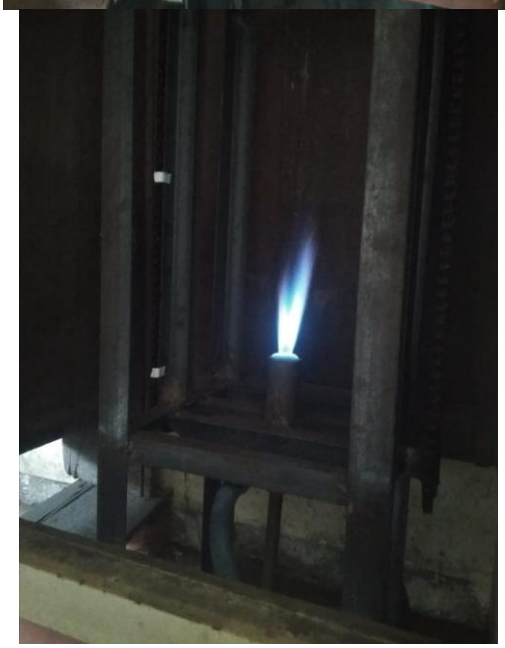
LAMPIRAN

Stuktur burner dan burner yang sudah di rakit

Proses Pembacaan data termokopel di (ardiuno chanel) dan amplifier



Proses pengambilan bentuk badan api melalui camera

V.BB = 0,462 m/s ,P.BB = 0.50 BAR, V.UDARA = 16,985 m/s , P.UDARA = 6 BAR

H (mm)	r_0	r_1	S	AS	Ts	T∞	Q
	mm				^{0}K		Watt
110 – 120	2,60	9,50	10,149	461,608	743	300	7,764
100 – 110	9,50	11,25	10,152	661,452	833	300	17,754
90 – 100	11,25	12,05	10,018	726,644	1083	300	56,345
80 – 90	11,85	12,05	10,002	750,610	1278	300	113,188
70 – 80	12,05	11,65	10,008	744,775	1223	300	94,132
60 – 70	11,65	10,90	10,028	710,059	1053	300	49,172
50 – 60	10,90	10,60	10,004	675,404	803	300	15,612
40 – 50	10,90	11,85	10,028	643,933	743	300	10,831
30 – 40	9,85	9,60	10,003	610,921	673	300	6,825
20 – 30	9,60	8,90	10,024	582,321	623	300	4,706
10 – 20	8.90	7,60	10,084	522,460	483	300	1,372
0 – 10	7,60	15,0	12,440	882,810	443	300	1,522
Q total							**31,602**

V.BB = 0,462 m/s ,P.BB = 0.50 BAR, V.UDARA = 20,170 m/s , P.UDARA = 6 BAR

H (mm)	R_2	R_1	S	AS	Ts	T∞	Q
	mm				^{0}K		Watt
100 – 110	1,95	6,30	10,905	282,498	733	300	4,497
90 – 100	6,30	11,10	11,092	606,041	993	300	33,146
80 – 90	11,10	12,60	10,112	752,505	1299	300	121,179
70 – 80	12,60	12,10	10,012	776,549	1253	300	108,201
60 – 70	12,10	11,80	10,004	750,798	1063	300	54,031
50 – 60	11,80	10,65	10,066	709,576	843	300	20,002
40 – 50	10,65	9,90	10,028	647,082	763	300	12,144
30 – 40	9,90	9,15	10,028	599,850	723	300	12,144
20 – 30	9,15	8,90	10,003	566,947	573	300	3,205
10 – 20	8,90	13,15	10,866	752,305	523	300	2,848
0 – 10	13,15	15,00	10,170	898,909	448	300	1,642
Q total							**33,630**

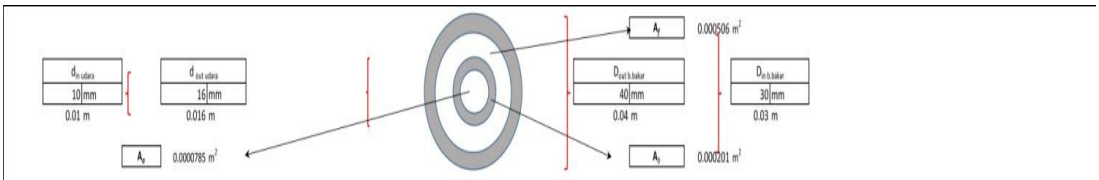
V.BB = 0,923 m/s ,P.BB = 0.50 BAR, V.UDARA = 16,985 m/s , P.UDARA = 9 BAR

