.0	671	41.20	40.0	700	30.53	50.0	917
00-70	32000	29.85	40.0	592	33.53	40.0	620	37.34	50.0	747	41.29 53.99	75.0	709	47.43	75.0	010
	33350	27.24	40.0	562	37.46	50.0	5020	49.19	50.0	747	12.00	60.0	705	47.41	60.0	832
60-80	41500	28 75	50.0	532	/12 00	60.0	567	40.13	60.0	604	53.97	75.0	697	58.20	75.0	721
00-00	41300	17.17	60.0	516	52 586	75.0	551	58.065	75.0	595	63.800	75.0	618	60 702	100.0	650
	430/3	47.47	00.0	210	52.560	75.0	331	38.003	75.0	363	05.009	75.0	010	05.755	100.0	050

#### **Legends**

FAN HP : fan shaft power

MTR HP : Motor HP

RPM : fan speed

SCFM : unit of standard airflow rate at sea level where air density is 0.075 lb/ft3

#### <u>Notes</u>

- 1. These fan performance can be used for preliminary slections. There will be a small discrepancy between manual and computer selection. For complete fan performance data including sound power level, obtained a computer selection from nearest HACE office.
- 2. See applicable fan for the shaded and non shaded area.

## **FAN SIZES**

Model	SCFM	Fan Size	TSP	Fan Size	TSP	Fan Size	TSP
	900	FC180R	1~2	FC160R	2.5~4.5	BC180R	5~6
GD2.5	1125	FC180R	1~3.5	FC160R	4~5.5	BC180R	6
	1350	FC180R	1~5	FC160R	5.5~6		
	1400	FC200R	1~2.5	FC180R	3~6		
GD4	1750	FC200R	1~4	FC180R	4.5~6		
	2100	FC200R	1~5.5	BC225R	6		
	2333	FC250R	1~3	FC200R	3.5~5.5	BC250R	6
GD6	2915	FC250R	1~4.5	BC250R	5~6		
	3500	FC250R	1~4	FC250K	4.5~6		
	3333	FC315K	1~2.5	FC250K	3~6		
GD9	4105	FC315K	1~3.5	FC250K	4~6		
	5000	FC315K	1~6				
	4333	FC355K	1~2.5	FC280K	3~6		
GD12	5415	FC355K	1~4	FC280K	4.5~6		
	6500	FC355K	1~6				
	5633	FC400K	1~2.5	FC315K	3~6		
GD16	7040	FC400K	1~4.5	FC315K	5~6		
	8450	FC400K	1~6				
	7367	FC450K	1~3	FC355K	3.5~6		
GD20	9205	FC450K	1~4.5	FC355K	5~6		
	11050	FC450K	1~5.5	FC400K1	6		
	9067	FC500K	1~3	FC400K	3.5~6		
GD24	11330	FC500K	1~4.5	FC400K	5~5.5	FC400K1	6
	13600	FC500K	1~5	FC400K1	5.5~6		
	10667	FC560K	1~2.5	FC450K	3~5.5	FC400K1	6
GD30	13330	FC560K	1~4	FC450K	4.5	FC450K1	5~6
	16000	FC560K	1~5	FC450K1	5.5~6		
	12333	FC560K	1~3	FC450K	3.5~5	FC450K1	5.5~6
GD35	15415	FC560K	1~5	FC450K1	5.5~6		
	18500	FC560K	1~4.5	FC500K1	5~6		
	14800	FC630K	1~3	FC500K1	3.5~6		
GD40	18500	FC630K	1~4	FC500K1	4.5~6		
	22200	FC630K	1~3.5	FC560K1	3.5~6		
	18000	FC710K	1~3	FC560K	3.5~4.5	FC560K1	5~6
GD50	22500	FC710K	1~4	FC560K1	4.5~6		
	27000	FC710K	1~3.5	FC630K1	4~5	FC710K1	5.5~6
	21000	FC800K	1~3	FC630K1	3.5~6		
GD60	26250	FC800K	1~3.5	FC630K1	4~5	FC630K2	5.5~6
	31500	FC800K	1~3	FC710K1	3.5~5.5	FC630K2	6
	25667	FC800K1	1~4	FC630K1	4.5~5.5	FC630K2	6
GD70	32000	FC800K1	1~5.5	FC630K2	6		
	38500	FC800K1	1~4.5	FC710K2	5~6		
	33250	FC900K1	1~4.5	FC710K2	5~6		
GD80	41500	FC900K1	1~5	FC800K2	5.5~6		
	49875	FC900K1	1~4	FC900K2	4.5~6		

Note: These fans can be used for preliminary selections. There will be probably be a small discrepancy between manual and computer selection.

#### **Legends**

- SCFM : standard airflow

- TSP : total static pressure, inch of water

- FC : forward curved fans

- BC : backward curved fans

## **ELECTRIC HEATER BATTERY**

Model	Power/Step (kW)	Recommended max. no. of steps	Max. total power (kW)
GD-2.5	6.7	3	20
GD-4	10	4	40
GD-6	10	5	50
GD-9	10	6	60
GD-12	14.3	7	80
GD-16	12.5	8	100
GD-20	15	10	150
GD-24	14.6	12	172
GD-30	16.7	12	200
GD-35	17.3	13	225
GD-40	17.9	14	250
GD-50	20	15	300
GD-60	21.9	16	350
GD-70	25	16	400
GD-80	25	18	450

Example: Unit model GD-12 Heater Capacity = 70 kW From the above table, the power/step is 14.3 kW

Total number of steps = Total power  $\div$  Power per step = 70  $\div$  14.3 = 4.895 or 5 steps The new power per step = 70  $\div$  5

