DATA FOR CALCULATING THE SPIRALFAN

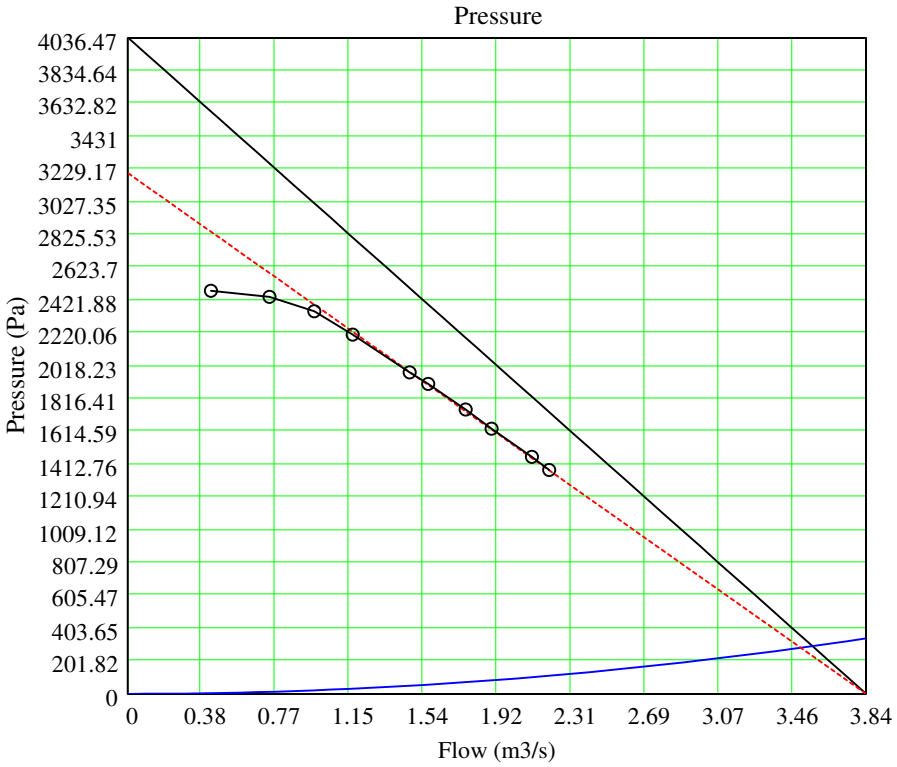
$n := 1450$	Rotating speed (rpm)
$D1 := .45$	Diameter 1 at the fan (m)
$D2 := .895$	Diameter 2 at the fan (m)
$qmax := 3.976 \cdot \frac{n}{1500}$	Max flow throe the fan (m3/s)
$dens := 1.17$	Air densty (kg/m3)
$nv := 6$	Number of wings (st)
$k := 0.88$	Stodola slip cofficient (Varyies about 0 and 1)

END DATA

The diagram in below shows the theory of the calculations of the spiralfan. The black circles is the measured values of the fan and the red line is the predicted pressure when it is compensated for the slip, the black line is the maximum pressure. The conclution of this is that the effenciy is near 100%. I can today not explain why SPI get the effenciy to 90 %. The sound level proof the high effenciy with 72.5 db(A), and a fan who has 85 % effenciy have a sound level about 85 db(A) at the same surcomstances.

Beräkningar av Spiralfläkt

pressure = 1601.20	Pressure (Pa)	$\beta 1 \cdot \frac{180}{\pi} = 35.27$	Inlet bladeangle (degrees)
Power = 3241.21	Effect (W)	$\beta 2 \cdot \frac{180}{\pi} = 19.58$	Outlet bladeangle (degrees)
Pwmax = 3264.81	qmaximum = 2.106		



The curve below shows the effect on the spiralfan when you adding the blue curve and the red curve and multiplying this with the flow. Then you got this red curve below.