

LAMPIRAN

Tabel lampiran 1 jadwal penelitian

No.	Urutan penelitian	Bulan ke-					
		I	II	III	IV	V	VI
1.	Studi pustaka						
2.	Seminar proposal tugas akhir						
3.	Instalasi <i>solar cell</i> tipe <i>Monocrystalline</i> dengan variasi intensitas cahaya						
4.	Pengambilan data						
5.	Pengolahan data dan analisa data						
6.	Seminar hasil tugas akhir						
7.	Ujian tugas akhir						

Tabel lampiran 2 Data Vmp (volt) dan Imp (A) 225 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	23.280	19:40:10	07/08/2025	1	2.471	19:45:20	07/08/2025
2	23.280	19:40:11	07/08/2025	2	2.471	19:45:21	07/08/2025
3	23.280	19:40:12	07/08/2025	3	2.471	19:45:22	07/08/2025
4	23.280	19:40:13	07/08/2025	4	2.471	19:45:23	07/08/2025
5	23.270	19:40:14	07/08/2025	5	2.471	19:45:24	07/08/2025
6	23.270	19:40:15	07/08/2025	6	2.471	19:45:25	07/08/2025
7	23.270	19:40:16	07/08/2025	7	2.471	19:45:26	07/08/2025
8	23.270	19:40:17	07/08/2025	8	2.471	19:45:27	07/08/2025
9	23.270	19:40:18	07/08/2025	9	2.471	19:45:28	07/08/2025
10	23.270	19:40:19	07/08/2025	10	2.471	19:45:29	07/08/2025
11	23.270	19:40:20	07/08/2025	11	2.471	19:45:30	07/08/2025
12	23.270	19:40:21	07/08/2025	12	2.471	19:45:31	07/08/2025
13	23.270	19:40:22	07/08/2025	13	2.471	19:45:32	07/08/2025
14	23.270	19:40:23	07/08/2025	14	2.471	19:45:33	07/08/2025
15	23.270	19:40:24	07/08/2025	15	2.471	19:45:34	07/08/2025
16	23.270	19:40:25	07/08/2025	16	2.471	19:45:35	07/08/2025
17	23.270	19:40:26	07/08/2025	17	2.471	19:45:36	07/08/2025
18	23.270	19:40:27	07/08/2025	18	2.471	19:45:37	07/08/2025
19	23.270	19:40:28	07/08/2025	19	2.471	19:45:38	07/08/2025
20	23.270	19:40:29	07/08/2025	20	2.471	19:45:39	07/08/2025
21	23.270	19:40:30	07/08/2025	21	2.471	19:45:40	07/08/2025
22	23.270	19:40:31	07/08/2025	22	2.471	19:45:41	07/08/2025
23	23.270	19:40:32	07/08/2025	23	2.471	19:45:42	07/08/2025
24	23.270	19:40:33	07/08/2025	24	2.471	19:45:43	07/08/2025
25	23.270	19:40:34	07/08/2025	25	2.471	19:45:44	07/08/2025
26	23.270	19:40:35	07/08/2025	26	2.471	19:45:45	07/08/2025
27	23.270	19:40:36	07/08/2025	27	2.471	19:45:46	07/08/2025
28	23.270	19:40:37	07/08/2025	28	2.471	19:45:47	07/08/2025
29	23.270	19:40:38	07/08/2025	29	2.471	19:45:48	07/08/2025
30	23.270	19:40:39	07/08/2025	30	2.471	19:45:49	07/08/2025
31	23.270	19:40:40	07/08/2025	31	2.471	19:45:50	07/08/2025
32	23.270	19:40:41	07/08/2025	32	2.471	19:45:51	07/08/2025
33	23.270	19:40:42	07/08/2025	33	2.471	19:45:52	07/08/2025
34	23.270	19:40:43	07/08/2025	34	2.471	19:45:53	07/08/2025
35	23.270	19:40:44	07/08/2025	35	2.471	19:45:54	07/08/2025
36	23.270	19:40:45	07/08/2025	36	2.471	19:45:55	07/08/2025
37	23.270	19:40:46	07/08/2025	37	2.471	19:45:56	07/08/2025
38	23.270	19:40:47	07/08/2025	38	2.471	19:45:57	07/08/2025
39	23.270	19:40:48	07/08/2025	39	2.471	19:45:58	07/08/2025
40	23.270	19:40:49	07/08/2025	40	2.471	19:45:59	07/08/2025
41	23.270	19:40:50	07/08/2025	41	2.471	19:46:00	07/08/2025
42	23.270	19:40:51	07/08/2025	42	2.471	19:46:01	07/08/2025
43	23.270	19:40:52	07/08/2025	43	2.471	19:46:02	07/08/2025
44	23.270	19:40:53	07/08/2025	44	2.471	19:46:03	07/08/2025
45	23.270	19:40:54	07/08/2025	45	2.471	19:46:04	07/08/2025
46	23.270	19:40:55	07/08/2025	46	2.471	19:46:05	07/08/2025
47	23.270	19:40:56	07/08/2025	47	2.471	19:46:06	07/08/2025
48	23.270	19:40:57	07/08/2025	48	2.471	19:46:07	07/08/2025
49	23.270	19:40:58	07/08/2025	49	2.471	19:46:08	07/08/2025
50	23.270	19:40:59	07/08/2025	50	2.471	19:46:09	07/08/2025
	23.271				2.471		

Tabel lampiran 3 Data Vmp (volt) dan Imp (A) 200 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	22.640	19:45:00	07/08/2025	1	2.421	19:38:00	07/08/2025
2	22.640	19:45:01	07/08/2025	2	2.421	19:38:01	07/08/2025
3	22.640	19:45:02	07/08/2025	3	2.421	19:38:02	07/08/2025
4	22.640	19:45:03	07/08/2025	4	2.421	19:38:03	07/08/2025
5	22.640	19:45:04	07/08/2025	5	2.421	19:38:04	07/08/2025
6	22.640	19:45:05	07/08/2025	6	2.421	19:38:05	07/08/2025
7	22.640	19:45:06	07/08/2025	7	2.421	19:38:06	07/08/2025
8	22.640	19:45:07	07/08/2025	8	2.421	19:38:07	07/08/2025
9	22.640	19:45:08	07/08/2025	9	2.421	19:38:08	07/08/2025
10	22.640	19:45:09	07/08/2025	10	2.421	19:38:09	07/08/2025
11	22.640	19:45:10	07/08/2025	11	2.421	19:38:10	07/08/2025
12	22.640	19:45:11	07/08/2025	12	2.421	19:38:11	07/08/2025
13	22.640	19:45:12	07/08/2025	13	2.421	19:38:12	07/08/2025
14	22.640	19:45:13	07/08/2025	14	2.421	19:38:13	07/08/2025
15	22.640	19:45:14	07/08/2025	15	2.421	19:38:14	07/08/2025
16	22.640	19:45:15	07/08/2025	16	2.421	19:38:15	07/08/2025
17	22.640	19:45:16	07/08/2025	17	2.421	19:38:16	07/08/2025
18	22.630	19:45:17	07/08/2025	18	2.420	19:38:17	07/08/2025
19	22.630	19:45:18	07/08/2025	19	2.420	19:38:18	07/08/2025
20	22.630	19:45:19	07/08/2025	20	2.420	19:38:19	07/08/2025
21	22.630	19:45:20	07/08/2025	21	2.420	19:38:20	07/08/2025
22	22.630	19:45:21	07/08/2025	22	2.420	19:38:21	07/08/2025
23	22.630	19:45:22	07/08/2025	23	2.420	19:38:22	07/08/2025
24	22.630	19:45:23	07/08/2025	24	2.420	19:38:23	07/08/2025
25	22.630	19:45:24	07/08/2025	25	2.420	19:38:24	07/08/2025
26	22.630	19:45:25	07/08/2025	26	2.420	19:38:25	07/08/2025
27	22.630	19:45:26	07/08/2025	27	2.420	19:38:26	07/08/2025
28	22.630	19:45:27	07/08/2025	28	2.420	19:38:27	07/08/2025
29	22.630	19:45:28	07/08/2025	29	2.420	19:38:28	07/08/2025
30	22.630	19:45:29	07/08/2025	30	2.420	19:38:29	07/08/2025
31	22.630	19:45:30	07/08/2025	31	2.420	19:38:30	07/08/2025
32	22.630	19:45:31	07/08/2025	32	2.420	19:38:31	07/08/2025
33	22.630	19:45:32	07/08/2025	33	2.420	19:38:32	07/08/2025
34	22.630	19:45:33	07/08/2025	34	2.420	19:38:33	07/08/2025
35	22.630	19:45:34	07/08/2025	35	2.420	19:38:34	07/08/2025
36	22.630	19:45:35	07/08/2025	36	2.420	19:38:35	07/08/2025
37	22.630	19:45:36	07/08/2025	37	2.420	19:38:36	07/08/2025
38	22.630	19:45:37	07/08/2025	38	2.420	19:38:37	07/08/2025
39	22.620	19:45:38	07/08/2025	39	2.419	19:38:38	07/08/2025
40	22.620	19:45:39	07/08/2025	40	2.419	19:38:39	07/08/2025
41	22.620	19:45:40	07/08/2025	41	2.419	19:38:40	07/08/2025
42	22.620	19:45:41	07/08/2025	42	2.419	19:38:41	07/08/2025
43	22.620	19:45:42	07/08/2025	43	2.419	19:38:42	07/08/2025
44	22.620	19:45:43	07/08/2025	44	2.419	19:38:43	07/08/2025
45	22.620	19:45:44	07/08/2025	45	2.419	19:38:44	07/08/2025
46	22.620	19:45:45	07/08/2025	46	2.419	19:38:45	07/08/2025
47	22.620	19:45:46	07/08/2025	47	2.419	19:38:46	07/08/2025
48	22.620	19:45:47	07/08/2025	48	2.419	19:38:47	07/08/2025
49	22.620	19:45:48	07/08/2025	49	2.419	19:38:48	07/08/2025
50	22.620	19:45:49	07/08/2025	50	2.419	19:38:49	07/08/2025
	22.631				2.420		