= 14 kW

14 FPI

12 FPI

## **COIL PRESSURE DROP**

## 1/2" & 5/8" tubes



6 ROWS, 5/8 TUBE



8 ROWS, 5/8 TUBE



4 ROWS, 1/2 TUBE

1.2

1



6 ROWS, 1/2 TUBE



8 ROWS, 1/2 TUBE



## INTERNAL COMPONENTS PRESSURE DROP (FILTER)



## INTERNAL COMPONENTS PRESSURE DROP

H A C E



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## **ELECTRICAL DATA**

VOLTAGE	POWER		FLA	LRA	MCA	MOCP
VOLTAGE	kW	HP	[A]	[A]	[A]	[A]
230			3.00	18.7	3.75	15
380	0.56	0.75	2.02	11.4	2.53	15
460			1.50	9.4	1.88	15
230			3.30	25.0	4.13	15
380	0.75	1	2.22	15.2	2.78	15
460			1.65	12.5	2.06	15
230			4.40	37.5	5.50	15
380	1.12	1.5	2.97	22.8	3.71	15
460	1		2.20	18.7	2.75	15
230			5.80	50.0	7.25	15
380	1.49	2	3.91	30.4	4.89	15
460	1		2.90	25.0	3.63	15
230			8.20	74.9	10.25	15
380	2.24	3	5.53	45.6	6.91	15
460	1		4.10	37.5	5.13	15
230			14.20	99.9	17.75	30
380	3.73	5	9.57	60.7	11.96	20
460	1		7.10	49.9	8.88	15
230			20.20	132.9	25.25	45
380	5.60	7.5	13.61	80.8	17.02	30
460	1		10.10	66.5	12.63	20
230			27.00	177.3	33.75	60
380	7.46	10	18.20	107.8	22.74	40
460	1		13.50	88.6	16.88	30
230		15	37.00	235.9	46.25	80
380	11.19		24.93	143.4	31.17	50
460			18.50	117.9	23.13	40
230			48.00	314.5	60.00	100
380	14.92	20	32.35	191.2	40.43	70
460			24.00	157.3	30.00	50
230			58.00	393.1	72.50	125
380	18.65	25	39.09	239.0	48.86	80
460			29.00	196.6	36.25	60
230			72.00	471.8	90.00	160
380	22.38	30	48.52	286.8	60.65	100
460			36.00	235.9	45.00	80
230			94.00	629.0	117.50	200
380	29.84	40	63.35	382.4	79.18	125
460			47.00	314.5	58.75	100
230			120.00	786.3	150.00	250
380	37.30	50	80.87	478.0	101.09	175
460			60.00	393.1	75.00	125
230			142.00	943.5	177.50	315
380	44.76	60	95.70	573.6	119.62	200
460			71.00	471.8	88.75	150
230			172.00	1179.4	215.00	350
380	55.95	75	115.91	717.1	144.89	250
460			86.00	589.7	107.50	175
230			226.00	1572.5	282.50	500
380	74.60	100	152.30	956.1	190.38	315
460		113.00	786.3	141.25	250	

Notes

Legends

MCA: Minimum Circuit Ampacity MOCP: Maximum Over Current Protection FLA: Full Load Amper LRA: Locked Rotor Ampere  MCA is based on 125% of the maximum operating ampere of the largest motor plus 100% of the maximum operating ampere of the rest of the load.
MOCP is based on 225% of the maximum operating ampere of the largest motor plus 100% of the maximum operating ampere of the rest of the load.



## 25mm INSULATION

Model	Width	Height	Length
GD-2.5	700	700	2775
GD-4	1000	700	2775
GD-6	1000	980	3181
GD-9	1300	980	3181
GD-12	1300	1300	3591
GD-16	1600	1300	3677
GD-20	1600	1615	4127
GD-24	1900	1615	4165
GD-30	1900	1935	4274
GD-35	2200	1935	4274
GD-40	2200	2245	4780
GD-50	2650	2245	5080
GD-60	2650	2560	5214
GD-70	3200	2560	5527
GD-80	3750	2650	5747

## **50mm INSULATION**

Model	A	В	с
GD-2.5	738	738	2889
GD-4	1038	738	2889
GD-6	1038	1018	3295
GD-9	1338	1018	3295
GD-12	1338	1338	3705
GD-16	1638	1338	3791
GD-20	1638	1653	4241
GD-24	1938	1653	4241
GD-30	1938	1973	4474
GD-35	2238	1973	4721
GD-40	2238	2283	5194
GD-50	2688	2283	5194
GD-60	2688	2598	5328
GD-70	3238	2598	5641
GD-80	3788	2688	5861

Note All dimensions in mm.

H A C E



## **25mm INSULATION**

Model	Width	Height	Length
GD-2.5	700	700	2775
GD-4	1000	700	2775
GD-6	1000	980	3181
GD-9	1300	980	3181
GD-12	1300	1300	3591
GD-16	1600	1300	3677
GD-20	1600	1615	4127
GD-24	1900	1615	4165
GD-30	1900	1935	4274
GD-35	2200	1935	4274
GD-40	2200	2245	4780
GD-50	2650	2245	5080
GD-60	2650	2560	5214
GD-70	3200	2560	5527
GD-80	3750	2650	5747

## **50mm INSULATION**

Model	Width	Height	Length
GD-2.5	700	700	2775
GD-4	1000	700	2775
GD-6	1000	980	3181
GD-9	1300	980	3181
GD-12	1300	1300	3591
GD-16	1600	1300	3677
GD-20	1600	1615	4127
GD-24	1900	1615	4165
GD-30	1900	1935	4274
GD-35	2200	1935	4274
GD-40	2200	2245	4780
GD-50	2650	2245	5080
GD-60	2650	2560	5214
GD-70	3200	2560	5527
GD-80	3750	2650	5747

Note All dimensions in mm.



