LAMPIRAN

Lampiran 1. Perolehan Data Parameter Pengukuran *Coefficient Of Performance*

a. Parameter pengukuran *coefficient of perfromance* unit *prototype mini water chiller* dalam kondisi standar.

Pengulangan ke-	T_1 (^{0}C)	T_2 (^{0}C)	T_4 (^{0}C)
1	26,00	56,80	24,80
2	26,20	56,20	24,60
3	26,40	56,00	24,00
4	26,00	57,00	25,00
5	26,30	56,80	24,00
6	26,50	56,50	24,80
7	26,00	57,00	24,60
8	25,80	56,20	24,70
9	27,00	56,20	25,00
10	26,80	56,00	24,80
11	26,50	57,00	24,30
12	26,00	56,80	24,00
13	26,40	56,60	24,60
14	26,30	57,00	25,00
15	26,00	57,00	24,80
16	25,90	56,40	24,30
17	26,60	56,30	24,60
18	25,80	56,50	25,00
19	26,00	57,00	24,00
20	26,00	56,80	24,60

b. Parameter pengukuran *coefficient of perfromance* unit *prototype mini water chiller* variasi temperatur kerja katup ekspansi 20^{0}C.

Pengulangan ke-	T_1 (^{0}C)	T_2 (^{0}C)	T_4 (^{0}C)
1	27,00	48,00	21,00
2	26,50	47,40	21,30

3	26,00	47,30	22,00
4	27,50	47,00	21,80
5	26,20	48,00	21,00
6	26,20	48,00	21,00
7	26,80	48,00	21,60
8	27,00	47,60	22,00
9	26,60	47,20	22,30
10	26,30	48,00	21,20
11	26,80	48,20	21,00
12	27,10	47,80	20,80
13	26,50	47,60	21,00
14	26,40	47,30	21,50
15	26,40	48,00	20,60
16	26,00	48,20	20,00
17	26,40	47,70	20,40
18	26,50	47,50	20,80
19	26,80	48,00	21,00
20	27,00	48,00	21,00

c. Parameter pengukuran *coefficient of perfromance* unit prototype *mini water chiller* variasi temperatur kerja katup ekspansi 17^0C.

Pengulangan ke-	T_1 (^{0}C)	T_2 (^{0}C)	T_4 (^{0}C)
1	26,70	44,00	18,20
2	27,00	44,50	18,00
3	26,70	44,30	18,50
4	26,50	43,80	19,00
5	26,80	44,00	18,80
6	26,20	43,50	18,30
7	26,60	43,30	19,00
8	26,30	43,70	19,20
9	26,80	44,00	18,00
10	27,00	44,20	18,20
11	26,50	43,50	18,40
12	26,20	43,80	18,30
13	26,80	43,80	19,00
14	26,80	44,00	18,20

15	26,40	44,00	18,50
16	26,60	44,30	18,80
17	26,80	43,50	19,00
18	26,50	43,60	18,40
19	26,70	44,00	18,00
20	26,70	44,20	18,00

d. Parameter pengukuran *coefficient of perfromance* unit *prototype mini water chiller* variasi temperatur kerja katup ekspansi 14^0C.

Pengulangan ke-	T_1 (^{0}C)	T_2 (^{0}C)	T_4 (^{0}C)
1	26,00	40,00	15,70
2	25,70	39,40	15,50
3	26,00	40,00	15,70
4	25,60	39,60	15,60
5	25,70	39,40	15,50
6	26,00	39,50	15,80
7	25,60	39,70	15,70
8	25,80	40,00	16,00
9	25,70	39,40	15,50
10	26,10	39,90	15,80
11	25,80	39,70	15,20
12	25,70	39,80	15,60
13	25,90	39,50	16,00
14	26,00	39,80	16,20
15	25,70	39,40	15,50
16	25,70	40,00	15,30
17	26,00	40,30	15,40
18	25,60	39,60	15,60
19	25,80	39,70	15,20
20	26,00	40,00	15,70

e. Parameter pengukuran *coefficient of perfromance* unit *prototype mini water chiller* variasi temperatur kerja katup ekspansi 11^0C.

Pengulangan ke-	T_1 (^{0}C)	T_2 (^{0}C)	T_4 (^{0}C)
1	25,70	37,00	13,00
2	26,00	37,50	12,50
3	25,50	37,50	12,80
4	25,60	37,20	13,00
5	25,70	37,00	13,00
6	25,50	37,00	12,40
7	26,00	37,80	12,20
8	25,70	37,60	12,00
9	25,30	37,00	12,30
10	25,80	37,70	12,50
11	25,50	37,20	12,80
12	25,80	37,50	13,00
13	26,00	38,00	12,70
14	26,00	38,00	12,60
15	25,40	37,20	12,50
16	25,70	37,60	12,50
17	25,50	37,20	12,40
18	25,50	37,00	12,80
19	25,80	37,50	13,00
20	25,60	37,40	13,00

f. Parameter pengukuran *coefficient of perfromance* unit *prototype mini water chiller* variasi temperatur kerja katup ekspansi 8^0C.