Tabel lampiran 4 Data Vmp (volt) dan Imp (A) 175 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	21.640	19:51:03	07/08/2025	1	2.330	19:38:00	07/08/2025
2	21.630	19:51:04	07/08/2025	2	2.329	19:38:01	07/08/2025
3	21.630	19:51:05	07/08/2025	3	2.329	19:38:02	07/08/2025
4	21.630	19:51:06	07/08/2025	4	2.329	19:38:03	07/08/2025
5	21.630	19:51:07	07/08/2025	5	2.329	19:38:04	07/08/2025
6	21.630	19:51:08	07/08/2025	6	2.329	19:38:05	07/08/2025
7	21.630	19:51:09	07/08/2025	7	2.329	19:38:06	07/08/2025
8	21.630	19:51:10	07/08/2025	8	2.329	19:38:07	07/08/2025
9	21.630	19:51:11	07/08/2025	9	2.329	19:38:08	07/08/2025
10	21.630	19:51:12	07/08/2025	10	2.329	19:38:09	07/08/2025
11	21.630	19:51:13	07/08/2025	11	2.329	19:38:10	07/08/2025
12	21.630	19:51:14	07/08/2025	12	2.329	19:38:11	07/08/2025
13	21.630	19:51:15	07/08/2025	13	2.329	19:38:12	07/08/2025
14	21.630	19:51:16	07/08/2025	14	2.329	19:38:13	07/08/2025
15	21.630	19:51:17	07/08/2025	15	2.329	19:38:14	07/08/2025
16	21.630	19:51:18	07/08/2025	16	2.329	19:38:15	07/08/2025
17	21.630	19:51:19	07/08/2025	17	2.329	19:38:16	07/08/2025
18	21.630	19:51:20	07/08/2025	18	2.329	19:38:17	07/08/2025
19	21.630	19:51:21	07/08/2025	19	2.329	19:38:18	07/08/2025
20	21.630	19:51:22	07/08/2025	20	2.329	19:38:19	07/08/2025
21	21.630	19:51:23	07/08/2025	21	2.329	19:38:20	07/08/2025
22	21.630	19:51:24	07/08/2025	22	2.329	19:38:21	07/08/2025
23	21.630	19:51:25	07/08/2025	23	2.329	19:38:22	07/08/2025
24	21.630	19:51:26	07/08/2025	24	2.329	19:38:23	07/08/2025
25	21.630	19:51:27	07/08/2025	25	2.329	19:38:24	07/08/2025
26	21.630	19:51:28	07/08/2025	26	2.329	19:38:25	07/08/2025
27	21.630	19:51:29	07/08/2025	27	2.329	19:38:26	07/08/2025
28	21.630	19:51:30	07/08/2025	28	2.329	19:38:27	07/08/2025
29	21.630	19:51:31	07/08/2025	29	2.329	19:38:28	07/08/2025
30	21.620	19:51:32	07/08/2025	30	2.328	19:38:29	07/08/2025
31	21.620	19:51:33	07/08/2025	31	2.328	19:38:30	07/08/2025
32	21.620	19:51:34	07/08/2025	32	2.328	19:38:31	07/08/2025
33	21.620	19:51:35	07/08/2025	33	2.328	19:38:32	07/08/2025
34	21.620	19:51:36	07/08/2025	34	2.328	19:38:33	07/08/2025
35	21.620	19:51:37	07/08/2025	35	2.328	19:38:34	07/08/2025
36	21.620	19:51:38	07/08/2025	36	2.328	19:38:35	07/08/2025
37	21.620	19:51:39	07/08/2025	37	2.328	19:38:36	07/08/2025
38	21.620	19:51:40	07/08/2025	38	2.328	19:38:37	07/08/2025
39	21.620	19:51:41	07/08/2025	39	2.328	19:38:38	07/08/2025
40	21.620	19:51:42	07/08/2025	40	2.328	19:38:39	07/08/2025
41	21.620	19:51:43	07/08/2025	41	2.328	19:38:40	07/08/2025
42	21.620	19:51:44	07/08/2025	42	2.328	19:38:41	07/08/2025
43	21.620	19:51:45	07/08/2025	43	2.328	19:38:42	07/08/2025
44	21.620	19:51:46	07/08/2025	44	2.328	19:38:43	07/08/2025
45	21.620	19:51:47	07/08/2025	45	2.328	19:38:44	07/08/2025
46	21.620	19:51:48	07/08/2025	46	2.328	19:38:45	07/08/2025
47	21.620	19:51:49	07/08/2025	47	2.328	19:38:46	07/08/2025
48	21.620	19:51:50	07/08/2025	48	2.328	19:38:47	07/08/2025
49	21.620	19:51:51	07/08/2025	49	2.328	19:38:48	07/08/2025
50	21.620	19:51:52	07/08/2025	50	2.328	19:38:49	07/08/2025
	21.626				2.328		

Tabel lampiran 5 Data Vmp (volt) dan Imp (A) 150 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	20.500	19:56:10	07/08/2025	1	2.225	19:38:00	07/08/2025
2	20.500	19:56:11	07/08/2025	2	2.225	19:38:01	07/08/2025
3	20.500	19:56:12	07/08/2025	3	2.225	19:38:02	07/08/2025
4	20.500	19:56:13	07/08/2025	4	2.225	19:38:03	07/08/2025
5	20.500	19:56:14	07/08/2025	5	2.225	19:38:04	07/08/2025
6	20.500	19:56:15	07/08/2025	6	2.225	19:38:05	07/08/2025
7	20.500	19:56:16	07/08/2025	7	2.225	19:38:06	07/08/2025
8	20.500	19:56:17	07/08/2025	8	2.225	19:38:07	07/08/2025
9	20.500	19:56:18	07/08/2025	9	2.225	19:38:08	07/08/2025
10	20.500	19:56:19	07/08/2025	10	2.225	19:38:09	07/08/2025
11	20.500	19:56:20	07/08/2025	11	2.225	19:38:10	07/08/2025
12	20.500	19:56:21	07/08/2025	12	2.225	19:38:11	07/08/2025
13	20.500	19:56:22	07/08/2025	13	2.225	19:38:12	07/08/2025
14	20.500	19:56:23	07/08/2025	14	2.225	19:38:13	07/08/2025
15	20.500	19:56:24	07/08/2025	15	2.225	19:38:14	07/08/2025
16	20.500	19:56:25	07/08/2025	16	2.225	19:38:15	07/08/2025
17	20.500	19:56:26	07/08/2025	17	2.225	19:38:16	07/08/2025
18	20.500	19:56:27	07/08/2025	18	2.225	19:38:17	07/08/2025
19	20.500	19:56:28	07/08/2025	19	2.225	19:38:18	07/08/2025
20	20.500	19:56:29	07/08/2025	20	2.225	19:38:19	07/08/2025
21	20.500	19:56:30	07/08/2025	21	2.225	19:38:20	07/08/2025
22	20.500	19:56:31	07/08/2025	22	2.225	19:38:21	07/08/2025
23	20.500	19:56:32	07/08/2025	23	2.225	19:38:22	07/08/2025
24	20.500	19:56:33	07/08/2025	24	2.225	19:38:23	07/08/2025
25	20.500	19:56:34	07/08/2025	25	2.225	19:38:24	07/08/2025
26	20.500	19:56:35	07/08/2025	26	2.225	19:38:25	07/08/2025
27	20.500	19:56:36	07/08/2025	27	2.225	19:38:26	07/08/2025
28	20.500	19:56:37	07/08/2025	28	2.225	19:38:27	07/08/2025
29	20.500	19:56:38	07/08/2025	29	2.225	19:38:28	07/08/2025
30	20.500	19:56:39	07/08/2025	30	2.225	19:38:29	07/08/2025
31	20.500	19:56:40	07/08/2025	31	2.225	19:38:30	07/08/2025
32	20.500	19:56:41	07/08/2025	32	2.225	19:38:31	07/08/2025
33	20.500	19:56:42	07/08/2025	33	2.225	19:38:32	07/08/2025
34	20.500	19:56:43	07/08/2025	34	2.225	19:38:33	07/08/2025
35	20.500	19:56:44	07/08/2025	35	2.225	19:38:34	07/08/2025
36	20.500	19:56:45	07/08/2025	36	2.225	19:38:35	07/08/2025
37	20.500	19:56:46	07/08/2025	37	2.225	19:38:36	07/08/2025
38	20.500	19:56:47	07/08/2025	38	2.225	19:38:37	07/08/2025
39	20.500	19:56:48	07/08/2025	39	2.225	19:38:38	07/08/2025
40	20.500	19:56:49	07/08/2025	40	2.225	19:38:39	07/08/2025
41	20.500	19:56:50	07/08/2025	41	2.225	19:38:40	07/08/2025
42	20.500	19:56:51	07/08/2025	42	2.225	19:38:41	07/08/2025
43	20.500	19:56:52	07/08/2025	43	2.225	19:38:42	07/08/2025
44	20.500	19:56:53	07/08/2025	44	2.225	19:38:43	07/08/2025
45	20.500	19:56:54	07/08/2025	45	2.225	19:38:44	07/08/2025
46	20.500	19:56:55	07/08/2025	46	2.225	19:38:45	07/08/2025
47	20.500	19:56:56	07/08/2025	47	2.225	19:38:46	07/08/2025
48	20.500	19:56:57	07/08/2025	48	2.225	19:38:47	07/08/2025
49	20.500	19:56:58	07/08/2025	49	2.225	19:38:48	07/08/2025
50	20.500	19:56:59	07/08/2025	50	2.225	19:38:49	07/08/2025
	20.500				2.225		

Tabel lampiran 6 Data Vmp (volt) dan Imp (A) 125 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	18.140	20:00:07	07/08/2025	1	2.001	19:38:00	07/08/2025
2	18.140	20:00:08	07/08/2025	2	2.001	19:38:01	07/08/2025
3	18.140	20:00:09	07/08/2025	3	2.001	19:38:02	07/08/2025
4	18.140	20:00:10	07/08/2025	4	2.001	19:38:03	07/08/2025
5	18.140	20:00:11	07/08/2025	5	2.001	19:38:04	07/08/2025
6	18.140	20:00:12	07/08/2025	6	2.001	19:38:05	07/08/2025
7	18.140	20:00:13	07/08/2025	7	2.001	19:38:06	07/08/2025
8	18.140	20:00:14	07/08/2025	8	2.001	19:38:07	07/08/2025
9	18.140	20:00:15	07/08/2025	9	2.001	19:38:08	07/08/2025
10	18.140	20:00:16	07/08/2025	10	2.001	19:38:09	07/08/2025
11	18.140	20:00:17	07/08/2025	11	2.001	19:38:10	07/08/2025
12	18.140	20:00:18	07/08/2025	12	2.001	19:38:11	07/08/2025
13	18.140	20:00:19	07/08/2025	13	2.001	19:38:12	07/08/2025
14	18.140	20:00:20	07/08/2025	14	2.001	19:38:13	07/08/2025
15	18.140	20:00:21	07/08/2025	15	2.001	19:38:14	07/08/2025
16	18.140	20:00:22	07/08/2025	16	2.001	19:38:15	07/08/2025
17	18.140	20:00:23	07/08/2025	17	2.001	19:38:16	07/08/2025
18	18.140	20:00:24	07/08/2025	18	2.001	19:38:17	07/08/2025
19	18.140	20:00:25	07/08/2025	19	2.001	19:38:18	07/08/2025
20	18.140	20:00:26	07/08/2025	20	2.001	19:38:19	07/08/2025
21	18.140	20:00:27	07/08/2025	21	2.001	19:38:20	07/08/2025
22	18.140	20:00:28	07/08/2025	22	2.001	19:38:21	07/08/2025
23	18.140	20:00:29	07/08/2025	23	2.001	19:38:22	07/08/2025
24	18.140	20:00:30	07/08/2025	24	2.001	19:38:23	07/08/2025
25	18.140	20:00:31	07/08/2025	25	2.001	19:38:24	07/08/2025
26	18.140	20:00:32	07/08/2025	26	2.001	19:38:25	07/08/2025
27	18.140	20:00:33	07/08/2025	27	2.001	19:38:26	07/08/2025
28	18.140	20:00:34	07/08/2025	28	2.001	19:38:27	07/08/2025
29	18.140	20:00:35	07/08/2025	29	2.001	19:38:28	07/08/2025
30	18.140	20:00:36	07/08/2025	30	2.001	19:38:29	07/08/2025
31	18.140	20:00:37	07/08/2025	31	2.001	19:38:30	07/08/2025
32	18.140	20:00:38	07/08/2025	32	2.001	19:38:31	07/08/2025
33	18.140	20:00:39	07/08/2025	33	2.001	19:38:32	07/08/2025
34	18.140	20:00:40	07/08/2025	34	2.001	19:38:33	07/08/2025
35	18.140	20:00:41	07/08/2025	35	2.001	19:38:34	07/08/2025
36	18.140	20:00:42	07/08/2025	36	2.001	19:38:35	07/08/2025
37	18.140	20:00:43	07/08/2025	37	2.001	19:38:36	07/08/2025
38	18.140	20:00:44	07/08/2025	38	2.001	19:38:37	07/08/2025
39	18.140	20:00:45	07/08/2025	39	2.001	19:38:38	07/08/2025
40	18.140	20:00:46	07/08/2025	40	2.001	19:38:39	07/08/2025
41	18.140	20:00:47	07/08/2025	41	2.001	19:38:40	07/08/2025
42	18.140	20:00:48	07/08/2025	42	2.001	19:38:41	07/08/2025
43	18.140	20:00:49	07/08/2025	43	2.001	19:38:42	07/08/2025
44	18.140	20:00:50	07/08/2025	44	2.001	19:38:43	07/08/2025
45	18.140	20:00:51	07/08/2025	45	2.001	19:38:44	07/08/2025
46	18.140	20:00:52	07/08/2025	46	2.001	19:38:45	07/08/2025
47	18.140	20:00:53	07/08/2025	47	2.001	19:38:46	07/08/2025
48	18.140	20:00:54	07/08/2025	48	2.001	19:38:47	07/08/2025
49	18.140	20:00:55	07/08/2025	49	2.001	19:38:48	07/08/2025
50	18.140	20:00:56	07/08/2025	50	2.001	19:38:49	07/08/2025
	18.140				2.001		