## **25mm INSULATION**

Model	Width	Height	Length
GD-2.5	700	700	2775
GD-4	1000	700	2775
GD-6	1000	980	3181
GD-9	1300	980	3181
GD-12	1300	1300	3591
GD-16	1600	1300	3677
GD-20	1600	1615	4127
GD-24	1900	1615	4165
GD-30	1900	1935	4274
GD-35	2200	1935	4274
GD-40	2200	2245	4780
GD-50	2650	2245	5080
GD-60	2650	2560	5214
GD-70	3200	2560	5527
GD-80	3750	2650	5747

## **50mm INSULATION**

Model	A	В	С
GD-2.5	738	738	2889
GD-4	1038	738	2889
GD-6	1038	1018	3295
GD-9	1338	1018	3295
GD-12	1338	1338	3705
GD-16	1638	1338	3791
GD-20	1638	1653	4241
GD-24	1938	1653	4241
GD-30	1938	1973	4474
GD-35	2238	1973	4721
GD-40	2238	2283	5194
GD-50	2688	2283	5194
GD-60	2688	2598	5328
GD-70	3238	2598	5641
GD-80	3788	2688	5861

Note All dimensions in mm.



#### 25mm insulation

Model	Width	Height	Length
GD-2.5	700	700	2441
GD-4	1000	700	2441
GD-6	1000	980	2847
GD-9	1300	980	2847
GD-12	1300	1300	3257
GD-16	1600	1300	3343
GD-20	1600	1615	3793
GD-24	1900	1615	3831
GD-30	1900	1935	3940
GD-35	2200	1935	3940
GD-40	2200	2245	4446
GD-50	2650	2245	4746
GD-60	2650	2560	4880
GD-70	3200	2560	5193
GD-80	3750	2650	5413

#### 50mm insulation

Model	A	В	С
GD-2.5	738	738	2569
GD-4	1038	738	2569
GD-6	1038	1018	2975
GD-9	1338	1018	2975
GD-12	1338	1338	3385
GD-16	1638	1338	3471
GD-20	1638	1653	3921
GD-24	1938	1653	3921
GD-30	1938	1973	4154
GD-35	2238	1973	4401
GD-40	2238	2283	4874
GD-50	2688	2283	4874
GD-60	2688	2598	5008
GD-70	3238	2598	5321
GD-80	3788	2688	5541

Notes

All dimensions in mm.
Filters are front load.

## **AHU ARRANGEMENTS**

H A C E





## AHU ARRANGEMENTS



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## **AHU ARRANGEMENTS**

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## DIMENSIONAL DATA FAN SECTION













#### 25mm insulation

Model	A	В	С	н	Wt., kg
GD-2.5	700	700	980	75	79
GD-4	1000	700	980	75	96
GD-6	1000	980	1300	75	134
GD-9	1300	980	1300	75	158
GD-12	1300	1300	1547	75	208
GD-16	1600	1300	1547	100	258
GD-20	1600	1615	1847	100	318
GD-24	1900	1615	1885	100	356
GD-30	1900	1935	1847	100	380
GD-35	2200	1935	1847	100	413
GD-40	2200	2245	2180	100	507
GD-50	2650	2245	2480	100	616
GD-60	2650	2560	2480	150	704
GD-70	3200	2560	2480	150	787
GD-80	3750	2650	2700	150	949

#### Notes

- 1. All dimensions in mm.
- 2. Please see fan details for dimensions x, y, z, & z1.
- 3. Section weights do not include components.

## 50mm insulation

Model	Α	В	С	н	Wt., kg
GD-2.5	738	738	1018	75	93
GD-4	1038	738	1018	75	112
GD-6	1038	1018	1338	75	155
GD-9	1338	1018	1338	75	181
GD-12	1338	1338	1585	75	240
GD-16	1638	1338	1585	100	293
GD-20	1638	1653	1885	100	360
GD-24	1938	1653	1885	100	400
GD-30	1938	1973	1971	100	428
GD-35	2238	1973	2218	100	464
GD-40	2238	2283	2518	100	572
GD-50	2688	2283	2518	100	690
GD-60	2688	2598	2518	150	783
GD-70	3238	2598	2518	150	873
GD-80	3788	2688	2738	150	1056

## **DIMENSIONAL DATA COIL SECTION**









Left Hand Connection

25mm insulation

**Right Hand Connection** 

Model	A	В	С	н	Wt., kg
GD-2.5	700	700	581	75	46
GD-4	1000	700	581	75	56
GD-6	1000	980	581	75	62
GD-9	1300	980	581	75	75
GD-12	1300	1300	581	75	82
GD-16	1600	1300	667	100	118
GD-20	1600	1615	667	100	126
GD-24	1900	1615	667	100	139
GD-30	1900	1935	667	100	148
GD-35	2200	1935	667	100	161
GD-40	2200	2245	667	100	169
GD-50	2650	2245	667	100	189
GD-60	2650	2560	667	150	228
GD-70	3200	2560	980	150	338
GD-80	3750	2650	980	150	378

# 50mm insulation

Model	A	В	С	н	Wt., kg
GD-2.5	738	738	619	75	55
GD-4	1038	738	619	75	67
GD-6	1038	1018	619	75	74
GD-9	1338	1018	619	75	88
GD-12	1338	1338	619	75	97
GD-16	1638	1338	705	100	136
GD-20	1638	1653	705	100	145
GD-24	1938	1653	705	100	160
GD-30	1938	1973	705	100	170
GD-35	2238	1973	705	100	185
GD-40	2238	2283	705	100	194
GD-50	2688	2283	705	100	217
GD-60	2688	2598	705	150	258
GD-70	3238	2598	1018	150	383
GD-80	3788	2688	1018	150	427

#### Notes

1. All dimensions in mm.

Coil connection handing reference is facing intake side of coil.
Section weights do not include components.

