



axial fans int srl

OFFER N. - 2024-02-27 - REV 0

MODEL 4.3A-2134-03-SML-TS

Client Name: ENER Teknoloji Co

Project Name:

Project Reference: 02612N

Item: Aircooler

INPUT

Duty Point

Fan Quantity	1
Air Flow	27.733 m ³ /s
Static Pressure	109.07 Pa
Air Density	1.067 kg/m ³
Air Temperature	48 °C
Altitude	20 m
Air Humidity	65 %

Installation

Application	Air Cooled Condenser
Type	Forced
Inlet Shape	Coni. L/D 0.05
Tip Clearance	0.005 S/Diam. (API 661)
Diffuser	Not present
Inlet Obstacles	
Outlet Obstacles	

Fan specification

Diameter	7 ft
Airfoil	Aluminum
Blade Pitch Adjustment	Only Manual
Rotational Speed	404 rpm
Tip Speed	45.1 m/s

Restrictions

Min Pressure Margin	21 %
Min Air Flow Margin	10 %
Min Static Efficiency	20 %
Min Blade Number	3
Min Temperature	5 °C
Max Power	7.5 kW
Max Noise	85 SPL
Distance	1 m
Position	Below

OUTPUT

Details

Fan Static Pressure	109.07 Pa	Static Efficiency	62.68 %
Pressure Recovery	0.0 Pa	Total Efficiency	80.40 %
Dynamic Pressure	30.84 Pa	Rotor Shaft Power	4.83 kW
Total Pressure	139.91 Pa	Rotor Shaft Power at Min Temp.	5.7 kW
Fan Diameter	2134 mm	Pressure Margin (API / Pitch)	34.6 / 59.0 %
Fan Ring Diameter	2155 mm	Volume Margin	16.0 %
Blade Airfoil	4.3A	Aerodynamic Axial Force	500.2 N
Blade Material	Aluminum	Blade Failure Load	6402.4 N
Rpm	404.0 rpm	Max Residual Unbalance	8.0 N
Blade Frequency	753.5 cpm	Rotor Weight	29.9 kg
Blade Tip Speed	45.1 m/s	Rotor Inertia	5.9 kg m ²
Number of Blades	3	Torque at design speed	114.1 N m
Blade Pitch Adjustment	Manual	PWL	85.6 dB(A)
Blade Tip Pitch Angle	13.83 deg	SPL inlet/outlet	77.6 dB(A)
Blade Shaft Pitch Angle	9.8 deg	SPL side	65.3 dB(A)

Sound spectrum

Octave [Hz]	31.5	63.0	125.0	250.0	500.0	1000.0	2000.0	4000.0	8000.0
PWL [dB]	88.6	90.6	90.6	86.6	83.6	80.6	72.6	68.6	64.6
Inlet/Outlet SPL [dB]	80.6	82.6	82.6	78.6	75.6	72.6	64.6	60.6	56.6
Side SPL [dB]	68.3	70.3	70.3	66.3	63.3	60.3	52.3	48.3	44.3
Tolerance +/-	5.0	5.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0

tolerance on overall sound values +/- 2 dB(A)

IMPORTANT NOTE: The selected fan has to be checked and approved by AFI in order to operate at specified rotation speed and blade pitch angle

You are requested to contact AFI in case any of these values or other boundary conditions would change after installation

NOTE: AFI must be informed in case of fan operation under frequency variator (inverter) to allow AFI to check for any possible critical speed

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INPUT

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Installation

Application **Air Cooled Condenser**
 Type **Forced**
 Inlet Shape **Coni. L/D 0.05**
 Tip Clearance **0.005 S/Diam. (API 661)**
 Diffuser **Not present**
 Inlet Obstacles
 Outlet Obstacles