H (mm)	r_0	r_1	S	AS	Ts	T∞	Q
	mm				^{0}K		Watt
110 – 120	1.05	4.15	10.469	170.946	620	300	6.085
100 – 110	4.15	7.25	10.469	374.765	720	300	20.488
90 – 100	7.25	10.25	10.440	573.695	970	300	77.388
80 – 90	10.25	12.15	10.179	715.943	900	300	76.523
70 – 80	12.15	13.00	10.036	792.558	860	300	73.687
60 – 70	13.00	12.80	10.002	810.282	790	300	58.289
50 – 60	12.80	12.30	10.012	789.125	680	300	36.544
40 – 50	12.30	11.75	10.015	756.311	535	300	17.931
30 – 40	11.75	11.50	10.003	730.278	420	300	9.215
20 – 30	11.50	10.90	10.018	704.625	380	300	6.941
10 – 20	10.90	10.50	10.008	672.497	270	300	3.006
0 – 10	10.50	15.00	10.966	878.036	150	300	1.191
Q Total							**32,275**

V.BB = 0,923 m/s ,P.BB = 0.50 BAR, V.UDARA = 20,170 m/s , P.UDARA = 9 BAR

H (mm)	R_2	R_1	S	AS	Ts	T∞	Q
	mm				^{0}K		Watt
120 – 130	1.15	6.30	11.248	263.130	470	300	4.426
110 – 120	6.30	10.45	10.827	569.443	730	300	32.415
100 – 110	10.45	13.00	10.320	759.893	900	300	81.220
90 – 100	13.00	13.80	10.032	844.209	970	300	113.878
80 – 90	13.80	14.20	10.008	879.903	860	300	81.808
70 – 80	14.20	14.75	10.015	910.404	735	300	52.874
60 – 70	14.75	14.45	10.004	917.293	652	300	37.655
50 – 60	14.45	14.25	10.002	901.360	550	300	23.033
40 – 50	14.25	13.90	10.006	884.451	470	300	14.877
30 – 40	13.90	13.30	10.018	855.616	390	300	8.981
20 – 30	13.30	11.35	10.188	788.589	330	300	5.549
10 – 20	11.35	9.45	10.179	664.804	230	300	2.108
0 – 10	9.45	15.00	11.437	878.045	180	300	1.693
Q total							**35.424**

Perhitungan Rasio Ekivalen (Ø)



B.bakar		Tekanan b. bakar	Flow bahan bakar			Keluaran bahan bakar di flowmeter				Luas Keluaran bahan bakar di burner	Kecepatan bahan bakar keluar burner	rapat massa LPG	Laju aliran massa keluar burner	Tekanan Udara	Flow Udara			Luas Keluaran Udara di burner	Kecepatan udara keluar burner	Kerapatan massa udara	Laju aliran massa keluar burner	AFR_{actual}	$AFR_{teoritik}$	ϕ	Luas Antara
F		P_f	Q_f			$A_{f\ di\ tengki}$	$A_{f\ di\ flowmeter}$		$V_{f\ flowmeter}$	A_{fjet}	V_{fjet}	ρ_f	m_f	P_a	Q_a			A_a	V_a	ρ_a	m_a				A_b
Kode	Jenis	BAR	LPM	m^3/menit	m^3/detik	m^2	Bukaan katup		m/s	m^2	m/s	kg/m^3	kg/detik	BAR	LPM	m^3/menit	m^3/detik	m^2	m/detik	kg/m^3	kg/detik	~	~	~	m^2
						D = 1cm	putaran	m^2																	
F1	LPG	0.5	3.5	0.0035	0.00005833	0.00007850	0.250	0.00001963	2.972	0.000506	0.462	2.58	0.000602	6.0	75.0	0.075	0.0012500	0.0000785	15.924	1.29	0.001613	2.68	15.60	5.82	0.000201
															80.0	0.080	0.0013333	0.0000785	16.985	1.29	0.001720	2.86	15.60	5.46	0.000201
															85.0	0.085	0.0014167	0.0000785	18.047	1.29	0.001828	3.04	15.60	5.14	0.000201
															90.0	0.090	0.0015000	0.0000785	19.108	1.29	0.001935	3.21	15.60	4.85	0.000201
															95.0	0.095	0.0015833	0.0000785	20.170	1.29	0.002043	3.39	15.60	4.60	0.000201
F1	LPG	0.75	3.5	0.0035	0.00005833	0.00007850	0.125	0.00000981	5.945	0.000506	0.923	2.58	0.0001505	9.0	80.0	0.080	0.0013333	0.0000785	16.985	1.29	0.001720	11.43	15.60	1.37	0.000201
															95.0	0.095	0.0015833	0.0000785	20.170	1.29	0.002043	13.57	15.60	1.15	0.000201
															110.0	0.110	0.0018333	0.0000785	23.355	1.29	0.002365	15.71	15.60	0.99	0.000201
															125.0	0.125	0.0020833	0.0000785	26.539	1.29	0.002688	17.86	15.60	0.87	0.000201
															140.0	0.140	0.0023333	0.0000785	29.724	1.29	0.003010	20.00	15.60	0.78	0.000201