Tabel lampiran 7 Data Vmp (volt) dan Imp (A) 100 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	15.080	20:05:12	07/08/2025	1	1.703	19:38:00	07/08/2025
2	15.080	20:05:13	07/08/2025	2	1.703	19:38:01	07/08/2025
3	15.080	20:05:14	07/08/2025	3	1.703	19:38:02	07/08/2025
4	15.080	20:05:15	07/08/2025	4	1.703	19:38:03	07/08/2025
5	15.080	20:05:16	07/08/2025	5	1.703	19:38:04	07/08/2025
6	15.080	20:05:17	07/08/2025	6	1.703	19:38:05	07/08/2025
7	15.080	20:05:18	07/08/2025	7	1.703	19:38:06	07/08/2025
8	15.080	20:05:19	07/08/2025	8	1.703	19:38:07	07/08/2025
9	15.080	20:05:20	07/08/2025	9	1.703	19:38:08	07/08/2025
10	15.080	20:05:21	07/08/2025	10	1.703	19:38:09	07/08/2025
11	15.080	20:05:22	07/08/2025	11	1.703	19:38:10	07/08/2025
12	15.080	20:05:23	07/08/2025	12	1.703	19:38:11	07/08/2025
13	15.080	20:05:24	07/08/2025	13	1.703	19:38:12	07/08/2025
14	15.080	20:05:25	07/08/2025	14	1.703	19:38:13	07/08/2025
15	15.080	20:05:26	07/08/2025	15	1.703	19:38:14	07/08/2025
16	15.080	20:05:27	07/08/2025	16	1.703	19:38:15	07/08/2025
17	15.080	20:05:28	07/08/2025	17	1.703	19:38:16	07/08/2025
18	15.080	20:05:29	07/08/2025	18	1.703	19:38:17	07/08/2025
19	15.080	20:05:30	07/08/2025	19	1.703	19:38:18	07/08/2025
20	15.080	20:05:31	07/08/2025	20	1.703	19:38:19	07/08/2025
21	15.080	20:05:32	07/08/2025	21	1.703	19:38:20	07/08/2025
22	15.080	20:05:33	07/08/2025	22	1.703	19:38:21	07/08/2025
23	15.080	20:05:34	07/08/2025	23	1.703	19:38:22	07/08/2025
24	15.080	20:05:35	07/08/2025	24	1.703	19:38:23	07/08/2025
25	15.090	20:05:36	07/08/2025	25	1.704	19:38:24	07/08/2025
26	15.090	20:05:37	07/08/2025	26	1.704	19:38:25	07/08/2025
27	15.090	20:05:38	07/08/2025	27	1.704	19:38:26	07/08/2025
28	15.090	20:05:39	07/08/2025	28	1.704	19:38:27	07/08/2025
29	15.090	20:05:40	07/08/2025	29	1.704	19:38:28	07/08/2025
30	15.090	20:05:41	07/08/2025	30	1.704	19:38:29	07/08/2025
31	15.090	20:05:42	07/08/2025	31	1.704	19:38:30	07/08/2025
32	15.090	20:05:43	07/08/2025	32	1.704	19:38:31	07/08/2025
33	15.090	20:05:44	07/08/2025	33	1.704	19:38:32	07/08/2025
34	15.090	20:05:45	07/08/2025	34	1.704	19:38:33	07/08/2025
35	15.090	20:05:46	07/08/2025	35	1.704	19:38:34	07/08/2025
36	15.090	20:05:47	07/08/2025	36	1.704	19:38:35	07/08/2025
37	15.090	20:05:48	07/08/2025	37	1.704	19:38:36	07/08/2025
38	15.090	20:05:49	07/08/2025	38	1.704	19:38:37	07/08/2025
39	15.090	20:05:50	07/08/2025	39	1.704	19:38:38	07/08/2025
40	15.090	20:05:51	07/08/2025	40	1.704	19:38:39	07/08/2025
41	15.090	20:05:52	07/08/2025	41	1.704	19:38:40	07/08/2025
42	15.090	20:05:53	07/08/2025	42	1.704	19:38:41	07/08/2025
43	15.100	20:05:54	07/08/2025	43	1.705	19:38:42	07/08/2025
44	15.090	20:05:55	07/08/2025	44	1.704	19:38:43	07/08/2025
45	15.090	20:05:56	07/08/2025	45	1.704	19:38:44	07/08/2025
46	15.090	20:05:57	07/08/2025	46	1.704	19:38:45	07/08/2025
47	15.100	20:05:58	07/08/2025	47	1.705	19:38:46	07/08/2025
48	15.100	20:05:59	07/08/2025	48	1.705	19:38:47	07/08/2025
49	15.100	20:06:00	07/08/2025	49	1.705	19:38:48	07/08/2025
50	15.100	20:06:01	07/08/2025	50	1.705	19:38:49	07/08/2025
	15.086				1.704		

Tabel lampiran 8 Data Vmp (volt) dan Imp (A) 75 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	11.590	20:10:05	07/08/2025	1	1.360	19:38:00	07/08/2025
2	11.590	20:10:06	07/08/2025	2	1.360	19:38:01	07/08/2025
3	11.590	20:10:07	07/08/2025	3	1.360	19:38:02	07/08/2025
4	11.590	20:10:08	07/08/2025	4	1.360	19:38:03	07/08/2025
5	11.590	20:10:09	07/08/2025	5	1.360	19:38:04	07/08/2025
6	11.590	20:10:10	07/08/2025	6	1.360	19:38:05	07/08/2025
7	11.590	20:10:11	07/08/2025	7	1.360	19:38:06	07/08/2025
8	11.590	20:10:12	07/08/2025	8	1.360	19:38:07	07/08/2025
9	11.590	20:10:13	07/08/2025	9	1.360	19:38:08	07/08/2025
10	11.590	20:10:14	07/08/2025	10	1.360	19:38:09	07/08/2025
11	11.590	20:10:15	07/08/2025	11	1.360	19:38:10	07/08/2025
12	11.590	20:10:16	07/08/2025	12	1.360	19:38:11	07/08/2025
13	11.590	20:10:17	07/08/2025	13	1.360	19:38:12	07/08/2025
14	11.590	20:10:18	07/08/2025	14	1.360	19:38:13	07/08/2025
15	11.590	20:10:19	07/08/2025	15	1.360	19:38:14	07/08/2025
16	11.590	20:10:20	07/08/2025	16	1.360	19:38:15	07/08/2025
17	11.600	20:10:21	07/08/2025	17	1.361	19:38:16	07/08/2025
18	11.600	20:10:22	07/08/2025	18	1.361	19:38:17	07/08/2025
19	11.600	20:10:23	07/08/2025	19	1.361	19:38:18	07/08/2025
20	11.600	20:10:24	07/08/2025	20	1.361	19:38:19	07/08/2025
21	11.590	20:10:25	07/08/2025	21	1.360	19:38:20	07/08/2025
22	11.590	20:10:26	07/08/2025	22	1.360	19:38:21	07/08/2025
23	11.600	20:10:27	07/08/2025	23	1.361	19:38:22	07/08/2025
24	11.600	20:10:28	07/08/2025	24	1.361	19:38:23	07/08/2025
25	11.600	20:10:29	07/08/2025	25	1.361	19:38:24	07/08/2025
26	11.600	20:10:30	07/08/2025	26	1.361	19:38:25	07/08/2025
27	11.600	20:10:31	07/08/2025	27	1.361	19:38:26	07/08/2025
28	11.600	20:10:32	07/08/2025	28	1.361	19:38:27	07/08/2025
29	11.600	20:10:33	07/08/2025	29	1.361	19:38:28	07/08/2025
30	11.600	20:10:34	07/08/2025	30	1.361	19:38:29	07/08/2025
31	11.600	20:10:35	07/08/2025	31	1.361	19:38:30	07/08/2025
32	11.600	20:10:36	07/08/2025	32	1.361	19:38:31	07/08/2025
33	11.610	20:10:37	07/08/2025	33	1.362	19:38:32	07/08/2025
34	11.600	20:10:38	07/08/2025	34	1.361	19:38:33	07/08/2025
35	11.600	20:10:39	07/08/2025	35	1.361	19:38:34	07/08/2025
36	11.600	20:10:40	07/08/2025	36	1.361	19:38:35	07/08/2025
37	11.610	20:10:41	07/08/2025	37	1.362	19:38:36	07/08/2025
38	11.610	20:10:42	07/08/2025	38	1.362	19:38:37	07/08/2025
39	11.610	20:10:43	07/08/2025	39	1.362	19:38:38	07/08/2025
40	11.610	20:10:44	07/08/2025	40	1.362	19:38:39	07/08/2025
41	11.610	20:10:45	07/08/2025	41	1.362	19:38:40	07/08/2025
42	11.610	20:10:46	07/08/2025	42	1.362	19:38:41	07/08/2025
43	11.600	20:10:47	07/08/2025	43	1.361	19:38:42	07/08/2025
44	11.610	20:10:48	07/08/2025	44	1.362	19:38:43	07/08/2025
45	11.610	20:10:49	07/08/2025	45	1.362	19:38:44	07/08/2025
46	11.610	20:10:50	07/08/2025	46	1.362	19:38:45	07/08/2025
47	11.610	20:10:51	07/08/2025	47	1.362	19:38:46	07/08/2025
48	11.610	20:10:52	07/08/2025	48	1.362	19:38:47	07/08/2025
49	11.610	20:10:53	07/08/2025	49	1.362	19:38:48	07/08/2025
50	11.610	20:10:54	07/08/2025	50	1.362	19:38:49	07/08/2025
	11.599				1.361		

