

LAMPIRAN

Lampiran 1. Nilai Cl/Cd airfoil NACA 4712, NACA 4412, NACA 6412

NACA 4712		NACA 4412		NACA 6412	
Alpha	Cl/Cd	Alpha	Cl/Cd	Alpha	Cl/Cd
-1,0E+01	-3,5E+01	-1,0E+01	-3,6E+01	-1,0E+01	-1,9E+01
-9,5E+00	-3,3E+01	-9,5E+00	-3,5E+01	-9,5E+00	-1,7E+01
-9,0E+00	-3,0E+01	-9,0E+00	-3,3E+01	-9,0E+00	-1,6E+01
-8,5E+00	-2,7E+01	-8,5E+00	-3,5E+01	-8,5E+00	-1,4E+01
-8,0E+00	-2,4E+01	-8,0E+00	-3,5E+01	-8,0E+00	-1,2E+01
-7,5E+00	-2,0E+01	-7,5E+00	-3,2E+01	-7,5E+00	-9,2E+00
-7,0E+00	-1,6E+01	-7,0E+00	-2,8E+01	-7,0E+00	-6,8E+00
-6,5E+00	-1,1E+01	-6,5E+00	-2,5E+01	-6,5E+00	-2,3E+00
-6,0E+00	-5,2E+00	-6,0E+00	-2,0E+01	-6,0E+00	3,3E+00
-5,5E+00	1,1E+00	-5,5E+00	-1,5E+01	-5,5E+00	9,0E+00
-5,0E+00	7,8E+00	-5,0E+00	-9,4E+00	-5,0E+00	1,6E+01
-4,5E+00	1,6E+01	-4,5E+00	-3,0E+00	-4,5E+00	2,3E+01
-4,0E+00	2,4E+01	-4,0E+00	3,9E+00	-4,0E+00	3,0E+01
-3,5E+00	3,2E+01	-3,5E+00	1,1E+01	-3,5E+00	3,8E+01
-3,0E+00	4,1E+01	-3,0E+00	1,9E+01	-3,0E+00	4,6E+01
-2,5E+00	5,2E+01	-2,5E+00	2,7E+01	-2,5E+00	5,4E+01
-2,0E+00	6,4E+01	-2,0E+00	3,5E+01	-2,0E+00	6,1E+01
-1,5E+00	7,5E+01	-1,5E+00	4,3E+01	-1,5E+00	6,9E+01
-1,0E+00	8,6E+01	-1,0E+00	5,2E+01	-1,0E+00	7,6E+01
-5,0E-01	9,8E+01	-5,0E-01	6,0E+01	-5,0E-01	8,2E+01
0,0E+00	1,1E+02	0,0E+00	6,9E+01	0,0E+00	8,8E+01
5,0E-01	1,3E+02	5,0E-01	8,3E+01	5,0E-01	9,5E+01
1,0E+00	1,4E+02	1,0E+00	9,7E+01	1,0E+00	1,0E+02
1,5E+00	1,5E+02	1,5E+00	1,1E+02	1,5E+00	1,2E+02
2,0E+00	1,5E+02	2,0E+00	1,1E+02	2,5E+00	1,3E+02
2,5E+00	1,3E+02	2,5E+00	1,2E+02	3,0E+00	1,4E+02
3,0E+00	1,2E+02	3,0E+00	1,2E+02	3,5E+00	1,4E+02
3,5E+00	1,2E+02	3,5E+00	1,2E+02	4,0E+00	1,4E+02
4,0E+00	1,1E+02	4,0E+00	1,3E+02	4,5E+00	1,4E+02

4,5E+00	1,1E+02	4,5E+00	1,3E+02	5,0E+00	1,4E+02
5,0E+00	1,0E+02	5,0E+00	1,3E+02	5,5E+00	1,5E+02
5,5E+00	9,8E+01	5,5E+00	1,3E+02	6,0E+00	1,5E+02
6,0E+00	9,3E+01	6,0E+00	1,3E+02	6,5E+00	1,5E+02
6,5E+00	9,0E+01	6,5E+00	1,3E+02	7,0E+00	1,5E+02
7,0E+00	8,9E+01	7,0E+00	1,3E+02	7,5E+00	1,5E+02
7,5E+00	8,7E+01	7,5E+00	1,2E+02	8,0E+00	1,4E+02
8,0E+00	8,4E+01	8,0E+00	1,1E+02	8,5E+00	1,4E+02
8,5E+00	8,2E+01	8,5E+00	1,0E+02	9,0E+00	1,3E+02
9,0E+00	8,0E+01	9,0E+00	9,5E+01	9,5E+00	1,1E+02
9,5E+00	7,7E+01	9,5E+00	9,0E+01	1,0E+01	9,6E+01
1,0E+01	7,4E+01	1,0E+01	8,5E+01	1,1E+01	8,4E+01