Mixing Section (Single)



112 25

#### 25mm insulation

Model	^	A R	c	н	Damper	r (1 & 2)	Wt. kg
model	~	В	Ľ	n	Width	Height	VV1., KB
GD-2.5	700	700	581	75	626	290	46
GD-4	1000	700	581	75	926	290	56
GD-6	1000	980	667	75	926	470	69
GD-9	1300	980	667	75	1226	470	82
GD-12	1300	1300	830	75	1226	593	90
GD-16	1600	1300	830	100	1526	593	143
GD-20	1600	1615	980	100	1526	702	172
GD-24	1900	1615	980	100	1826	702	189
GD-30	1900	1935	1127	100	1826	895	221
GD-35	2200	1935	1127	100	2126	895	240
GD-40	2200	2245	1300	100	2126	905	280
GD-50	2650	2245	1300	100	2576	905	310
GD-60	2650	2560	1434	150	2576	1220	401
GD-70	3200	2560	1434	150	3126	1220	447
GD-80	3750	2650	1434	150	3676	1310	497

#### 50mm insulation

Model	<u>م</u>	R	C	ы	Damper	r (1 & 2)	Wt. kg
woder	~	в	Ľ	n	Width	Height	WI., KB
GD-2.5	738	738	619	75	626	290	55
GD-4	1038	738	619	75	926	290	67
GD-6	1038	1018	705	75	926	470	81
GD-9	1338	1018	705	75	1226	470	96
GD-12	1338	1338	868	75	1226	593	106
GD-16	1638	1338	868	100	1526	593	167
GD-20	1638	1653	1018	100	1526	702	199
GD-24	1938	1653	1018	100	1826	702	218
GD-30	1938	1973	1165	100	1826	895	254
GD-35	2238	1973	1165	100	2126	895	275
GD-40	2238	2283	1338	100	2126	905	319
GD-50	2688	2283	1338	100	2576	905	353
GD-60	2688	2598	1472	150	2576	1220	456
GD-70	3238	2598	1472	150	3126	1220	507
GD-80	3788	2688	1472	150	3676	1310	563

Mixing Section (Double, Horizontal)





#### 25mm insulation

Model A		B	C	СНИ	Dampe	Damper (1 & 2)		oer (3)	Wit ko
Model	^	в	C C	n –	Width	Height	Width	Height	WU., Kg
GD-2.5	700	700	1128	75	626	290	326	557	81
GD-4	1000	700	1128	75	926	290	626	429	97
GD-6	1000	980	1300	75	926	470	626	695	121
GD-9	1300	980	1300	75	1226	470	926	622	141
GD-12	1300	1300	1568	75	1226	593	926	785	188
GD-16	1600	1300	1568	100	1526	593	1226	738	233
GD-20	1600	1615	1933	100	1526	702	1226	874	295
GD-24	1900	1615	1933	100	1826	702	1526	840	321
GD-30	1900	1935	2067	100	1826	895	1526	1071	372
GD-35	2200	1935	2067	100	2126	895	1826	1042	400
GD-40	2200	2245	2566	100	2126	905	1826	1054	502
GD-50	2650	2245	2566	100	2576	905	2276	1024	552
GD-60	2650	2560	2834	150	2576	1220	2276	1381	694
GD-70	3200	2560	2834	150	3126	1220	2826	1350	766
GD-80	3750	2650	2834	150	3676	1310	3376	1426	846

#### 50mm insulation

Model	Model A B		вС	ы	Damper (1 & 2)		Damper (3)		Wit ka	
model	^	ő	Ľ,	n 1	Width	Height	Width	Height	VV1., Kg	
GD-2.5	738	738	1166	75	626	290	326	557	96	
GD-4	1038	738	1166	75	926	290	626	429	114	
GD-6	1038	1018	1338	75	926	470	626	695	141	
GD-9	1338	1018	1338	75	1226	470	926	622	164	
GD-12	1338	1338	1606	75	1226	593	926	785	219	
GD-16	1638	1338	1606	100	1526	593	1226	738	267	
GD-20	1638	1653	1971	100	1526	702	1226	874	336	
GD-24	1938	1653	1971	100	1826	702	1526	840	366	
GD-30	1938	1973	2105	100	1826	895	1526	1071	426	
GD-35	2238	1973	2105	100	2126	895	1826	1042	458	
GD-40	2238	2283	2604	100	2126	905	1826	1054	570	
GD-50	2688	2283	2604	100	2576	905	2276	1024	625	
GD-60	2688	2598	2872	150	2576	1220	2276	1381	783	
GD-70	3238	2598	2872	150	3126	1220	2826	1350	863	
GD-80	3788	2688	2872	150	3676	1310	3376	1426	953	

Mixing Section (Double, Vertical)





#### 25mm insulation

Model A		в	C	н	Damper (1 & 2)		Damper (3)		We ka
model	~	В	C	n .	Width	Height	Width	Height	W1., NB
GD-2.5	700	700	581	75	626	290	326	557	80
GD-4	1000	700	581	75	926	290	626	429	97
GD-6	1000	980	667	75	926	470	626	695	121
GD-9	1300	980	667	75	1226	470	926	622	143
GD-12	1300	1300	830	75	1226	593	926	785	205
GD-16	1600	1300	830	100	1526	593	1226	738	247
GD-20	1600	1615	980	100	1526	702	1226	874	302
GD-24	1900	1615	980	100	1826	702	1526	840	330
GD-30	1900	1935	1127	100	1826	895	1526	1071	393
GD-35	2200	1935	1127	100	2126	895	1826	1042	424
GD-40	2200	2245	1300	100	2126	905	1826	1054	502
GD-50	2650	2245	1300	100	2576	905	2276	1024	553
GD-60	2650	2560	1434	150	2576	1220	2276	1381	702
GD-70	3200	2560	1434	150	3126	1220	2826	1350	778
GD-80	3750	2650	1434	150	3676	1310	3376	1426	864