Tabel lampiran 9 Data Voc (volt) 225 volt

No.	value	time	date
1	23.410	19:45:20	06/08/2025
2	23.410	19:45:21	06/08/2025
3	23.410	19:45:22	06/08/2025
4	23.410	19:45:23	06/08/2025
5	23.410	19:45:24	06/08/2025
6	23.410	19:45:25	06/08/2025
7	23.410	19:45:26	06/08/2025
8	23.410	19:45:27	06/08/2025
9	23.410	19:45:28	06/08/2025
10	23.410	19:45:29	06/08/2025
11	23.410	19:45:30	06/08/2025
12	23.410	19:45:31	06/08/2025
13	23.410	19:45:32	06/08/2025
14	23.410	19:45:33	06/08/2025
15	23.410	19:45:34	06/08/2025
16	23.410	19:45:35	06/08/2025
17	23.410	19:45:36	06/08/2025
18	23.410	19:45:37	06/08/2025
19	23.410	19:45:38	06/08/2025
20	23.410	19:45:39	06/08/2025
21	23.410	19:45:40	06/08/2025
22	23.410	19:45:41	06/08/2025
23	23.410	19:45:42	06/08/2025
24	23.410	19:45:43	06/08/2025
25	23.410	19:45:44	06/08/2025
26	23.410	19:45:45	06/08/2025
27	23.410	19:45:46	06/08/2025
28	23.400	19:45:47	06/08/2025
29	23.400	19:45:48	06/08/2025
30	23.410	19:45:49	06/08/2025
31	23.400	19:45:50	06/08/2025
32	23.400	19:45:51	06/08/2025
33	23.400	19:45:52	06/08/2025
34	23.400	19:45:53	06/08/2025
35	23.400	19:45:54	06/08/2025
36	23.400	19:45:55	06/08/2025
37	23.400	19:45:56	06/08/2025
38	23.400	19:45:57	06/08/2025
39	23.400	19:45:58	06/08/2025
40	23.400	19:45:59	06/08/2025
41	23.400	19:46:00	06/08/2025
42	23.400	19:46:01	06/08/2025
43	23.400	19:46:02	06/08/2025
44	23.400	19:46:03	06/08/2025
45	23.400	19:46:04	06/08/2025
46	23.400	19:46:05	06/08/2025
47	23.400	19:46:06	06/08/2025
48	23.400	19:46:07	06/08/2025
49	23.400	19:46:08	06/08/2025
50	23.400	19:46:09	06/08/2025
	23.406		

Tabel lampiran 10 Data Voc (volt) 200 volt

No.	value	time	date
1	22.940	19:38:00	06/08/2025
2	22.940	19:38:01	06/08/2025
3	22.940	19:38:02	06/08/2025
4	22.940	19:38:03	06/08/2025
5	22.940	19:38:04	06/08/2025
6	22.940	19:38:05	06/08/2025
7	22.940	19:38:06	06/08/2025
8	22.940	19:38:07	06/08/2025
9	22.940	19:38:08	06/08/2025
10	22.940	19:38:09	06/08/2025
11	22.940	19:38:10	06/08/2025
12	22.940	19:38:11	06/08/2025
13	22.940	19:38:12	06/08/2025
14	22.940	19:38:13	06/08/2025
15	22.940	19:38:14	06/08/2025
16	22.940	19:38:15	06/08/2025
17	22.940	19:38:16	06/08/2025
18	22.940	19:38:17	06/08/2025
19	22.930	19:38:18	06/08/2025
20	22.930	19:38:19	06/08/2025
21	22.930	19:38:20	06/08/2025
22	22.930	19:38:21	06/08/2025
23	22.930	19:38:22	06/08/2025
24	22.930	19:38:23	06/08/2025
25	22.930	19:38:24	06/08/2025
26	22.930	19:38:25	06/08/2025
27	22.930	19:38:26	06/08/2025
28	22.930	19:38:27	06/08/2025
29	22.930	19:38:28	06/08/2025
30	22.930	19:38:29	06/08/2025
31	22.930	19:38:30	06/08/2025
32	22.930	19:38:31	06/08/2025
33	22.930	19:38:32	06/08/2025
34	22.930	19:38:33	06/08/2025
35	22.930	19:38:34	06/08/2025
36	22.930	19:38:35	06/08/2025
37	22.930	19:38:36	06/08/2025
38	22.930	19:38:37	06/08/2025
39	22.930	19:38:38	06/08/2025
40	22.930	19:38:39	06/08/2025
41	22.930	19:38:40	06/08/2025
42	22.930	19:38:41	06/08/2025
43	22.930	19:38:42	06/08/2025
44	22.930	19:38:43	06/08/2025
45	22.930	19:38:44	06/08/2025
46	22.930	19:38:45	06/08/2025
47	22.930	19:38:46	06/08/2025
48	22.930	19:38:47	06/08/2025
49	22.930	19:38:48	06/08/2025
50	22.930	19:38:49	06/08/2025
	22.934		

Tabel lampiran 11 Data Voc (volt) 175 volt

No.	value	time	date
1	22.100	19:40:05	06/08/2025
2	22.100	19:40:06	06/08/2025
3	22.100	19:40:07	06/08/2025
4	22.100	19:40:08	06/08/2025
5	22.100	19:40:09	06/08/2025
6	22.110	19:40:10	06/08/2025
7	22.110	19:40:11	06/08/2025
8	22.110	19:40:12	06/08/2025
9	22.100	19:40:13	06/08/2025
10	22.100	19:40:14	06/08/2025
11	22.100	19:40:15	06/08/2025
12	22.090	19:40:16	06/08/2025
13	22.100	19:40:17	06/08/2025
14	22.100	19:40:18	06/08/2025
15	22.100	19:40:19	06/08/2025
16	22.100	19:40:20	06/08/2025
17	22.100	19:40:21	06/08/2025
18	22.100	19:40:22	06/08/2025
19	22.100	19:40:23	06/08/2025
20	22.100	19:40:24	06/08/2025
21	22.100	19:40:25	06/08/2025
22	22.100	19:40:26	06/08/2025
23	22.100	19:40:27	06/08/2025
24	22.100	19:40:28	06/08/2025
25	22.100	19:40:29	06/08/2025
26	22.100	19:40:30	06/08/2025
27	22.100	19:40:31	06/08/2025
28	22.100	19:40:32	06/08/2025
29	22.100	19:40:33	06/08/2025
30	22.100	19:40:34	06/08/2025
31	22.100	19:40:35	06/08/2025
32	22.100	19:40:36	06/08/2025
33	22.100	19:40:37	06/08/2025
34	22.100	19:40:38	06/08/2025
35	22.100	19:40:39	06/08/2025
36	22.100	19:40:40	06/08/2025
37	22.100	19:40:41	06/08/2025
38	22.100	19:40:42	06/08/2025
39	22.100	19:40:43	06/08/2025
40	22.100	19:40:44	06/08/2025
41	22.100	19:40:45	06/08/2025
42	22.100	19:40:46	06/08/2025
43	22.100	19:40:47	06/08/2025
44	22.100	19:40:48	06/08/2025
45	22.100	19:40:49	06/08/2025
46	22.100	19:40:50	06/08/2025
47	22.100	19:40:51	06/08/2025
48	22.100	19:40:52	06/08/2025
49	22.100	19:40:53	06/08/2025
50	22.100	19:40:54	06/08/2025
	22.100		

Tabel lampiran 12 Data Voc (volt) 150 volt

No.	value	time	date
1	20.770	20:10:15	06/08/2025
2	20.770	20:10:16	06/08/2025
3	20.770	20:10:17	06/08/2025
4	20.770	20:10:18	06/08/2025
5	20.770	20:10:19	06/08/2025
6	20.770	20:10:20	06/08/2025
7	20.770	20:10:21	06/08/2025
8	20.770	20:10:22	06/08/2025
9	20.770	20:10:23	06/08/2025
10	20.770	20:10:24	06/08/2025
11	20.770	20:10:25	06/08/2025
12	20.770	20:10:26	06/08/2025
13	20.770	20:10:27	06/08/2025
14	20.770	20:10:28	06/08/2025
15	20.770	20:10:29	06/08/2025
16	20.770	20:10:30	06/08/2025
17	20.770	20:10:31	06/08/2025
18	20.770	20:10:32	06/08/2025
19	20.770	20:10:33	06/08/2025
20	20.770	20:10:34	06/08/2025
21	20.770	20:10:35	06/08/2025
22	20.770	20:10:36	06/08/2025
23	20.770	20:10:37	06/08/2025
24	20.770	20:10:38	06/08/2025
25	20.770	20:10:39	06/08/2025
26	20.770	20:10:40	06/08/2025
27	20.770	20:10:41	06/08/2025
28	20.770	20:10:42	06/08/2025
29	20.770	20:10:43	06/08/2025
30	20.770	20:10:44	06/08/2025
31	20.770	20:10:45	06/08/2025
32	20.770	20:10:46	06/08/2025
33	20.770	20:10:47	06/08/2025
34	20.770	20:10:48	06/08/2025
35	20.770	20:10:49	06/08/2025
36	20.770	20:10:50	06/08/2025
37	20.770	20:10:51	06/08/2025
38	20.770	20:10:52	06/08/2025
39	20.770	20:10:53	06/08/2025
40	20.770	20:10:54	06/08/2025
41	20.770	20:10:55	06/08/2025
42	20.770	20:10:56	06/08/2025
43	20.770	20:10:57	06/08/2025
44	20.770	20:10:58	06/08/2025
45	20.770	20:10:59	06/08/2025
46	20.770	20:11:00	06/08/2025
47	20.770	20:11:01	07/08/2025
48	20.770	20:11:02	08/08/2025
49	20.770	20:11:03	09/08/2025
50	20.770	20:11:04	10/08/2025
	20.770		

Tabel lampiran 13 Data Voc (volt) 125 volt

No.	value	time	date
1	19.120	20:34:09	06/08/2025
2	19.120	20:34:10	06/08/2025
3	19.120	20:34:11	06/08/2025
4	19.120	20:34:12	06/08/2025
5	19.120	20:34:13	06/08/2025
6	19.120	20:34:14	06/08/2025
7	19.120	20:34:15	06/08/2025
8	19.120	20:34:16	06/08/2025
9	19.120	20:34:17	06/08/2025
10	19.120	20:34:18	06/08/2025
11	19.120	20:34:19	06/08/2025
12	19.130	20:34:20	06/08/2025
13	19.130	20:34:21	06/08/2025
14	19.130	20:34:22	06/08/2025
15	19.130	20:34:23	06/08/2025
16	19.130	20:34:24	06/08/2025
17	19.130	20:34:25	06/08/2025
18	19.130	20:34:26	06/08/2025
19	19.130	20:34:27	06/08/2025
20	19.130	20:34:28	06/08/2025
21	19.130	20:34:29	06/08/2025
22	19.130	20:34:30	06/08/2025
23	19.130	20:34:31	06/08/2025
24	19.120	20:34:32	06/08/2025
25	19.130	20:34:33	06/08/2025
26	19.130	20:34:34	06/08/2025
27	19.130	20:34:35	06/08/2025
28	19.130	20:34:36	06/08/2025
29	19.130	20:34:37	06/08/2025
30	19.130	20:34:38	06/08/2025
31	19.130	20:34:39	06/08/2025
32	19.130	20:34:40	06/08/2025
33	19.130	20:34:41	06/08/2025
34	19.130	20:34:42	06/08/2025
35	19.130	20:34:43	06/08/2025
36	19.130	20:34:44	06/08/2025
37	19.130	20:34:45	06/08/2025
38	19.130	20:34:46	06/08/2025
39	19.130	20:34:47	06/08/2025
40	19.130	20:34:48	06/08/2025
41	19.130	20:34:49	06/08/2025
42	19.140	20:34:50	06/08/2025
43	19.130	20:34:51	06/08/2025
44	19.130	20:34:52	06/08/2025
45	19.130	20:34:53	06/08/2025
46	19.130	20:34:54	06/08/2025
47	19.140	20:34:55	06/08/2025
48	19.140	20:34:56	06/08/2025
49	19.140	20:34:57	06/08/2025
50	19.140	20:34:58	06/08/2025
	19.129		

