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How the performance curves work

The example shown here is for a 630mm axial flow fan (AP Series) running at 24 rev/sec in Type D installation (fully ducted). It illustrates a duty of 2.5 m³/s at 150Pa static pressure.

1 **Diameter of fan: 63cm** (630mm)

2 **Fan speed: 4 poles** (24 rev/sec)

3 **Number of blades: 5**

4 **Hub diameter: 150mm**

5 **Air volume flow: 2.5m³/s**

6 **Static pressure: 150 Pa**
no correction is required as the curve is plotted for Type D installation.

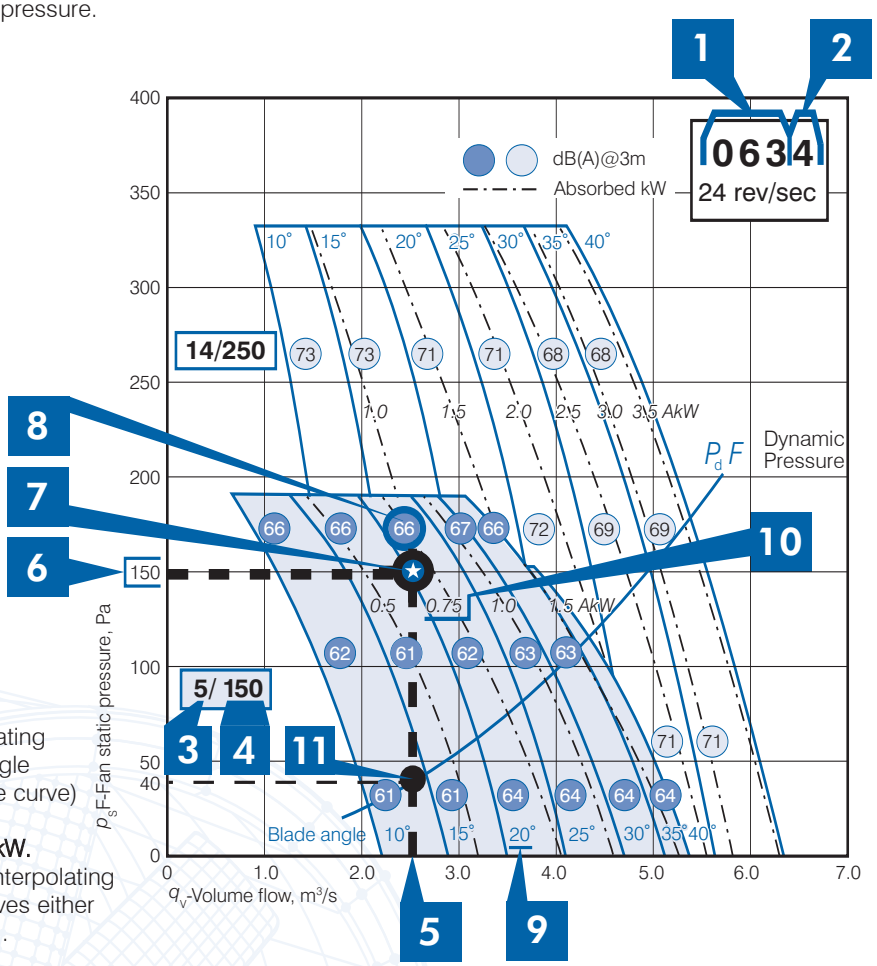
7 **Duty point:** ✪
The point where the air volume flow line intersects with the static pressure line.

8 **Estimated sound: 66dB(A)**
Estimated sound is the value (in the circle) which is the closest to the duty point.

9 **Blade angle setting: 20°**
The blade angle is determined by interpolating a curve between the two defined blade angle curves either side of duty point. (Solid blue curve)

10 **Fan impeller absorbed power: P_R = 0.65kW.**
The fan impeller power is determined by interpolating a curve between the two defined AkW curves either side of the duty point (broken black curve).

11 **Dynamic pressure: 39Pa**
Dynamic pressure is the Y-axis value where the dynamic pressure curve intersects the vertical line between air flow and duty point.



The **Fan Total efficiency** can be calculated by using the formula: $\frac{q_v \times p_tF}{10P_R} = \frac{2.5 \times (150+39)}{10 \times 0.65} = 73\%$

where:

q_v = volume flow, m³/s

p_tF = fan total pressure, Pa

= $p_sF + p_dF$

P_R = fan impeller power, kW