### 50mm insulation

Model		в	C	ы	Dampe	r (1 & 2)	Damp	er (3)	Mit ka
model	~	в	Ľ.	"	Width	Height	Width	Height	WI., Kg
GD-2.5	738	738	619	75	626	290	326	557	99
GD-4	1038	738	619	75	926	290	626	429	119
GD-6	1038	1018	705	75	926	470	626	695	147
GD-9	1338	1018	705	75	1226	470	926	622	174
GD-12	1338	1338	868	75	1226	593	926	785	251
GD-16	1638	1338	868	100	1526	593	1226	738	298
GD-20	1638	1653	1018	100	1526	702	1226	874	361
GD-24	1938	1653	1018	100	1826	702	1526	840	394
GD-30	1938	1973	1165	100	1826	895	1526	1071	465
GD-35	2238	1973	1165	100	2126	895	1826	1042	501
GD-40	2238	2283	1338	100	2126	905	1826	1054	588
GD-50	2688	2283	1338	100	2576	905	2276	1024	647
GD-60	2688	2598	1472	150	2576	1220	2276	1381	823
GD-70	3238	2598	1472	150	3126	1220	2826	1350	910
GD-80	3788	2688	1472	150	3676	1310	3376	1426	1009

**Combined Filter Section** 



#### 25mm insulation

Model	A	В	С	н	Wt., kg
GD-2.5	700	700	667	75	51
GD-4	1000	700	667	75	62
GD-6	1000	980	667	75	69
GD-9	1300	980	667	75	82
GD-12	1300	1300	667	75	90
GD-16	1600	1300	667	100	118
GD-20	1600	1615	667	100	126
GD-24	1900	1615	667	100	139
GD-30	1900	1935	667	100	148
GD-35	2200	1935	667	100	161
GD-40	2200	2245	667	100	169
GD-50	2650	2245	667	100	189
GD-60	2650	2560	667	150	228
GD-70	3200	2560	667	150	258
GD-80	3750	2650	667	150	291

#### 50mm insulation

Model	А	В	C	н	Wt., kg
GD-2.5	738	738	705	75	61
GD-4	1038	738	705	75	73
GD-6	1038	1018	705	75	81
GD-9	1338	1018	705	75	96
GD-12	1338	1338	705	75	106
GD-16	1638	1338	705	100	136
GD-20	1638	1653	705	100	145
GD-24	1938	1653	705	100	160
GD-30	1938	1973	705	100	170
GD-35	2238	1973	705	100	185
GD-40	2238	2283	705	100	194
GD-50	2688	2283	705	100	217
GD-60	2688	2598	705	150	258
GD-70	3238	2598	705	150	291
GD-80	3788	2688	705	150	326

#### Notes

All dimensions in mm.
Combined filter includes 2 inches thick panel filter and 18 inches bag filter.
Section weights do not included components.

**Heater Section** 



#### 25mm insulation

Model	A	В	C	н	Wt., kg
GD-2.5	700	700	414	75	36
GD-4	1000	700	414	75	45
GD-6	1000	980	414	75	50
GD-9	1300	980	414	75	60
GD-12	1300	1300	414	75	66
GD-16	1600	1300	414	100	90
GD-20	1600	1615	414	100	96
GD-24	1900	1615	414	100	107
GD-30	1900	1935	414	100	112
GD-35	2200	1935	414	100	124
GD-40	2200	2245	414	100	129
GD-50	2650	2245	414	100	146
GD-60	2650	2560	414	150	180
GD-70	3200	2560	414	150	206
GD-80	3750	2650	414	150	234

#### 50mm insulation

Model	A	В	C	н	Wt., kg
GD-2.5	738	738	452	75	44
GD-4	1038	738	452	75	54
GD-6	1038	1018	452	75	60
GD-9	1338	1018	452	75	72
GD-12	1338	1338	452	75	80
GD-16	1638	1338	452	100	105
GD-20	1638	1653	452	100	112
GD-24	1938	1653	452	100	125
GD-30	1938	1973	452	100	132
GD-35	2238	1973	452	100	144
GD-40	2238	2283	452	100	151
GD-50	2688	2283	452	100	170
GD-60	2688	2598	452	150	206
GD-70	3238	2598	452	150	235
GD-80	3788	2688	452	150	265

Rotary Wheel Heat Exchanger



#### 25mm insulation

Model	A	В	C	н	Wt., kg
GD-2.5	700	1400	667	75	67
GD-4	1000	1400	667	75	78
GD-6	1000	1960	667	75	96
GD-9	1300	1960	667	75	107
GD-12	1300	2600	667	75	123
GD-16	1600	2600	667	100	151
GD-20	1600	3230	667	100	167
GD-24	1900	3230	667	100	180
GD-30	1900	3870	667	100	197
GD-35	2200	3870	667	100	210
GD-40	2200	4490	667	100	226
GD-50	2650	4490	667	100	246
GD-60	2650	5120	667	150	293
GD-70	3200	5120	667	150	323
GD-80	3750	5300	667	150	358