Lampiran 2. Nilai Cp terhadap Tip Speed Ratio (TSR)

NACA 4412 Simulation		NACA 4712 Simulation		NACA 6412 Simulation	
TSR	Cp	TSR	Cp	TSR	Cp
1,00E+00	2,79E-02	1,00E+00	4,07E-02	1,00E+00	3,90E-02
1,50E+00	5,00E-02	1,50E+00	7,45E-02	1,50E+00	6,83E-02
2,00E+00	9,12E-02	2,00E+00	1,29E-01	2,00E+00	1,16E-01
2,50E+00	1,72E-01	2,50E+00	2,13E-01	2,50E+00	1,99E-01
3,00E+00	2,87E-01	3,00E+00	3,25E-01	3,00E+00	3,09E-01
3,50E+00	3,84E-01	3,50E+00	4,10E-01	3,50E+00	3,98E-01
4,00E+00	4,28E-01	4,00E+00	4,37E-01	4,00E+00	4,22E-01
4,50E+00	4,33E-01	4,50E+00	4,31E-01	4,50E+00	4,16E-01
5,00E+00	4,22E-01	5,00E+00	4,11E-01	5,00E+00	3,95E-01
5,50E+00	4,03E-01	5,50E+00	3,82E-01	5,50E+00	3,63E-01
6,00E+00	3,77E-01	6,00E+00	3,44E-01	6,00E+00	3,23E-01
6,50E+00	3,45E-01	6,50E+00	2,98E-01	6,50E+00	2,72E-01
7,00E+00	3,08E-01	7,00E+00	2,44E-01	7,00E+00	2,13E-01



Lampiran 3. Nilai kecepatan putar terhadap daya yang dihasilkan oleh airfoil NACA 4412

NACA 4412									
Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]
1,00E+0	-	2,00E+0	-	3,00E+0	-	4,00E+0	-	5,00E+0	-
2	1,39E+00	2	1,68E+01	2	5,51E+01	2	1,27E+02	2	2,42E+02
1,00E+0	7,97E+00	2,00E+0	-	3,00E+0	-	4,00E+0	-	5,00E+0	-
2	00	2	1,11E+01	2	5,54E+01	2	1,35E+02	2	2,60E+02
1,00E+0	3,23E+01	2,00E+0	1,37E+01	3,00E+0	-	4,00E+0	-	5,00E+0	-
2	01	2	01	2	3,76E+01	2	1,26E+02	2	2,61E+02
1,00E+0	5,65E+01	2,00E+0	6,38E+01	3,00E+0	9,24E+00	4,00E+0	-	5,00E+0	-
2	01	2	01	2	00	2	8,92E+01	2	2,36E+02
1,00E+0	6,05E+01	2,00E+0	1,46E+02	3,00E+0	9,12E+01	4,00E+0	-	5,00E+0	-
2	01	2	02	2	01	2	1,38E+01	2	1,74E+02
1,00E+0	6,14E+01	2,00E+0	2,59E+02	3,00E+0	2,15E+02	4,00E+0	1,09E+02	5,00E+0	-
2	01	2	02	2	02	2	02	2	6,37E+01
1,00E+0	6,74E+01	2,00E+0	3,77E+02	3,00E+0	3,88E+02	4,00E+0	2,79E+02	5,00E+0	1,06E+02
2	01	2	02	2	02	2	02	2	02
1,00E+0	7,70E+01	2,00E+0	4,52E+02	3,00E+0	6,09E+02	4,00E+0	5,10E+02	5,00E+0	3,34E+02
2	01	2	02	2	02	2	02	2	02
1,00E+0	8,97E+01	2,00E+0	4,80E+02	3,00E+0	8,73E+02	4,00E+0	8,05E+02	5,00E+0	6,26E+02
2	01	2	02	2	02	2	02	2	02

Lampiran 4. Nilai kecepatan putar terhadap daya yang dihasilkan oleh airfoil NACA 4712