Fan specification

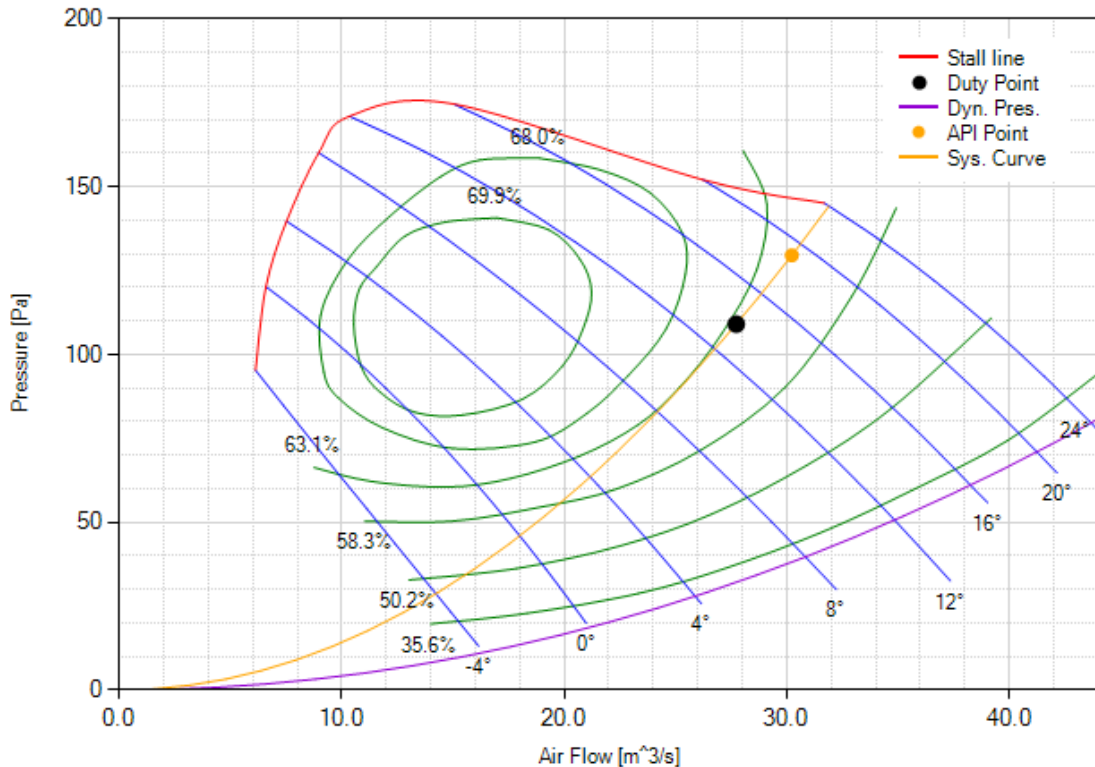
Diameter **7 ft**
 Airfoil **Aluminum**
 Blade Pitch Adjustment **Only Manual**
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 Distance **1 m**
 Position **Below**

OUTPUT

Curves: Static Pressure



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Outlet Obstacles	

Fan specification

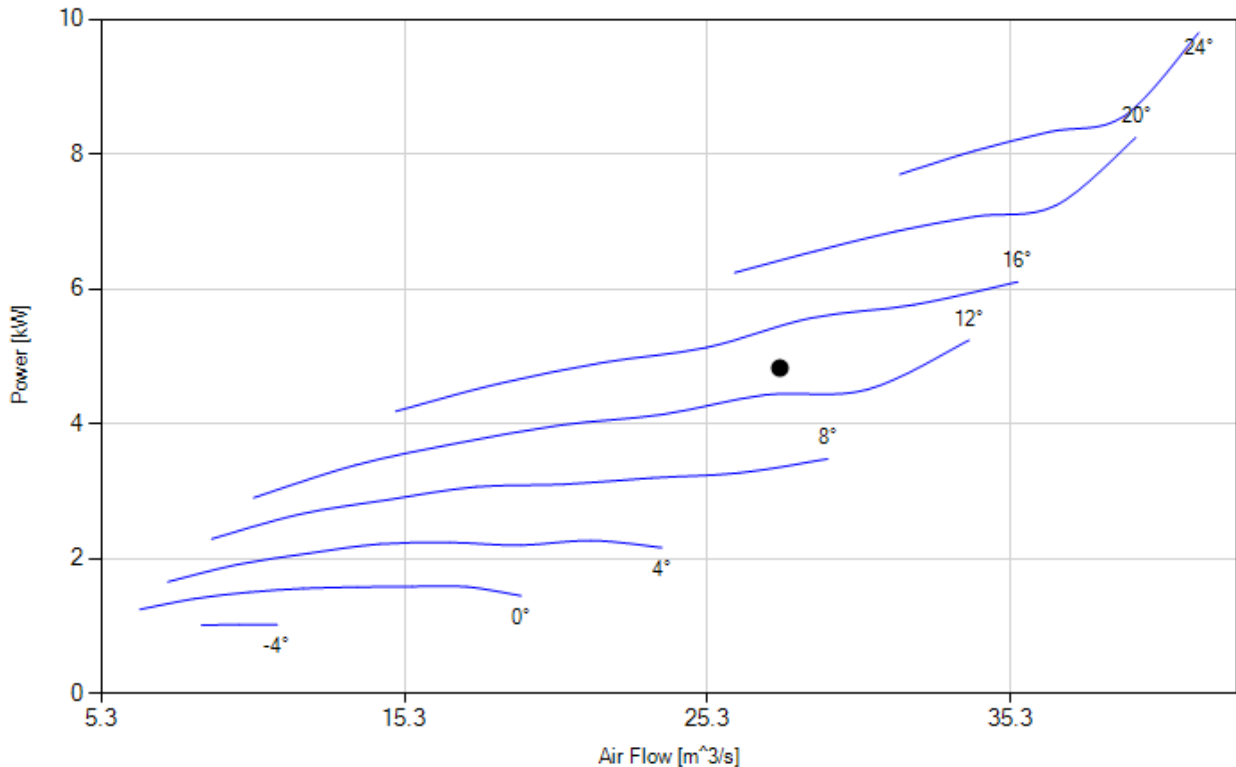
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OUTPUT