### 50mm insulation

Model	A	В	С	н	Wt., kg
GD-2.5	700	1400	667	75	67
GD-4	1000	1400	667	75	78
GD-6	1000	1960	667	75	96
GD-9	1300	1960	667	75	107
GD-12	1300	2600	667	75	123
GD-16	1600	2600	667	100	151
GD-20	1600	3230	667	100	167
GD-24	1900	3230	667	100	180
GD-30	1900	3870	667	100	197
GD-35	2200	3870	667	100	210
GD-40	2200	4490	667	100	226
GD-50	2650	4490	667	100	246
GD-60	2650	5120	667	150	293
GD-70	3200	5120	667	150	323
GD-80	3750	5300	667	150	358

Plate Heat Exchanger





#### 25mm insulation

Model	A	В	С	н	Wt., kg
GD-2.5	700	1400	980	75	97
GD-4	1000	1400	980	75	112
GD-6	1000	1960	980	75	136
GD-9	1300	1960	1300	75	187
GD-12	1300	2600	1300	75	217
GD-16	1600	2600	1300	100	257
GD-20	1600	3230	1547	100	341
GD-24	1900	3230	1547	100	364
GD-30	1900	3870	1847	100	459
GD-35	2200	3870	1847	100	485
GD-40	2200	4490	2180	100	618
GD-50	2650	4490	2180	100	662
GD-60	2650	5120	2480	150	838
GD-70	3200	5120	2480	150	902
GD-80	3750	5300	2480	150	982

### 50mm insulation

Model	A	В	С	н	Wt., kg
GD-2.5	700	1400	980	75	97
GD-4	1000	1400	980	75	112
GD-6	1000	1960	980	75	136
GD-9	1300	1960	1300	75	187
GD-12	1300	2600	1300	75	217
GD-16	1600	2600	1300	100	257
GD-20	1600	3230	1547	100	341
GD-24	1900	3230	1547	100	364
GD-30	1900	3870	1847	100	459
GD-35	2200	3870	1847	100	485
GD-40	2200	4490	2180	100	618
GD-50	2650	4490	2180	100	662
GD-60	2650	5120	2480	150	838
GD-70	3200	5120	2480	150	902
GD-80	3750	5300	2480	150	982

Notes

Sound Attenuator





#### 25mm insulation

Model	А	В	C1	Wt., kg	C2	Wt., kg	C3	Wt., kg	н
GD-2.5	700	700	1374	99	1674	116	2049	142	75
GD-4	1000	700	1374	118	1674	138	2049	168	75
GD-6	1000	980	1374	132	1674	155	2049	188	75
GD-9	1300	980	1374	153	1674	178	2049	216	75
GD-12	1300	1300	1374	170	1674	198	2049	240	75
GD-16	1600	1300	1374	211	1674	244	2049	293	100
GD-20	1600	1615	1374	228	1674	264	2049	317	100
GD-24	1900	1615	1374	249	1674	288	2049	345	100
GD-30	1900	1935	1374	266	1674	307	2049	369	100
GD-35	2200	1935	1374	287	1674	331	2049	398	100
GD-40	2200	2245	1374	303	1674	350	2049	421	100
GD-50	2650	2245	1374	335	1674	387	2049	463	100
GD-60	2650	2560	1374	390	1674	447	2049	531	150
GD-70	3200	2560	1374	434	1674	496	2049	589	150
GD-80	3750	2650	1374	484	1674	551	2049	450	150

#### 50mm insulation

Model	A	В	C1	Wt., kg	C2	Wt., kg	C3	Wt., kg	н
GD-2.5	738	738	1412	117	1712	137	2087	166	75
GD-4	1038	738	1412	139	1712	161	2087	196	75
GD-6	1038	1018	1412	155	1712	180	2087	219	75
GD-9	1338	1018	1412	179	1712	207	2087	251	75
GD-12	1338	1338	1412	199	1712	230	2087	279	75
GD-16	1638	1338	1412	244	1712	280	2087	337	100
GD-20	1638	1653	1412	263	1712	302	2087	364	100
GD-24	1938	1653	1412	287	1712	329	2087	396	100
GD-30	1938	1973	1412	307	1712	352	2087	424	100
GD-35	2238	1973	1412	331	1712	379	2087	455	100
GD-40	2238	2283	1412	350	1712	401	2087	482	100
GD-50	2688	2283	1412	386	1712	441	2087	530	100
GD-60	2688	2598	1412	444	1712	505	2087	603	150
GD-70	3238	2598	1412	494	1712	560	2087	666	150
GD-80	3788	2688	1412	549	1712	621	2087	738	150

Notes 1. All dimensions in mm. 2. Cell length for C1=1250, C2=1550, C3=1925. 3. Section weights do not include components.

Humidifier



#### 25mm insulation

-					
Model	A	В	С	н	Wt., kg
GD-2.5	700	700	414	75	36
GD-4	1000	700	414	75	45
GD-6	1000	980	414	75	50
GD-9	1300	980	414	75	60
GD-12	1300	1300	414	75	66
GD-16	1600	1300	414	100	90
GD-20	1600	1615	414	100	96
GD-24	1900	1615	414	100	107
GD-30	1900	1935	414	100	112
GD-35	2200	1935	414	100	124
GD-40	2200	2245	414	100	129
GD-50	2650	2245	414	100	146
GD-60	2650	2560	414	150	180
GD-70	3200	2560	414	150	206
GD-80	3750	2650	414	150	234

#### 50mm insulation

Model	Α	В	С	н	Wt., kg
GD-2.5	738	738	452	75	44
GD-4	1038	738	452	75	54
GD-6	1038	1018	452	75	60
GD-9	1338	1018	452	75	72
GD-12	1338	1338	452	75	80
GD-16	1638	1338	452	100	105
GD-20	1638	1653	452	100	112
GD-24	1938	1653	452	100	125
GD-30	1938	1973	452	100	132
GD-35	2238	1973	452	100	144
GD-40	2238	2283	452	100	151
GD-50	2688	2283	452	100	170
GD-60	2688	2598	452	150	206
GD-70	3238	2598	452	150	235
GD-80	3788	2688	452	150	265