NACA 4712 Simulation									
Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]
1,00E+0 2	2,46E+ 00	2,00E+0 2	2,45E+ 01	3,00E+0 2	8,04E+ 01	4,00E+0 2	1,86E+ 02	5,00E+0 2	3,57E+ 02
1,00E+0 2	7,07E+ 00	2,00E+0 2	1,97E+ 01	3,00E+0 2	8,22E+ 01	4,00E+0 2	1,96E+ 02	5,00E+0 2	3,78E+ 02
1,00E+0 2	3,27E+ 01	2,00E+0 2	4,33E+ 00	3,00E+0 2	6,65E+ 01	4,00E+0 2	1,90E+ 02	5,00E+0 2	3,84E+ 02
1,00E+0 2	6,27E+ 01	2,00E+0 2	5,66E+ 01	3,00E+0 2	2,14E+ 01	4,00E+0 2	1,58E+ 02	5,00E+0 2	3,64E+ 02
1,00E+0 2	7,49E+ 01	2,00E+0 2	1,42E+ 02	3,00E+0 2	6,15E+ 01	4,00E+0 2	8,51E+ 01	5,00E+0 2	3,08E+ 02
1,00E+0 2	8,55E+ 01	2,00E+0 2	2,62E+ 02	3,00E+0 2	1,91E+ 02	4,00E+0 2	3,47E+ 01	5,00E+0 2	2,02E+ 02
1,00E+0 2	9,84E+ 01	2,00E+0 2	4,02E+ 02	3,00E+0 2	3,70E+ 02	4,00E+0 2	2,12E+ 02	5,00E+0 2	3,74E+ 01
1,00E+0 2	1,15E+ 02	2,00E+0 2	5,02E+ 02	3,00E+0 2	6,01E+ 02	4,00E+0 2	4,53E+ 02	5,00E+0 2	1,92E+ 02
1,00E+0 2	1,34E+ 02	2,00E+0 2	5,62E+ 02	3,00E+0 2	8,83E+ 02	4,00E+0 2	7,59E+ 02	5,00E+0 2	4,98E+ 02

Lampiran 5. Nilai kecepatan putar terhadap daya yang dihasilkan oleh airfoil NACA 6412

NACA 6412 Simulation									
Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]	Omega [rpm]	P [W]
1,00E+0	-	2,00E+0	-	3,00E+0	-	4,00E+0	-	5,00E+0	-
2	2,91E+00	2	2,84E+01	2	9,29E+01	2	2,15E+02	2	4,12E+02
1,00E+0	6,55E+00	2,00E+0	-	3,00E+0	-	4,00E+0	-	5,00E+0	-
2	00	2	2,33E+01	2	9,50E+01	2	2,27E+02	2	4,37E+02
1,00E+0	3,16E+01	2,00E+0	4,98E-01	3,00E+0	-	4,00E+0	-	5,00E+0	-
2	01	2	01	2	7,86E+01	2	2,21E+02	2	4,43E+02
1,00E+0	6,01E+01	2,00E+0	5,24E+01	3,00E+0	-	4,00E+0	-	5,00E+0	-
2	01	2	01	2	3,42E+01	2	1,86E+02	2	4,22E+02
1,00E+0	6,97E+01	2,00E+0	1,36E+02	3,00E+0	4,83E+01	4,00E+0	-	5,00E+0	-
2	01	2	02	2	01	2	1,15E+02	2	3,64E+02
1,00E+0	7,65E+01	2,00E+0	2,53E+02	3,00E+0	1,77E+02	4,00E+0	3,98E+00	5,00E+0	-
2	01	2	02	2	02	2	00	2	2,59E+02
1,00E+0	8,83E+01	2,00E+0	3,85E+02	3,00E+0	3,53E+02	4,00E+0	1,80E+02	5,00E+0	-
2	01	2	02	2	02	2	02	2	9,74E+01
1,00E+0	1,04E+02	2,00E+0	4,80E+02	3,00E+0	5,79E+02	4,00E+0	4,19E+02	5,00E+0	1,31E+02
2	02	2	02	2	02	2	02	2	02
1,00E+0	1,24E+02	2,00E+0	5,30E+02	3,00E+0	8,52E+02	4,00E+0	7,21E+02	5,00E+0	4,35E+02
2	02	2	02	2	02	2	02	2	02