Main Features:

Sepand **TAHVIEH** Air Cooled Condensers are produced in 12 models in a range of 3 to 80 toncapacities. The ease of **Sepand** condensers' installation and the minimum maintenance has made them so ideal for HVAC and refrigerating applications.

Sepand Air Cooled Condensers are dry-working and do not require the installation of pump and piping. Also their body is made of galvanized iron sheets with proper thickness while the structure and equipment are assembled on the chassis.

Fan:

Axial fans are used to maintain the required blow-air debit over the condenser coils. Using these fans result in a compact form of design.

.Material: Impeller blades made of die-cast aluminum

.Type of protection: IP (55) F or (54) F

.EC fans are optional

Fin:

In order to increase the efficiency of the condenser they are equipped with herringbone wavy fins and the coils are designed in 1/2" copper tubes with 8 to 14 FPI aluminum or copper fin.

Coil:

.Special coating like Heresite is optional.

.Copper fins are optional

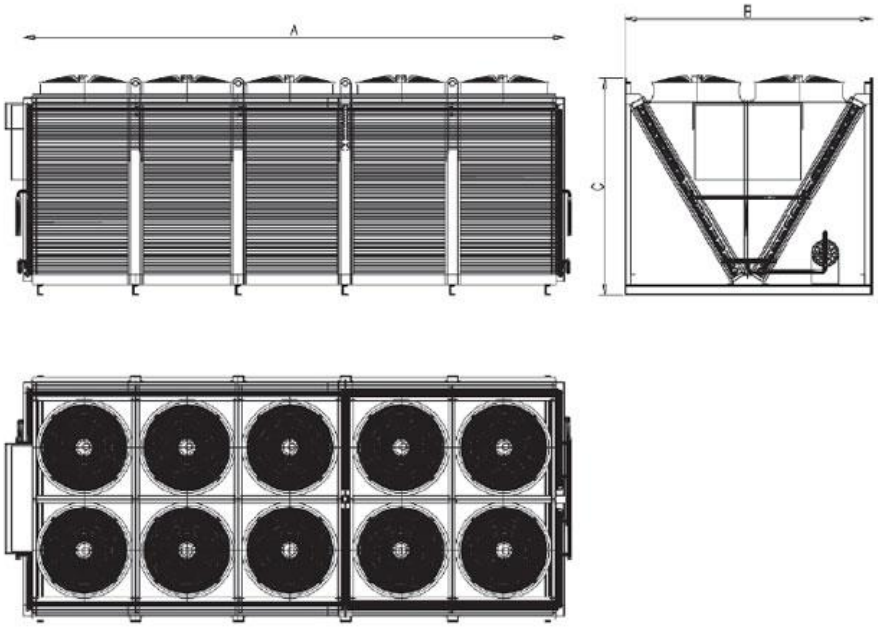

TABLE 5
Connection size
Condenser Copper Pipe

UNIT SIZE	AC045	AC085	AC120	AC180	AC250	AC350
Dimensions (mm)						
A	899	1064	1794	2034	2034	2970
B	1147	1337	1233	1402	1463	1402
C	1165	1677	1282	1241	1250	1233

UNIT SIZE	AC450	AC550	AC700	AC850	AC1000	AC1200
Dimensions (mm)						
A	2970	2034	2034	2970	2970	3940
B	1455	2369	2426	2372	2420	2363
C	1241	1978	2239	2138	1978	1820

Note: All dimensions are in milineters

TABLE 4
Connection size
Condenser Copper Pipe

UNIT SIZE	AC045	AC085	AC120	AC180
Hot Gas	2-7/8"	2-7/8"	2-1 1/8"	2-1 1/8"
Liquid	2-5/8"	2-5/8"	2-7/8"	2-7/8"

TABLE 4 (Continued)
Connection size
Condenser Copper Pipe

UNIT SIZE	AC250	AC350	AC450	AC550
Hot Gas	2-1 1/8"	2-1 1/8"	2-1 3/8"	2-1 3/8"
Liquid	2-7/8"	2-7/8"	2-1 1/8"	2-1 1/8"

TABLE 4 (Continued)
Connection size
Condenser Copper Pipe

UNIT SIZE	AC700	AC850	AC1000	AC1200
Hot Gas	2-1 3/8"	2-1 5/8"	2-1 5/8"	2-2 1/8"
Liquid	2-1 1/8"	2-1 3/8"	2-1 3/8"	2-1 5/8"

Note: all sizes are in inch

TABLE 3
Electrical data

UNIT MODEL	AC045	AC085	AC120	AC180	AC250	AC350
Electromotor Quantity*Horsepower	0.92	2.33	1.73	2.33	2.33	2.33
RPM	875	885	850	885	885	885
Full Load Amps.	1.30	3.7	2.7	3.7	3.7	3.7
Starting Amps.	1.30	3.7	5.4	7.4	7.4	11.1

TABLE 3 (Continued)
Electrical data

UNIT MODEL	AC450	AC550	AC700	AC850	AC1000	AC1200
Electromotor Quantity*Horsepower	2.33	2.33	2.33	2.33	2.33	2.33
RPM	885	885	885	885	885	885
Full Load Amps.	3.7	3.7	3.7	3.7	3.7	3.7
Starting Amps.	11.1	14.8	14.8	22.2	22.2	29.6