Pengulangan ke-	T_1 (^{0}C)	T_2 (^{0}C)	T_4 (^{0}C)
1	25,00	35,00	9,50
2	25,60	35,80	9,30
3	25,50	35,60	9,80
4	25,20	35,50	9,50
5	25,30	35,40	9,70

6	25,50	35,80	10,00
7	25,30	35,50	9,50
8	25,50	35,60	9,50
9	25,00	35,00	9,80
10	25,00	35,00	9,90
11	25,30	35,40	9,60
12	25,50	35,70	9,40
13	25,50	35,50	9,50
14	25,50	35,50	9,70
15	25,40	35,40	9,60
16	25,40	35,80	9,30
17	25,70	35,80	9,70
18	25,20	35,40	9,60
19	25,40	35,70	10,00
20	25,60	35,70	9,50

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Lampiran 2. Hasil Uji Statistik Inperensial

Tabel. Uji Normalitas Data

Tests of Normality				
	Variasi Temperatur kerja katup ekspansi	Shapiro-Wilk		
		Statistic	df	Sig,
Coefficient Of Performance	A_1	0,933	20	0,174
	A_2	0,938	20	0,222
	A_3	0,909	20	0,062
	A_4	0,932	20	0,166
	A_5	0,939	20	0,231

Tabel Uji Homogenitas Varians

Test of Homogeneity of Variances			
Data *Coefficient Of Performance*			
Levene Statistic	*df1*	*df2*	*Sig,*
2,327	4	95	0,062

Tabel Analisis Varians Satu Jalur

ANOVA Data *Coefficient Of Performance*					
	Sum of Squares	*df*	*Mean Square*	*F*	*Sig,*
Between Groups	19640,644	4	4910,161	5081,080	0,000
Within Groups	91,804	95	0,966		
Total	19732,448	99			

Tabel Hasil Uji Posc Hoc Test

Multiple Comparisons Dependent Variable: Data *Coefficient Of Performance* *Tukey HSD*						
(I) Variasi	*(J) Variasi*	*Mean Difference (I-J)*	*Std Error*	*Sig,*	*95% Confidence Interval*	
					Lower Bound	*Upper Bound*
A_1	A_2	-8,09700*	0,31086	0,000	-8,9615	-7,2325
	A_3	-17,64250*	0,31086	0,000	-18,5070	-16,7780
	A_4	-28,44450*	0,31086	0,000	-29,3090	-27,5800
	A_5	-39,28750*	0,31086	0,000	-40,1520	-38,4230
A_2	A_1	8,09700*	0,31086	0,000	7,2325	8,9615
	A_3	-9,54550*	0,31086	0,000	-10,4100	-8,6810

	A_4	-20,34750*	0,31086	0,000	-21,2120	-19,4830
	A_5	-31,19050*	0,31086	0,000	-32,0550	-30,3260
A_3	A_1	17,64250*	0,31086	0,000	16,7780	18,5070
	A_2	9,54550*	0,31086	0,000	8,6810	10,4100
	A_4	-10,80200*	0,31086	0,000	-11,6665	-9,9375
	A_5	-21,64500*	0,31086	0,000	-22,5095	-20,7805
A_4	A_1	28,44450*	0,31086	0,000	27,5800	29,3090
	A_2	20,34750*	0,31086	0,000	19,4830	21,2120
	A_3	10,80200*	0,31086	0,000	9,9375	11,6665
	A_5	-10,84300*	0,31086	0,000	-11,7075	-9,9785
A_5	A_1	39,28750*	0,31086	0,000	38,4230	40,1520
	A_2	31,19050*	0,31086	0,000	30,3260	32,0550
	A_3	21,64500*	0,31086	0,000	20,7805	22,5095
	A_4	10,84300*	0,31086	0,000	9,9785	11,7075

**, The mean difference is significant at the 0,05 level,*

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Lampiran 3. Foto Dokumentasi Pelaksanaan Penelitian

Gambar Proses Pengambilan Data

Gambar *Prototype Mini Water Chiller*

Gambar Rancangan *Termoelectrick Cooler*

T_1	T_2	T_4

Gamabar hasil pengukuran parameter pengujian *coefficient of performance* kondisi unit standar

T_1	T_2	T_4

Gamabar hasil pengukuran parameter pengujian *coefficient of performance* kondisi temperatur katup ekspansi 20^0C

T_1	T_2	T_4

Gamabar hasil pengukuran parameter pengujian *coefficient of performance* kondisi temperatur katup ekspansi 17^0C

T_1	T_2	T_4

Gamabar hasil pengukuran parameter pengujian *coefficient of performance* kondisi temperatur katup ekspansi 14^0C

T_1	T_2	T_4

Gamabar hasil pengukuran parameter pengujian *coefficient of performance* kondisi temperatur katup ekspansi 11^0C

T_1	T_2	T_4

Gamabar hasil pengukuran parameter pengujian *coefficient of performance* kondisi temperatur katup ekspansi 8^0C

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