**Plenum Section** 



#### 25mm insulation

Model	A	В	С	н	Wt., kg
GD-2.5	700	700	801	75	62
GD-4	1000	700	801	75	75
GD-6	1000	980	801	75	84
GD-9	1300	980	801	75	99
GD-12	1300	1300	801	75	109
GD-16	1600	1300	980	100	160
GD-20	1600	1615	980	100	172
GD-24	1900	1615	1127	100	208
GD-30	1900	1935	1127	100	221
GD-35	2200	1935	1127	100	240
GD-40	2200	2245	1127	100	253
GD-50	2650	2245	1127	100	280
GD-60	2650	2560	1127	150	329
GD-70	3200	2560	1300	150	404
GD-80	3750	2650	1300	150	450

#### 50mm insulation

Model	A	В	C	н	Wt., kg
GD-2.5	738	738	839	75	75
GD-4	1038	738	839	75	90
GD-6	1038	1018	839	75	100
GD-9	1338	1018	839	75	117
GD-12	1338	1338	839	75	130
GD-16	1638	1338	1018	100	185
GD-20	1638	1653	1018	100	199
GD-24	1938	1653	1165	100	239
GD-30	1938	1973	1165	100	254
GD-35	2238	1973	1165	100	275
GD-40	2238	2283	1165	100	290
GD-50	2688	2283	1165	100	321
GD-60	2688	2598	1165	150	373
GD-70	3238	2598	1338	150	454
GD-80	3788	2688	1338	150	505

Diffuser



#### 25mm insulation

Model	A	В	С	н	Wt., kg
GD-2.5	700	700	801	75	62
GD-4	1000	700	801	75	75
GD-6	1000	980	801	75	84
GD-9	1300	980	801	75	99
GD-12	1300	1300	801	75	109
GD-16	1600	1300	980	100	160
GD-20	1600	1615	980	100	172
GD-24	1900	1615	1127	100	208
GD-30	1900	1935	1127	100	221
GD-35	2200	1935	1127	100	240
GD-40	2200	2245	1127	100	253
GD-50	2650	2245	1127	100	280
GD-60	2650	2560	1127	150	329
GD-70	3200	2560	1300	150	404
GD-80	3750	2650	1300	150	450

#### 50mm insulation

Model	Α	В	С	н	Wt., kg
GD-2.5	738	738	839	75	75
GD-4	1038	738	839	75	90
GD-6	1038	1018	839	75	100
GD-9	1338	1018	839	75	117
GD-12	1338	1338	839	75	130
GD-16	1638	1338	1018	100	185
GD-20	1638	1653	1018	100	199
GD-24	1938	1653	1165	100	239
GD-30	1938	1973	1165	100	254
GD-35	2238	1973	1165	100	275
GD-40	2238	2283	1165	100	290
GD-50	2688	2283	1165	100	321
GD-60	2688	2598	1165	150	373
GD-70	3238	2598	1338	150	454
GD-80	3788	2688	1338	150	505

## **INTERNAL COMPONENT WEIGHT**

#### Fan

FAN MODEL	FAN WEIGHT (KG)
FC160R	6.6
FC180R	7.8
FC200R	9.1
FC250R	13
FC250K	18
FC280K	24
FC315K	29
FC355K	41
FC400K	52
FC400K1	53
FC450K	66
FC450K1	67
FC500K	85
FC500K1	86
FC560K	134
FC560K1	142
FC630K	170
FC630K1	175
FC630K2	180
FC710K	201
FC710K1	208
FC710K2	225
FC800K	249
FC800K1	261
FC800K2	278
FC900K1	316
FC900K2	320
BC180R	7.1
BC225R	9.9
BC250R	15.7

#### Filter

	Panel filter	Panel filter		
Model	(washable)	(disposable)	Bag filter	HEPA filter
2.5	5	4	5	30
4	8	6	8	49
6	11	8	11	68
9	16	12	16	98
12	20	16	20	120
16	26	20	26	158
20	28	24	28	177
24	39	30	39	237
30	45	36	45	270
35	54	42	54	327
40	63	48	63	384
50	72	56	72	436
60	80	64	80	480
70	100	80	100	600
80	120	96	120	720

Note

A C E

H

All component weights in kg.

Motor HP	Weight, kg
0.25	6.3
0.50	8.2
0.75	10.0
1	17.2
1.5	22.7
2	23.6
3	33.6
5	49.9
7.5	52.2
10	56.7
15	80.7
20	90.7
25	204.1
30	226.8
40	281.2
50	306.1
60	460.8
75	464.9
100	579.1

### Drip Eliminator

Model	Weight, kg
2.5	14
4	20
6	30
9	41
12	51
16	64
20	81
24	98
30	125
35	142
40	165
50	198
60	225
70	272
80	345