Tabel lampiran 14 Data Voc (volt) 100 volt

No.	value	time	date
1	16.670	20:46:13	06/08/2025
2	16.670	20:46:14	06/08/2025
3	16.670	20:46:15	06/08/2025
4	16.670	20:46:16	06/08/2025
5	16.670	20:46:17	06/08/2025
6	16.670	20:46:18	06/08/2025
7	16.670	20:46:19	06/08/2025
8	16.670	20:46:20	06/08/2025
9	16.670	20:46:21	06/08/2025
10	16.670	20:46:22	06/08/2025
11	16.670	20:46:23	06/08/2025
12	16.670	20:46:24	06/08/2025
13	16.670	20:46:25	06/08/2025
14	16.670	20:46:26	06/08/2025
15	16.670	20:46:27	06/08/2025
16	16.670	20:46:28	06/08/2025
17	16.670	20:46:29	06/08/2025
18	16.670	20:46:30	06/08/2025
19	16.670	20:46:31	06/08/2025
20	16.670	20:46:32	06/08/2025
21	16.670	20:46:33	06/08/2025
22	16.670	20:46:34	06/08/2025
23	16.680	20:46:35	06/08/2025
24	16.680	20:46:36	06/08/2025
25	16.680	20:46:37	06/08/2025
26	16.680	20:46:38	06/08/2025
27	16.680	20:46:39	06/08/2025
28	16.680	20:46:40	06/08/2025
29	16.680	20:46:41	06/08/2025
30	16.680	20:46:42	06/08/2025
31	16.680	20:46:43	06/08/2025
32	16.680	20:46:44	06/08/2025
33	16.680	20:46:45	06/08/2025
34	16.680	20:46:46	06/08/2025
35	16.680	20:46:47	06/08/2025
36	16.680	20:46:48	06/08/2025
37	16.680	20:46:49	06/08/2025
38	16.680	20:46:50	06/08/2025
39	16.680	20:46:51	06/08/2025
40	16.680	20:46:52	06/08/2025
41	16.680	20:46:53	06/08/2025
42	16.680	20:46:54	06/08/2025
43	16.680	20:46:55	06/08/2025
44	16.680	20:46:56	06/08/2025
45	16.680	20:46:57	06/08/2025
46	16.680	20:46:58	06/08/2025
47	16.680	20:46:59	06/08/2025
48	16.680	20:47:00	06/08/2025
49	16.680	20:47:01	06/08/2025
50	16.680	20:47:02	06/08/2025
	16.676		

Tabel lampiran 15 Data Voc (volt) 75 volt

No.	value	time	date
1	13.680	20:03:00	06/08/2025
2	13.680	20:03:01	06/08/2025
3	13.680	20:03:02	06/08/2025
4	13.680	20:03:03	06/08/2025
5	13.680	20:03:04	06/08/2025
6	13.690	20:03:05	06/08/2025
7	13.690	20:03:06	06/08/2025
8	13.680	20:03:07	06/08/2025
9	13.680	20:03:08	06/08/2025
10	13.680	20:03:09	06/08/2025
11	13.680	20:03:10	06/08/2025
12	13.680	20:03:11	06/08/2025
13	13.680	20:03:12	06/08/2025
14	13.680	20:03:13	06/08/2025
15	13.680	20:03:14	06/08/2025
16	13.680	20:03:15	06/08/2025
17	13.680	20:03:16	06/08/2025
18	13.680	20:03:17	06/08/2025
19	13.680	20:03:18	06/08/2025
20	13.680	20:03:19	06/08/2025
21	13.680	20:03:20	06/08/2025
22	13.680	20:03:21	06/08/2025
23	13.680	20:03:22	06/08/2025
24	13.680	20:03:23	06/08/2025
25	13.680	20:03:24	06/08/2025
26	13.680	20:03:25	06/08/2025
27	13.680	20:03:26	06/08/2025
28	13.680	20:03:27	06/08/2025
29	13.680	20:03:28	06/08/2025
30	13.680	20:03:29	06/08/2025
31	13.680	20:03:30	06/08/2025
32	13.680	20:03:31	06/08/2025
33	13.680	20:03:32	06/08/2025
34	13.680	20:03:33	06/08/2025
35	13.680	20:03:34	06/08/2025
36	13.680	20:03:35	06/08/2025
37	13.680	20:03:36	06/08/2025
38	13.690	20:03:37	06/08/2025
39	13.690	20:03:38	06/08/2025
40	13.690	20:03:39	06/08/2025
41	13.690	20:03:40	06/08/2025
42	13.690	20:03:41	06/08/2025
43	13.690	20:03:42	06/08/2025
44	13.690	20:03:43	06/08/2025
45	13.690	20:03:44	06/08/2025
46	13.690	20:03:45	06/08/2025
47	13.690	20:03:46	06/08/2025
48	13.690	20:03:47	06/08/2025
49	13.690	20:03:48	06/08/2025
50	13.690	20:03:49	06/08/2025
	13.683		

Tabel lampiran 16 Data Isc (A)

No.	Short circuit current , I (Ampere)						
	Isc ₁	Isc ₂	Isc ₃	Isc ₄	Isc ₅	Isc ₆	Isc ₇
1	0.372	0.287	0.196	0.122	0.077	0.038	0.012
2	0.373	0.287	0.196	0.122	0.077	0.037	0.014
3	0.374	0.285	0.196	0.115	0.076	0.038	0.015
4	0.374	0.286	0.195	0.112	0.077	0.038	0.013
5	0.374	0.286	0.194	0.122	0.077	0.038	0.015
Rata-rata	0.3734	0.2862	0.1954	0.119	0.0768	0.0378	0.0138

Tabel lampiran 17 Data intensitas cahaya 225V

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		lux	Watt/m ²
1	05/08/2025 22:31	74300	586.97
2	05/08/2025 22:31	74175	585.98
3	05/08/2025 22:31	74250	586.58
4	05/08/2025 22:31	74650	589.74
5	05/08/2025 22:31	74825	591.12
6	05/08/2025 22:31	74725	590.33
7	05/08/2025 22:31	74700	590.13
8	05/08/2025 22:31	74700	590.13
9	05/08/2025 22:31	74825	591.12
10	05/08/2025 22:31	75050	592.9
11	05/08/2025 22:31	74975	592.3
12	05/08/2025 22:31	74825	591.12
13	05/08/2025 22:31	74775	590.72
14	05/08/2025 22:31	74775	590.72
15	05/08/2025 22:31	75000	592.5
16	05/08/2025 22:31	74925	591.91
17	05/08/2025 22:31	74850	591.32
18	05/08/2025 22:31	74875	591.51
19	05/08/2025 22:31	74850	591.32
20	05/08/2025 22:31	75175	593.88
21	05/08/2025 22:31	75000	592.5
22	05/08/2025 22:31	74975	592.3
23	05/08/2025 22:31	74975	592.3
24	05/08/2025 22:31	75075	593.09
25	05/08/2025 22:31	75200	594.08
26	05/08/2025 22:31	75150	593.69
27	05/08/2025 22:31	75150	593.69
28	05/08/2025 22:31	75150	593.69
29	05/08/2025 22:31	75150	593.69
30	05/08/2025 22:31	75275	594.67
31	05/08/2025 22:31	75300	594.87
32	05/08/2025 22:31	75100	593.29
33	05/08/2025 22:31	75150	593.69
34	05/08/2025 22:31	75200	594.08
35	05/08/2025 22:31	75325	595.07
36	05/08/2025 22:32	75275	594.67
37	05/08/2025 22:32	75275	594.67

38	05/08/2025 22:32	75175	593.88
39	05/08/2025 22:32	74725	590.33
40	05/08/2025 22:32	74850	591.32
41	05/08/2025 22:32	75050	592.9
42	05/08/2025 22:32	74775	590.72
43	05/08/2025 22:32	74725	590.33
44	05/08/2025 22:32	74725	590.33
45	05/08/2025 22:32	74700	590.13
46	05/08/2025 22:32	75300	594.87
47	05/08/2025 22:32	75325	595.07
48	05/08/2025 22:32	75400	595.66
49	05/08/2025 22:32	75400	595.66
50	05/08/2025 22:32	75450	596.06
51	05/08/2025 22:32	74975	592.3
52	05/08/2025 22:32	74850	591.32
53	05/08/2025 22:32	74825	591.12
54	05/08/2025 22:32	74875	591.51
55	05/08/2025 22:32	74875	591.51
56	05/08/2025 22:32	75075	593.09
57	05/08/2025 22:32	75425	595.86
58	05/08/2025 22:32	75450	596.06
59	05/08/2025 22:32	75450	596.06
60	05/08/2025 22:32	75625	597.44
61	05/08/2025 22:32	75625	597.44
62	05/08/2025 22:32	75575	597.04
63	05/08/2025 22:32	75575	597.04
64	05/08/2025 22:32	75650	597.64
65	05/08/2025 22:32	75675	597.83
66	05/08/2025 22:32	75700	598.03
67	05/08/2025 22:32	75650	597.64
68	05/08/2025 22:32	75700	598.03
69	05/08/2025 22:32	75675	597.83
70	05/08/2025 22:32	75625	597.44
71	05/08/2025 22:32	75850	599.22
72	05/08/2025 22:32	75650	597.64
73	05/08/2025 22:32	75650	597.64
74	05/08/2025 22:32	75625	597.44
75	05/08/2025 22:32	75625	597.44
76	05/08/2025 22:32	75700	598.03
77	05/08/2025 22:32	75700	598.03

78	05/08/2025 22:32	75750	598.43
79	05/08/2025 22:32	75700	598.03
80	05/08/2025 22:32	75750	598.43
81	05/08/2025 22:32	76000	600.4
82	05/08/2025 22:32	75850	599.22
83	05/08/2025 22:32	75800	598.82
84	05/08/2025 22:32	75800	598.82
85	05/08/2025 22:32	75800	598.82
86	05/08/2025 22:32	75900	599.61
87	05/08/2025 22:32	75775	598.62
88	05/08/2025 22:32	75700	598.03
89	05/08/2025 22:32	75700	598.03
90	05/08/2025 22:32	75775	598.62
91	05/08/2025 22:32	75850	599.22
92	05/08/2025 22:32	75975	600.2
93	05/08/2025 22:32	75775	598.62
94	05/08/2025 22:32	75850	599.22
95	05/08/2025 22:32	75800	598.82
96	05/08/2025 22:33	75800	598.82
97	05/08/2025 22:33	75800	598.82
98	05/08/2025 22:33	75850	599.22
99	Rata-rata	75288	594.78

Tabel lampiran 18 Data intensitas cahaya 200V

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		lux	Watt/m ²
1	05/08/2025 22:38	72398	571.94
2	05/08/2025 22:38	72405	572
3	05/08/2025 22:38	72510	572.83
4	05/08/2025 22:38	72360	571.64
5	05/08/2025 22:38	72300	571.17
6	05/08/2025 22:38	72270	570.93
7	05/08/2025 22:38	72218	570.52
8	05/08/2025 22:38	72330	571.41
9	05/08/2025 22:38	72053	569.21
10	05/08/2025 22:38	71880	567.85
11	05/08/2025 22:38	71993	568.74
12	05/08/2025 22:38	71948	568.39
13	05/08/2025 22:38	72113	569.69
14	05/08/2025 22:38	71970	568.56
15	05/08/2025 22:38	72008	568.86
16	05/08/2025 22:38	71918	568.15
17	05/08/2025 22:38	71948	568.39
18	05/08/2025 22:38	72098	569.57
19	05/08/2025 22:38	72203	570.4
20	05/08/2025 22:38	71985	568.68
21	05/08/2025 22:38	71918	568.15
22	05/08/2025 22:38	71918	568.15
23	05/08/2025 22:38	72075	569.39
24	05/08/2025 22:38	72030	569.04
25	05/08/2025 22:38	72098	569.57
26	05/08/2025 22:38	72465	572.47
27	05/08/2025 22:38	72540	573.07
28	05/08/2025 22:39	72675	574.13
29	05/08/2025 22:39	72810	575.2
30	05/08/2025 22:39	72465	572.47
31	05/08/2025 22:39	72465	572.47
32	05/08/2025 22:39	72578	573.36
33	05/08/2025 22:39	72705	574.37
34	05/08/2025 22:39	72563	573.24
35	05/08/2025 22:39	72533	573.01
36	05/08/2025 22:39	72578	573.36
37	05/08/2025 22:39	72578	573.36