Curves: Power Required



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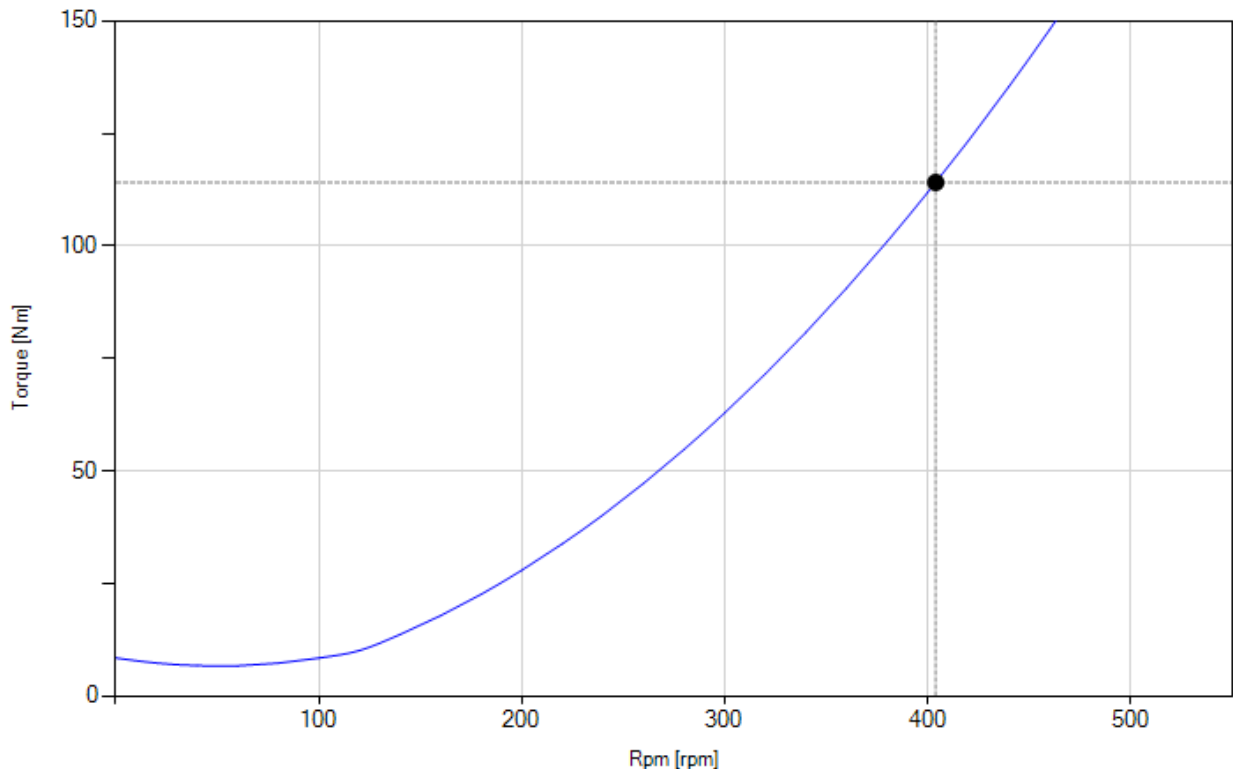
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OUTPUT