## **INTERNAL COMPONENT WEIGHT**

Coil, 5/8" tube

					Ro	ws		
Model	Qty	FPI	4 6 8					8
			AL	CU	AL	CU	AL	CU
2.5		10	20	29	28	40	35	52
	1	12	21	31	29	44	37	57
		14	22	34	30	48	38	62
		10	28	41	39	58	50	62 75 83 91 120 133 146 165 202 211 2259 2276 2357 259 2276 2338 2356
4	1	12	30	45	41	64	52	83
	_	14	31	49	43	70	55	91
		10	44	65	60	93	77	120
6	1	12	46	71	64	102	82	133
		14	48	78	67	112	86	146
		10	58	88	81	127	104	165
9	1	12	61	97	85	141	110	184
		14	64	107	90	154	116	202
		10	72	112	102	162	132	211
12	1	12	76	124	108	180	139	235
		14	80	136	114	198	147	259
		10	95	147	134	211	172	276
16	1	12	100	162	141	234	182	307
		14	105	178	149	258	192	338
		10	121	189	170	272	220	356
20	1	12	128	209	180	302	233	396
		14	134	229	191	333	247	437
		10	145	229	205	330	264	431
24	1	12	154	254	217	368	281	481
		14	162	279	230	405	298	531
	2	10	91	140	127	201	164	262
30		12	96	155	135	223	173	291
		14	101	169	142	245	183	320
		10	102	159	144	229	185	299
35	2	12	108	176	152	254	196	333
		14	114	193	161	280	208	367
		10	120	188	169	271	218	354
40	2	12	127	208	179	302	231	395
		14	133	229	189	332	55     9       77     12       82     13       86     14       110     14       110     14       110     14       110     14       116     20       132     21       139     22       139     23       172     21       182     30       192     33       220     33       233     39       247     43       264     43       281     44       298     53       164     20       173     29       183     33       185     29       196     33       208     30       218     33       231     33       245     43       261     47       293     55       300     44       319     55	435
		10	143	226	202	326	261	426
50	2	12	151	251	214	363	277	476
		14	160	276	227	401	293	525
60		10	164	261	232	377	300	493
	2	12	174	290	246	420	319	551
		14	183	319	261	464	338	608
70		10	202	320	285	462	367	604
	2	12	214	355	302	515	391	674
		14	225	391	320	568	414	745
		10	220	349	310	505	401	661
80	2	12	232	388	330	564	427	739
		14	245	427	349	622	453	816

Notes 1. Coil weight do not include water. 2. All weights in kg.

## **INTERNAL COMPONENT WEIGHT**

Coil, 1/2" tube

					Ro	ws		
Model	Qty	FPI	4 6 8					
			AL	CU	AL	CU	AL	CU
2.5		10	16	23	22	33	28	41
	1	12	17	25	23	36	29	45
		14	18	27	24	39	31	50
		10	23	33	32	47	40	61
4	1	12	24	36	33	52	42	67
		14	25	39	35	57	44	73
		10	36	54	50	77	64	99
6	1	12	38	59	53	85	67	110
Ť		14	39	64	56	93	71	121
		10	48	73	67	106	86	137
9	1	12	50	81	71	117	91	152
		14	53	88	75	129	96	168
		10	59	92	84	134	108	174
12	1	12	63	102	89	149	115	194
~~	-	14	66	112	94	164	121	214
		10	78	121	111	175	8       AL     CU       28     41       29     45       31     50       40     61       42     67       44     73       64     99       67     110       71     121       86     137       91     152       96     168       108     174       115     194       121     214       142     227       150     253       159     279       179     290       190     323       201     356       216     353       230     393       243     434       136     218       144     242       152     267       154     248       163     277       154     248       163     277       173     305	227
16	1	12	83	134	117	195	150	253
**		14	87	147	124	214	159	279
		10	99	154	140	223	179	290
20	1	12	104	171	148	248	190	323
~~	-	14	110	187	157	273	201	356
		10	119	187	169	271	216	353
24	1	12	126	208	179	302	230	393
	-	14	133	228	189	332	243	434
		10	76	117	107	168	136	218
30	2	12	80	129	113	187	144	242
		14	84	141	119	205	152	267
	2	10	85	133	121	192	154	248
35		12	90	147	128	213	163	277
	_	14	95	161	135	234	173	305
		10	97	153	138	221	177	287
40	2	12	103	169	146	246	188	320
		14	108	186	155	270	AL     CCC       28     41       29     45       31     50       40     61       42     67       44     73       64     99       67     110       71     12       86     13       91     15       96     16       108     17       115     19       121     21       142     22       150     25       159     27       179     29       190     32       201     35       216     35       230     39       243     43       136     21       144     24       152     26       154     24       163     27       173     30       177     28       188     32       199     35	353
		10	117	184	166	266	212	346
50	2	12	123	204	176	296	225	386
	-	14	130	224	186	326	239	426
60		10	135	214	192	311	246	404
	2	12	143	238	204	346	262	451
		14	151	261	215	382	277	499
70		10	166	263	236	381	302	495
	2	12	176	292	250	424	321	553
		14	186	321	264	467	340	611
		10	211	338	301	492	387	641
80	2	12	223	376	320	549	412	718
		14	236	414	339	606	437	794

Notes 1. Coil weight do not include water. 2. All weights in kg.

# NOTES:

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# **Products Range**



AIR COOLED WATER CHILLER 48 - 486 TR Screw-Reciprocating



AIR HANDLING UNIT (SINGLE & DOUBLE SKIN) 300 - 200,000 CFM



PACKAGED AIR CONDITIONING UNIT 2 - 100 TR



SLIM DUCTED CEILING FAN COIL UNITS



FAN COIL UNITS 200 - 1,300 CFM



CASSETTE TYPE AIR-CONDITIONER



HIGH PRESSURE FAN COIL UNIT



MINI SPLIT UNIT 9,000 - 32,000 Btu/hr



AIR COOLED CONDENSING UNITS 2 - 160 TR



ROOM A/C UNITS WINDOW SERIES



Duct Heater **CHMS Series** 



Variable Air Volume (VAV) MODEL SR



Sound Attenuator **Rectangular Type** 



PRE-INSULATED PIPE

Variable Air Volume (VAV)

AIRFOIL FANS

225 - 340,000 CFM

MODEL S

Ceiling/Side wall Diffusers



Variable Air Volume (VAV) MODEL SX



VANE AXIAL FAN 3,000 - 250,000 CFM



**Duct Heater** 

**HF** Series

Variable Air Volume (VAV) MODEL V



Sound Attenuator Round Type







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