38	05/08/2025 22:39	72750	574.73
39	05/08/2025 22:39	72818	575.26
40	05/08/2025 22:39	72645	573.9
41	05/08/2025 22:39	72638	573.84
42	05/08/2025 22:39	72683	574.19
43	05/08/2025 22:39	72780	574.96
44	05/08/2025 22:39	72683	574.19
45	05/08/2025 22:39	72750	574.73
46	05/08/2025 22:39	72638	573.84
47	05/08/2025 22:39	72705	574.37
48	05/08/2025 22:39	72705	574.37
49	05/08/2025 22:39	72953	576.32
50	05/08/2025 22:39	72803	575.14
51	05/08/2025 22:39	72743	574.67
52	05/08/2025 22:39	72780	574.96
53	05/08/2025 22:39	72758	574.78
54	05/08/2025 22:39	72848	575.5
55	05/08/2025 22:39	72758	574.78
56	05/08/2025 22:39	72750	574.73
57	05/08/2025 22:39	72720	574.49
58	05/08/2025 22:39	72743	574.67
59	05/08/2025 22:39	72953	576.32
60	05/08/2025 22:39	72713	574.43
61	05/08/2025 22:39	72653	573.95
62	05/08/2025 22:39	72608	573.6
63	05/08/2025 22:39	72653	573.95
64	05/08/2025 22:39	72675	574.13
65	05/08/2025 22:39	72563	573.24
66	05/08/2025 22:39	72563	573.24
67	05/08/2025 22:39	72510	572.83
68	05/08/2025 22:39	72600	573.54
69	05/08/2025 22:39	72720	574.49
70	05/08/2025 22:39	72540	573.07
71	05/08/2025 22:39	72465	572.47
72	05/08/2025 22:39	72465	572.47
73	05/08/2025 22:39	72525	572.95
74	05/08/2025 22:39	72563	573.24
75	05/08/2025 22:39	72503	572.77
76	05/08/2025 22:39	72473	572.53
77	05/08/2025 22:39	72495	572.71

78	05/08/2025 22:39	72495	572.71
79	05/08/2025 22:39	72675	574.13
80	05/08/2025 22:39	72465	572.47
81	05/08/2025 22:39	72428	572.18
82	05/08/2025 22:39	72480	572.59
83	05/08/2025 22:39	72443	572.3
84	05/08/2025 22:39	72540	573.07
85	05/08/2025 22:39	72458	572.41
86	05/08/2025 22:39	72428	572.18
87	05/08/2025 22:39	72375	571.76
88	05/08/2025 22:40	72338	571.47
89	05/08/2025 22:40	72570	573.3
90	05/08/2025 22:40	72458	572.41
91	05/08/2025 22:40	72428	572.18
92	05/08/2025 22:40	72390	571.88
93	05/08/2025 22:40	71985	568.68
94	05/08/2025 22:40	72188	570.28
95	05/08/2025 22:40	72015	568.92
96	05/08/2025 22:40	72030	569.04
97	05/08/2025 22:40	71648	566.02
98	05/08/2025 22:40	71670	566.19
99	Rata-rata	72442	572.29

Tabel lampiran 19 Data intensitas cahaya 175V

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		lux	Watt/m ²
1	05/08/2025 22:48	70124	553.98
2	05/08/2025 22:48	70139	554.09
3	05/08/2025 22:48	70267	555.11
4	05/08/2025 22:48	70380	556
5	05/08/2025 22:48	70124	553.98
6	05/08/2025 22:48	70025	553.2
7	05/08/2025 22:48	70067	553.53
8	05/08/2025 22:48	70110	553.87
9	05/08/2025 22:48	70082	553.65
10	05/08/2025 22:48	69726	550.84
11	05/08/2025 22:48	69726	550.84
12	05/08/2025 22:48	69954	552.63
13	05/08/2025 22:48	70053	553.42
14	05/08/2025 22:48	70181	554.43
15	05/08/2025 22:48	69954	552.63
16	05/08/2025 22:48	69883	552.07
17	05/08/2025 22:48	69868	551.96
18	05/08/2025 22:48	69911	552.3
19	05/08/2025 22:48	69940	552.52
20	05/08/2025 22:48	69556	549.49
21	05/08/2025 22:48	69627	550.05
22	05/08/2025 22:48	69712	550.72
23	05/08/2025 22:48	69954	552.63
24	05/08/2025 22:48	70025	553.2
25	05/08/2025 22:48	69755	551.06
26	05/08/2025 22:48	69740	550.95
27	05/08/2025 22:48	69726	550.84
28	05/08/2025 22:48	69584	549.71
29	05/08/2025 22:48	69627	550.05
30	05/08/2025 22:48	69556	549.49
31	05/08/2025 22:48	69556	549.49
32	05/08/2025 22:48	69484	548.93
33	05/08/2025 22:48	69484	548.93
34	05/08/2025 22:48	69684	550.5
35	05/08/2025 22:48	69399	548.25
36	05/08/2025 22:48	69356	547.92
37	05/08/2025 22:48	69356	547.92

38	05/08/2025 22:48	69300	547.47
39	05/08/2025 22:48	69470	548.81
40	05/08/2025 22:48	69385	548.14
41	05/08/2025 22:48	69413	548.37
42	05/08/2025 22:48	69428	548.48
43	05/08/2025 22:48	69484	548.93
44	05/08/2025 22:48	69726	550.84
45	05/08/2025 22:49	69669	550.39
46	05/08/2025 22:49	69584	549.71
47	05/08/2025 22:49	69612	549.94
48	05/08/2025 22:49	69541	549.38
49	05/08/2025 22:49	69684	550.5
50	05/08/2025 22:49	69527	549.26
51	05/08/2025 22:49	69556	549.49
52	05/08/2025 22:49	69556	549.49
53	05/08/2025 22:49	69584	549.71
54	05/08/2025 22:49	69755	551.06
55	05/08/2025 22:49	69655	550.28
56	05/08/2025 22:49	69541	549.38
57	05/08/2025 22:49	69484	548.93
58	05/08/2025 22:49	69484	548.93
59	05/08/2025 22:49	69598	549.83
60	05/08/2025 22:49	69484	548.93
61	05/08/2025 22:49	69527	549.26
62	05/08/2025 22:49	69470	548.81
63	05/08/2025 22:49	69484	548.93
64	05/08/2025 22:49	69712	550.72
65	05/08/2025 22:49	69598	549.83
66	05/08/2025 22:49	69456	548.7
67	05/08/2025 22:49	69541	549.38
68	05/08/2025 22:49	69484	548.93
69	05/08/2025 22:49	69541	549.38
70	05/08/2025 22:49	69428	548.48
71	05/08/2025 22:49	69413	548.37
72	05/08/2025 22:49	69413	548.37
73	05/08/2025 22:49	69456	548.7
74	05/08/2025 22:49	69584	549.71
75	05/08/2025 22:49	69612	549.94
76	05/08/2025 22:49	69342	547.8
77	05/08/2025 22:49	69385	548.14

78	05/08/2025 22:49	69356	547.92
79	05/08/2025 22:49	69499	549.04
80	05/08/2025 22:49	69399	548.25
81	05/08/2025 22:49	69428	548.48
82	05/08/2025 22:49	69413	548.37
83	05/08/2025 22:49	69428	548.48
84	05/08/2025 22:49	69484	548.93
85	05/08/2025 22:49	69584	549.71
86	05/08/2025 22:49	69356	547.92
87	05/08/2025 22:49	69342	547.8
88	05/08/2025 22:49	69356	547.92
89	05/08/2025 22:49	69470	548.81
90	05/08/2025 22:49	69157	546.34
91	05/08/2025 22:49	69285	547.35
92	05/08/2025 22:49	69100	545.89
93	05/08/2025 22:49	69100	545.89
94	05/08/2025 22:49	69399	548.25
95	05/08/2025 22:49	69214	546.79
96	05/08/2025 22:49	69285	547.35
97	05/08/2025 22:49	69143	546.23
98	05/08/2025 22:49	68859	543.98
99	Rata-rata	69595	549.8

Tabel lampiran 20 Data intensitas cahaya 150V

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		lux	Watt/m ²
1	05/08/2025 22:53	66664	526.65
2	05/08/2025 22:53	66641	526.46
3	05/08/2025 22:53	66617	526.27
4	05/08/2025 22:53	66879	528.34
5	05/08/2025 22:53	66807	527.78
6	05/08/2025 22:53	66664	526.65
7	05/08/2025 22:53	66641	526.46
8	05/08/2025 22:53	66688	526.84
9	05/08/2025 22:53	66807	527.78
10	05/08/2025 22:53	66688	526.84
11	05/08/2025 22:54	66688	526.84
12	05/08/2025 22:54	66664	526.65
13	05/08/2025 22:54	66664	526.65
14	05/08/2025 22:54	66855	528.15
15	05/08/2025 22:54	66855	528.15
16	05/08/2025 22:54	66641	526.46
17	05/08/2025 22:54	66641	526.46
18	05/08/2025 22:54	66688	526.84
19	05/08/2025 22:54	66879	528.34
20	05/08/2025 22:54	66760	527.4
21	05/08/2025 22:54	66664	526.65
22	05/08/2025 22:54	66736	527.21
23	05/08/2025 22:54	66736	527.21
24	05/08/2025 22:54	66903	528.53
25	05/08/2025 22:54	66903	528.53
26	05/08/2025 22:54	66736	527.21
27	05/08/2025 22:54	66760	527.4
28	05/08/2025 22:54	66736	527.21
29	05/08/2025 22:54	66903	528.53
30	05/08/2025 22:54	66688	526.84
31	05/08/2025 22:54	66688	526.84
32	05/08/2025 22:54	66688	526.84
33	05/08/2025 22:54	66736	527.21
34	05/08/2025 22:54	66783	527.59
35	05/08/2025 22:54	66807	527.78
36	05/08/2025 22:54	66688	526.84
37	05/08/2025 22:54	66641	526.46

38	05/08/2025 22:54	66664	526.65
39	05/08/2025 22:54	66688	526.84
40	05/08/2025 22:54	66688	526.84
41	05/08/2025 22:54	66617	526.27
42	05/08/2025 22:54	66569	525.9
43	05/08/2025 22:54	66641	526.46
44	05/08/2025 22:54	66664	526.65
45	05/08/2025 22:54	66855	528.15
46	05/08/2025 22:54	66688	526.84
47	05/08/2025 22:54	66569	525.9
48	05/08/2025 22:54	66617	526.27
49	05/08/2025 22:54	66641	526.46
50	05/08/2025 22:54	66688	526.84
51	05/08/2025 22:54	66617	526.27
52	05/08/2025 22:54	66617	526.27
53	05/08/2025 22:54	66617	526.27
54	05/08/2025 22:54	66664	526.65
55	05/08/2025 22:54	66855	528.15
56	05/08/2025 22:54	66617	526.27
57	05/08/2025 22:54	66569	525.9
58	05/08/2025 22:54	66569	525.9
59	05/08/2025 22:54	66783	527.59
60	05/08/2025 22:54	66569	525.9
61	05/08/2025 22:54	66569	525.9
62	05/08/2025 22:54	66641	526.46
63	05/08/2025 22:54	66569	525.9
64	05/08/2025 22:54	66617	526.27
65	05/08/2025 22:54	66855	528.15
66	05/08/2025 22:54	66641	526.46
67	05/08/2025 22:54	66617	526.27
68	05/08/2025 22:54	66688	526.84
69	05/08/2025 22:54	66688	526.84
70	05/08/2025 22:54	66783	527.59
71	05/08/2025 22:55	66736	527.21
72	05/08/2025 22:55	66760	527.4
73	05/08/2025 22:55	66760	527.4
74	05/08/2025 22:55	66736	527.21
75	05/08/2025 22:55	66974	529.09
76	05/08/2025 22:55	66760	527.4
77	05/08/2025 22:55	66760	527.4