Curves: Torque



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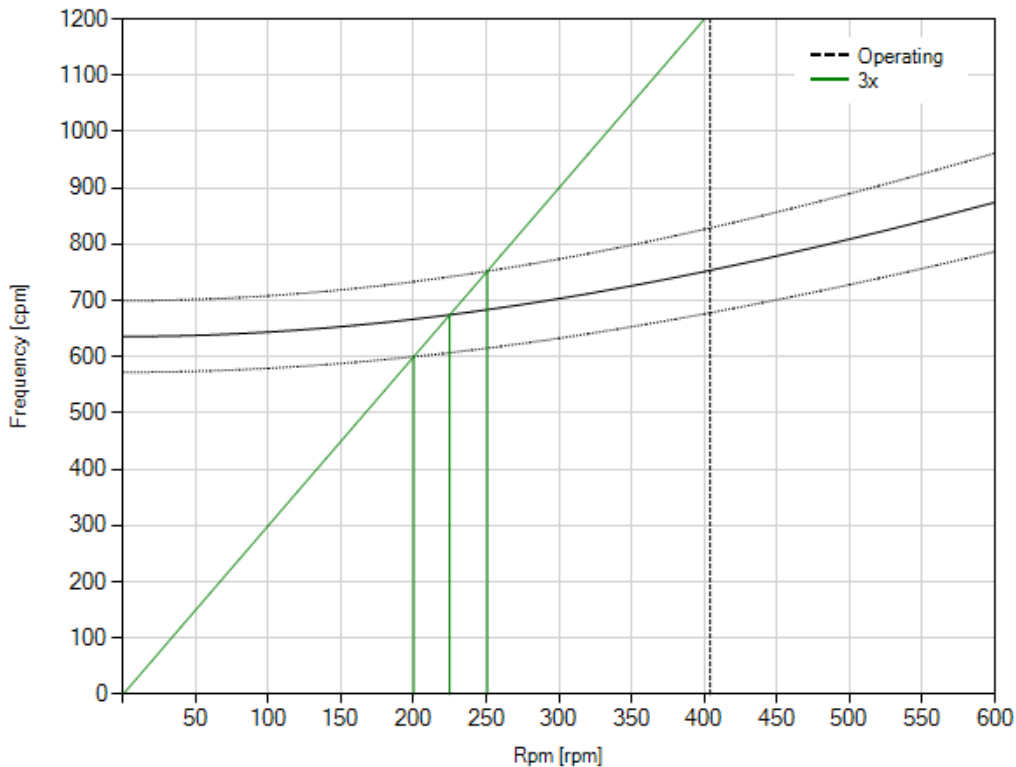
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Curves: Frequency



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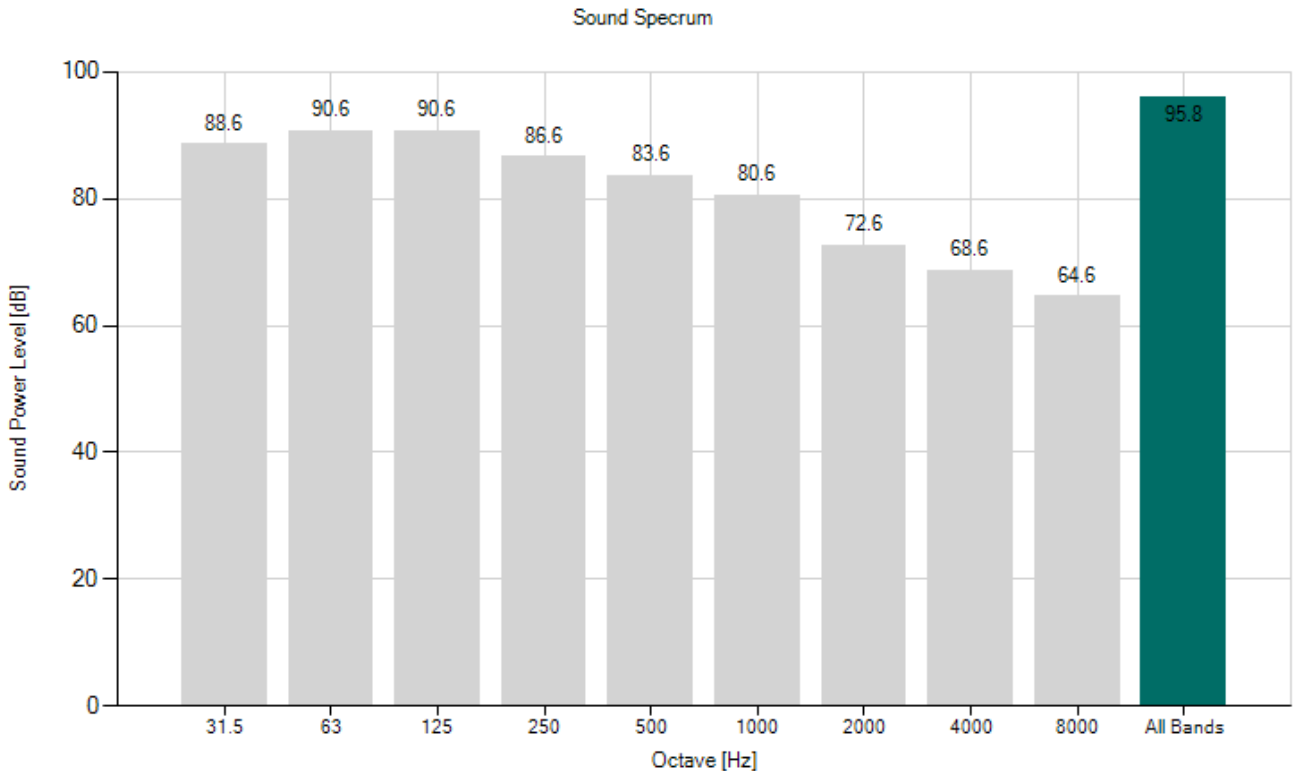
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Sound: Spectrum





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Sound: Multiple Fans

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FAN DRAWING