TABLE 3
Electrical data

UNIT MODEL	AC045	AC085	AC120	AC180	AC250	AC350
Electromotor Quantity*Horsepower	0.92	2.33	1.73	2.33	2.33	2.33
RPM	875	885	850	885	885	885
Full Load Amps.	1.30	3.7	2.7	3.7	3.7	3.7
Starting Amps.	1.30	3.7	5.4	7.4	7.4	11.1

TABLE 3 (Continued)
Electrical data

UNIT MODEL	AC450	AC550	AC700	AC850	AC1000	AC1200
Electromotor Quantity*Horsepower	2.33	2.33	2.33	2.33	2.33	2.33
RPM	885	885	885	885	885	885
Full Load Amps.	3.7	3.7	3.7	3.7	3.7	3.7
Starting Amps.	11.1	14.8	14.8	22.2	22.2	29.6

TABLE 2
Physical Data

UNIT SIZE	AC045	AC085	AC120	AC180	AC250	AC350
Number of Axial Fans	1	1	2	2	2	3
Diameter (mm)	630	800	710	800	800	800
RPM	875	885	850	885	885	885
Total Airflow (CFM)	6000	11000	16000	23500	23500	35400
Coil Data						
Number	2	2	2	2	2	2
Rows Deep	3	4	3	3	4	3
Face Area (ft^2)	12.221	24.889	31.383	35.977	40.474	54.542

TABLE 2(Continued)
Physical Data

UNIT SIZE	AC450	AC550	AC700	AC850	AC1000	AC1200
Number of Axial Fan	3	4	4	6	6	8
Diameter (mm)	800	800	800	800	800	800
RPM	885	885	885	885	885	885
Total Airflow (CFM)	34000	47000	47000	71000	68000	94500
Coil Data						
Number	2	2	2	2	2	2
Rows Deep	4	3	4	3	4	3
Face Area (ft)	54.542	71.954	80.948	116.88	109.08	135.77

TABLE 1 (Continued)
Capacity Ratings

UNIT SIZE	AC450	AC550	AC700	AC850	AC1000	AC1200
Temperature Difference (°F)	15	15	15	15	15	15
Heat Rejection (MBH) Herringbone Wavy Fins 10 Fins Per inch	294.467	326.332	424.614	482.958	588.934	652.664
Temperature Difference (°F)	20	20	20	20	20	20
Heat Rejection (MBH) Herringbone Wavy fins 10 Fins Per inch	412.771	434.240	561.618	641.634	825.542	868.480
Temperature Difference (°F)	25	25	25	25	25	25
Heat Rejection (MBH) Herringbone Wavy Fins 10 Fins Per inch	506.288	568.000	633.052	845.120	1012.576	1136.000
Temperature Difference (°F)	30	30	25	30	30	30
Heat Rejection (MBH) Herringbone Wavy Fins 10 Fins Per inch	634.068	722.640	909.030	1063.892	1268.136	1445.280

*All ratings are based on 105°F inlet air temp at sea level and refrigerant is R-22

TABLE 1
Capacity Ratings

UNIT SIZE	AC045	AC085	AC120	AC180	AC250	AC350
Temperature Difference (°F)	15	15	15	15	15	15
Heat Rejection (MBH) Herringbone Wavy Fins 10 Fins Per inch	50.826	106.279	141.923	163.166	212.307	241.479
Temperature Difference (°F)	20	20	20	20	20	20
Heat Rejection (MBH) Herringbone Wavy fins 10 Fins Per inch	65.084	146.222	197.511	217.120	280.809	320.817
Temperature Difference (°F)	25	25	25	25	25	25
Heat Rejection (MBH) Herringbone Wavy Fins 10 Fins Per inch	80.642	184.705	248.894	284.000	316.526	422.560
Temperature Difference (°F)	30	30	25	30	30	30
Heat Rejection (MBH) Herringbone Wavy Fins 10 Fins Per inch	106.085	227.190	311.671	361.320	454.575	531.946

*All ratings are based on 105°F inlet air temp at sea level and refrigerant is R-22

Selection Guide:

All calculations of Sabalan Air cooled condensers are based on sea level altitude and ambient temperature 105°F and R-22 refrigerant.

For selecting Air Cooled Condenser following correction factors should be assumed.

Altitude Correction Factor

Altitude (m)	0	400	800	1200	1600	2000	2400
F1	1	1.03	1.05	1.09	1.12	1.16	1.19

Ambient Tempreture Correction Factor

Ambient Temperature (°F)	90	95	100	105	110	115	120
F2	0.971	0.981	0.99	1	1.014	1.02	1.03

Refrigerant Correction Factor

Refrigerant	R134a	R22	R407c
F3	1.03	1	1.16

Example

Cooling Load: 41.04 KW

Compressor Power: 14.7 KW

Altitude: 1600 meters

Ambient temperature: 115°F

Refrigerant: R 407c

Temperature Difference (TD): 25

Step 1: Find heat rejection heat

$Q_{Rejection} = Q_{compressor\ power} + C_{cooling\ load}$ $Q_R = 41.04 + 14.7 = 55.47$

Step 2: Find correctionfactors:

Altitude correction factor @ 1600 m ⟶ F1=1.12

Ambient temperature correction factor @ 115 F ⟶ F2=1.02

Refrigeration correction factor for R 407 C ⟶ F3=1.16

Step 3: Calculate required heat rejection

$Q_{New} = Q_R * F1 * F2 * F3 \longrightarrow Q_{New} = 55.47 * 1.12 * 1.02 * 1.16 = 73.83$ KW (886.3 MBH)

Step 4: By using required heat rejection select an Air Cooled Condenser in this case, your selection would be: AC 1000.