78	05/08/2025 22:55	66783	527.59
79	05/08/2025 22:55	66807	527.78
80	05/08/2025 22:55	66974	529.09
81	05/08/2025 22:55	66855	528.15
82	05/08/2025 22:55	66879	528.34
83	05/08/2025 22:55	66879	528.34
84	05/08/2025 22:55	66903	528.53
85	05/08/2025 22:55	67069	529.85
86	05/08/2025 22:55	67022	529.47
87	05/08/2025 22:55	66879	528.34
88	05/08/2025 22:55	66855	528.15
89	05/08/2025 22:55	66903	528.53
90	05/08/2025 22:55	66998	529.28
91	05/08/2025 22:55	66855	528.15
92	05/08/2025 22:55	66807	527.78
93	05/08/2025 22:55	66807	527.78
94	05/08/2025 22:55	66855	528.15
95	05/08/2025 22:55	67069	529.85
96	05/08/2025 22:55	66998	529.28
97	05/08/2025 22:55	66855	528.15
98	05/08/2025 22:55	66879	528.34
99	Rata - rata	66749	527.31

Pengukuran intensitas cahaya 125 Volt

No	Tanggal	Intensitas cahaya, Ir (lux)	Intensitas cahaya, Ir (Watt/m ²)
1	05/08/2025 23.03	63393	500,81
2	05/08/2025 23.03	63496	501,62
3	05/08/2025 23.03	63701	503,23
4	05/08/2025 23.03	63547	502,02
5	05/08/2025 23.03	63496	501,62
6	05/08/2025 23.03	63547	502,02
7	05/08/2025 23.03	63547	502,02
8	05/08/2025 23.03	63803	504,04
9	05/08/2025 23.03	63803	504,04
10	05/08/2025 23.03	63598	502,43
11	05/08/2025 23.03	63701	503,23
12	05/08/2025 23.03	63701	503,23
13	05/08/2025 23.03	63854	504,45
14	05/08/2025 23.03	63598	502,43
15	05/08/2025 23.03	63701	503,23
16	05/08/2025 23.03	63803	504,04
17	05/08/2025 23.03	63752	503,64
18	05/08/2025 23.03	63803	504,04
19	05/08/2025 23.03	63957	505,26
20	05/08/2025 23.03	63803	504,04
21	05/08/2025 23.03	63803	504,04
22	05/08/2025 23.03	63752	503,64
23	05/08/2025 23.03	63752	503,64
24	05/08/2025 23.03	63752	503,64
25	05/08/2025 23.03	63752	503,64
26	05/08/2025 23.03	63752	503,64
27	05/08/2025 23.03	63803	504,04
28	05/08/2025 23.03	63803	504,04
29	05/08/2025 23.03	64110	506,47
30	05/08/2025 23.03	63291	500
31	05/08/2025 23.03	63291	500
32	05/08/2025 23.03	63342	500,4
33	05/08/2025 23.03	63752	503,64
34	05/08/2025 23.03	63752	503,64
35	05/08/2025 23.03	63701	503,23
36	05/08/2025 23.03	63701	503,23

37	05/08/2025 23.03	63701	503,23
38	05/08/2025 23.03	63803	504,04
39	05/08/2025 23.03	63957	505,26
40	05/08/2025 23.03	63701	503,23
41	05/08/2025 23.03	63752	503,64
42	05/08/2025 23.03	63701	503,23
43	05/08/2025 23.03	64315	508,09
44	05/08/2025 23.03	64213	507,28
45	05/08/2025 23.03	64110	506,47
46	05/08/2025 23.03	64110	506,47
47	05/08/2025 23.03	64264	507,68
48	05/08/2025 23.04	64264	507,68
49	05/08/2025 23.04	64520	509,71
50	05/08/2025 23.04	64264	507,68
51	05/08/2025 23.04	64213	507,28
52	05/08/2025 23.04	64264	507,68
53	05/08/2025 23.04	64315	508,09
54	05/08/2025 23.04	64315	508,09
55	05/08/2025 23.04	64315	508,09
56	05/08/2025 23.04	64264	507,68
57	05/08/2025 23.04	64264	507,68
58	05/08/2025 23.04	64264	507,68
59	05/08/2025 23.04	64469	509,3
60	05/08/2025 23.04	64264	507,68
61	05/08/2025 23.04	64264	507,68
62	05/08/2025 23.04	64110	506,47
63	05/08/2025 23.04	63957	505,26
64	05/08/2025 23.04	64110	506,47
65	05/08/2025 23.04	64264	507,68
66	05/08/2025 23.04	64315	508,09
67	05/08/2025 23.04	64315	508,09
68	05/08/2025 23.04	63854	504,45
69	05/08/2025 23.04	63854	504,45
70	05/08/2025 23.04	63752	503,64
71	05/08/2025 23.04	63854	504,45
72	05/08/2025 23.04	63803	504,04
73	05/08/2025 23.04	63854	504,45
74	05/08/2025 23.04	63957	505,26
75	05/08/2025 23.04	63957	505,26

76	05/08/2025 23.04	63803	504,04
77	05/08/2025 23.04	63803	504,04
78	05/08/2025 23.04	63803	504,04
79	05/08/2025 23.04	63957	505,26
80	05/08/2025 23.04	63803	504,04
81	05/08/2025 23.04	63598	502,43
82	05/08/2025 23.04	63803	504,04
83	05/08/2025 23.04	63803	504,04
84	05/08/2025 23.04	64008	505,66
85	05/08/2025 23.04	63957	505,26
86	05/08/2025 23.04	63854	504,45
87	05/08/2025 23.04	63854	504,45
88	05/08/2025 23.04	63854	504,45
89	05/08/2025 23.04	64110	506,47
90	05/08/2025 23.04	63957	505,26
91	05/08/2025 23.04	63957	505,26
92	05/08/2025 23.04	64008	505,66
93	05/08/2025 23.04	64008	505,66
94	05/08/2025 23.04	64059	506,07
95	05/08/2025 23.04	63957	505,26
96	05/08/2025 23.04	64008	505,66
97	05/08/2025 23.04	63957	505,26
98	05/08/2025 23.04	63957	505,26
	Rata - rata	63902	504,83

Pengukuran intensitas cahaya 100 Volt

No	Tanggal	Intensitas cahaya, Ir (lux)	Intensitas cahaya, Ir (Watt/m ²)
1	05/08/2025 23.08	60212	475,68
2	05/08/2025 23.08	60200	475,58
3	05/08/2025 23.08	60389	477,07
4	05/08/2025 23.08	60363	476,87
5	05/08/2025 23.08	60288	476,27
6	05/08/2025 23.08	60603	478,76
7	05/08/2025 23.08	60930	481,35
8	05/08/2025 23.08	60144	475,14
9	05/08/2025 23.08	60056	474,44
10	05/08/2025 23.08	61094	482,64
11	05/08/2025 23.08	60081	474,64
12	05/08/2025 23.08	61207	483,54
13	05/08/2025 23.08	61320	484,43
14	05/08/2025 23.08	60471	477,72
15	05/08/2025 23.08	60257	476,03
16	05/08/2025 23.08	60270	476,13
17	05/08/2025 23.08	61371	484,83
18	05/08/2025 23.09	60534	478,22
19	05/08/2025 23.09	60484	477,82
20	05/08/2025 23.09	60421	477,33
21	05/08/2025 23.09	60434	477,43
22	05/08/2025 23.09	60459	477,62
23	05/08/2025 23.09	60635	479,02
24	05/08/2025 23.09	60635	479,02
25	05/08/2025 23.09	60497	477,92
26	05/08/2025 23.09	60534	478,22
27	05/08/2025 23.09	60534	478,22
28	05/08/2025 23.09	60748	479,91
29	05/08/2025 23.09	60610	478,82
30	05/08/2025 23.09	60585	478,62
31	05/08/2025 23.09	60648	479,12
32	05/08/2025 23.09	60660	479,22
33	05/08/2025 23.09	60811	480,41
34	05/08/2025 23.09	60962	481,6
35	05/08/2025 23.09	60774	480,11
36	05/08/2025 23.09	60748	479,91

37	05/08/2025 23.09	60824	480,51
38	05/08/2025 23.09	60811	480,41
39	05/08/2025 23.09	60874	480,91
40	05/08/2025 23.09	60862	480,81
41	05/08/2025 23.09	60912	481,21
42	05/08/2025 23.09	61076	482,5
43	05/08/2025 23.09	61101	482,7
44	05/08/2025 23.09	61403	485,08
45	05/08/2025 23.09	61151	483,1
46	05/08/2025 23.09	62151	491
47	05/08/2025 23.09	61177	483,29
48	05/08/2025 23.09	61177	483,29
49	05/08/2025 23.09	61874	488,81
50	05/08/2025 23.09	61660	487,12
51	05/08/2025 23.09	61799	488,21
52	05/08/2025 23.09	61685	487,31
53	05/08/2025 23.09	61648	487,02
54	05/08/2025 23.09	61811	488,31
55	05/08/2025 23.09	61585	486,52
56	05/08/2025 23.09	61522	486,02
57	05/08/2025 23.09	61471	485,62
58	05/08/2025 23.09	61585	486,52
59	05/08/2025 23.09	61685	487,31
60	05/08/2025 23.09	61534	486,12
61	05/08/2025 23.09	61572	486,42
62	05/08/2025 23.09	61547	486,22
63	05/08/2025 23.09	61585	486,52
64	05/08/2025 23.09	61811	488,31
65	05/08/2025 23.09	61660	487,12
66	05/08/2025 23.09	61547	486,22
67	05/08/2025 23.09	61635	486,92
68	05/08/2025 23.09	61635	486,92
69	05/08/2025 23.09	61736	487,71
70	05/08/2025 23.09	61597	486,62
71	05/08/2025 23.09	61547	486,22
72	05/08/2025 23.09	61585	486,52
73	05/08/2025 23.09	61572	486,42
74	05/08/2025 23.09	61874	488,81
75	05/08/2025 23.09	61685	487,31

76	05/08/2025 23.09	60597	478,72
77	05/08/2025 23.09	60660	479,22
78	05/08/2025 23.10	61660	487,12
79	05/08/2025 23.10	61849	488,61
80	05/08/2025 23.10	61660	487,12
81	05/08/2025 23.10	61635	486,92
82	05/08/2025 23.10	61585	486,52
83	05/08/2025 23.10	60660	479,22
84	05/08/2025 23.10	60714	479,64
85	05/08/2025 23.10	60824	480,51
86	05/08/2025 23.10	60660	479,22
87	05/08/2025 23.10	60648	479,12
88	05/08/2025 23.10	60060	474,48
89	05/08/2025 23.10	61931	489,26
90	05/08/2025 23.10	61045	482,25
91	05/08/2025 23.10	61045	482,25
92	05/08/2025 23.10	61055	482,33
93	05/08/2025 23.10	61025	482,09
94	05/08/2025 23.10	61025	482,09
95	05/08/2025 23.10	61025	482,09
96	05/08/2025 23.10	61063	482,4
97	05/08/2025 23.10	61023	482,08
98	05/08/2025 23.10	61013	482
	Rata - rata	61055	482,34

Pengukuran intensitas cahaya 75 Volt

No	Tanggal	Intensitas cahaya, Ir (lux)	Intensitas cahaya, Ir (Watt/m ²)
1	05/08/2025 23.14	56814	448,83
2	05/08/2025 23.14	56814	448,83
3	05/08/2025 23.14	56951	449,91
4	05/08/2025 23.14	56951	449,91
5	05/08/2025 23.14	56951	449,91
6	05/08/2025 23.14	57179	451,72
7	05/08/2025 23.14	57043	450,64
8	05/08/2025 23.14	57134	451,36
9	05/08/2025 23.14	57134	451,36
10	05/08/2025 23.14	57179	451,72
11	05/08/2025 23.14	57453	453,88
12	05/08/2025 23.14	57316	452,8
13	05/08/2025 23.14	57408	453,52
14	05/08/2025 23.14	57408	453,52
15	05/08/2025 23.14	57544	454,6
16	05/08/2025 23.14	57773	456,4
17	05/08/2025 23.14	57590	454,96
18	05/08/2025 23.14	57590	454,96
19	05/08/2025 23.14	57590	454,96
20	05/08/2025 23.14	57727	456,04
21	05/08/2025 23.14	57955	457,85
22	05/08/2025 23.14	57818	456,76
23	05/08/2025 23.14	57818	456,76
24	05/08/2025 23.14	57818	456,76
25	05/08/2025 23.14	57910	457,49
26	05/08/2025 23.15	57955	457,85
27	05/08/2025 23.15	58138	459,29
28	05/08/2025 23.15	58001	458,21
29	05/08/2025 23.15	58138	459,29
30	05/08/2025 23.15	58138	459,29
31	05/08/2025 23.15	58320	460,73
32	05/08/2025 23.15	58320	460,73
33	05/08/2025 23.15	58183	459,65
34	05/08/2025 23.15	58320	460,73
35	05/08/2025 23.15	58366	461,09
36	05/08/2025 23.15	58503	462,17

37	05/08/2025 23.15	58366	461,09
38	05/08/2025 23.15	58366	461,09
39	05/08/2025 23.15	58503	462,17
40	05/08/2025 23.15	58412	461,45
41	05/08/2025 23.15	58594	462,89
42	05/08/2025 23.15	58366	461,09
43	05/08/2025 23.15	58366	461,09
44	05/08/2025 23.15	58412	461,45
45	05/08/2025 23.15	58548	462,53
46	05/08/2025 23.15	58229	460,01
47	05/08/2025 23.15	58412	461,45
48	05/08/2025 23.15	58229	460,01
49	05/08/2025 23.15	58138	459,29
50	05/08/2025 23.15	58138	459,29
51	05/08/2025 23.15	58138	459,29
52	05/08/2025 23.15	58320	460,73
53	05/08/2025 23.15	58640	463,25
54	05/08/2025 23.15	58640	463,25
55	05/08/2025 23.15	58777	464,34
56	05/08/2025 23.15	58640	463,25
57	05/08/2025 23.15	58777	464,34
58	05/08/2025 23.15	58366	461,09
59	05/08/2025 23.15	58412	461,45
60	05/08/2025 23.15	58503	462,17
61	05/08/2025 23.15	58503	462,17
62	05/08/2025 23.15	58731	463,97
63	05/08/2025 23.15	58731	463,97
64	05/08/2025 23.15	58138	459,29
65	05/08/2025 23.15	58046	458,57
66	05/08/2025 23.15	58366	461,09
67	05/08/2025 23.15	58366	461,09
68	05/08/2025 23.15	58046	458,57
69	05/08/2025 23.15	58229	460,01
70	05/08/2025 23.15	58320	460,73
71	05/08/2025 23.15	58366	461,09
72	05/08/2025 23.15	58366	461,09
73	05/08/2025 23.15	58366	461,09
74	05/08/2025 23.15	58503	462,17
75	05/08/2025 23.15	58594	462,89

76	05/08/2025 23.15	58594	462,89
77	05/08/2025 23.15	58914	465,42
78	05/08/2025 23.15	58594	462,89
79	05/08/2025 23.15	58594	462,89
80	05/08/2025 23.15	58777	464,34
81	05/08/2025 23.15	58731	463,97
82	05/08/2025 23.15	58822	464,7
83	05/08/2025 23.15	58594	462,89
84	05/08/2025 23.15	58594	462,89
85	05/08/2025 23.16	58594	462,89
86	05/08/2025 23.16	58731	463,97
87	05/08/2025 23.16	58959	465,78
88	05/08/2025 23.16	58731	463,97
89	05/08/2025 23.16	58777	464,34
90	05/08/2025 23.16	58777	464,34
91	05/08/2025 23.16	58777	464,34
92	05/08/2025 23.16	58959	465,78
93	05/08/2025 23.16	58777	464,34
94	05/08/2025 23.16	58777	464,34
95	05/08/2025 23.16	58731	463,97
96	05/08/2025 23.16	58731	463,97
97	05/08/2025 23.16	58959	465,78
98	05/08/2025 23.16	58822	464,7
	Rata - rata	58209	459,85

Tabel lampiran 24 pengambilan data, Resistansi monocrystalline

Resistansi polycrystalline			
No.	value	time	date
1	33.870	20:03:00	06/08/2025
2	33.870	20:03:01	06/08/2025
3	33.860	20:03:02	06/08/2025
4	33.860	20:03:03	06/08/2025
5	33.860	20:03:04	06/08/2025
6	33.860	20:03:05	06/08/2025
7	33.860	20:03:06	06/08/2025
8	33.860	20:03:07	06/08/2025
9	33.870	20:03:08	06/08/2025
10	33.880	20:03:09	06/08/2025
11	33.880	20:03:10	06/08/2025
12	33.890	20:03:11	06/08/2025
13	33.890	20:03:12	06/08/2025
14	33.900	20:03:13	06/08/2025
15	33.910	20:03:14	06/08/2025
16	33.920	20:03:15	06/08/2025
17	33.930	20:03:16	06/08/2025
18	33.930	20:03:17	06/08/2025
19	33.930	20:03:18	06/08/2025
20	33.940	20:03:19	06/08/2025
21	33.950	20:03:20	06/08/2025
22	33.950	20:03:21	06/08/2025
23	33.960	20:03:22	06/08/2025
24	33.950	20:03:23	06/08/2025
25	33.950	20:03:24	06/08/2025
26	33.950	20:03:25	06/08/2025
27	33.950	20:03:26	06/08/2025
28	33.950	20:03:27	06/08/2025
29	33.950	20:03:28	06/08/2025
30	33.940	20:03:29	06/08/2025
31	33.940	20:03:30	06/08/2025
32	33.940	20:03:31	06/08/2025
33	33.940	20:03:32	06/08/2025
34	33.940	20:03:33	06/08/2025
35	33.940	20:03:34	06/08/2025
36	33.940	20:03:35	06/08/2025
37	33.940	20:03:36	06/08/2025
38	33.940	20:03:37	06/08/2025
39	33.940	20:03:38	06/08/2025
40	33.940	20:03:39	06/08/2025
41	33.940	20:03:40	06/08/2025
42	33.940	20:03:41	06/08/2025
43	33.940	20:03:42	06/08/2025
44	33.940	20:03:43	06/08/2025
45	33.950	20:03:44	06/08/2025
46	33.950	20:03:45	06/08/2025
47	33.950	20:03:46	06/08/2025
48	33.960	20:03:47	06/08/2025
49	33.960	20:03:48	06/08/2025
50	33.960	20:03:49	06/08/2025
	33.923		



Gambar L-1.1 Pemasangan *solar cell*



Gambar L-1.2 Pemasangan lampu



Gambar L-1.3 Pemasangan alat ukur



Gambar L-2.1 Pengambilan data intensitas cahaya



Gambar L-2.2 Pengambilan data I_{sc} , V_{mp} dan I_{mp} 225v, 200v, 175v, 150v, 125v, 100v, dan 75v



Gambar L-2.3 Pengambilan data V_{oc} 225v, 200v, 175v, 150v, 125v, 100v, dan 75v



Gambar L-3.1 *Solar cell tipe monocrystalline*

LAMPIRAN MATRIKS JURNAL RUJUKAN

No	Author/ Tahun	Judul	Tujuan	Metode	Hasil
1	(Partaon an Harahap dkk., 2022)	<i>Pengaruh Intensitas Cahaya Matahari Dan Suhu Terhadap Daya Yang Dikeluark an Oleh Modul Sel Surya Monocryst alline Dan Polycrysta llie</i>	Tujuan penelitian ini adalah untuk mengetahui rata-rata daya yang dihasilkan oleh sel surya tipe monocrystalline dan polycrystalline serta mengukur intensitas radiasi matahari yang diterima. Penelitian ini bertujuan untuk mengevaluasi bagaimana intensitas cahaya matahari dan suhu mempengaruhi keluaran daya listrik dari kedua jenis panel sel surya tersebut.	Metode penelitian ini melibatkan perancangan dan persiapan alat untuk mengukur intensitas cahaya serta daya keluaran panel surya monocrystalline dan polycrystalline. Pengujian dilaksanakan di Pantai Labu Pekan, Kabupaten Deli Serdang, selama 6 hari dari pukul 07.00 hingga 16.00 WIB, dengan pengambilan data setiap 2 jam. Alat yang digunakan meliputi multimeter, solar power meter, dan lux meter untuk mengukur intensitas cahaya, tegangan, arus, dan daya yang dihasilkan oleh panel surya.	Hasil dari penelitian ini menunjukkan bahwa semakin tinggi intensitas cahaya matahari (lux), maka semakin baik kinerja panel surya. Secara keseluruhan, panel surya monocrystalline menghasilkan rata-rata daya sebesar 7,01 watt, sedangkan panel surya polycrystalline menghasilkan rata-rata daya sebesar 6,2 watt. Hasil pengukuran menunjukkan bahwa panel polycrystalline memiliki daya yang lebih rendah karena material multi-kristalnya kurang efektif dalam kondisi radiasi matahari yang tinggi. Intensitas radiasi matahari yang diukur selama penelitian mencapai rata-rata sebesar 78.760 lux.

2	(Marta wati, 2018)	<i>Analisis Simulasi Pengaruh Variasi Intensitas Cahaya Terhadap Daya Dari Panel Surya.</i>	tujuan dari penelitian ini adalah untuk mendesain dan menganalisis pembuatan modul solar cell yang efisien dan biaya yang minimal dengan memanfaatkan simulasi Matlab. Selain itu, penelitian ini bertujuan untuk mengetahui titik kerja maksimum dari panel surya serta mengkaji pengaruh variasi intensitas cahaya dan suhu terhadap daya yang dihasilkan oleh panel surya.	Metode penelitian ini menggunakan simulasi MATLAB Simulink dengan rangkaian dua solar panel yang terhubung dan dilengkapi diode bypass. Variasi dilakukan pada irradianse dari 100 sampai 1000 dan suhu dari 25°C sampai 45°C, sebanyak 10 pengujian untuk setiap kondisi. Data arus dan tegangan diukur untuk menentukan daya maksimum dan pengaruh suhu serta cahaya terhadap kinerja panel surya.	Hasil dari penelitian ini menunjukkan bahwa daya maksimum dari rangkaian panel surya tercapai pada irradianse 1000 pada suhu terendah (25°C). Semakin tinggi irradianse, semakin besar arus yang dihasilkan. Selain itu, peningkatan suhu dari 25°C ke 45°C menyebabkan penurunan daya yang dihasilkan, meskipun daya tetap maksimum pada irradianse tertingi. Secara umum, panel surya bekerja optimal pada suhu rendah dan irradianse tinggi.
3	(Salsabila dan Yunanto, 2023)	<i>Pengaruh Intensitas Cahaya dan Kemiringan Panel terhadap Koefisien Laju Konveksi pada Solar</i>	Tujuan dari penelitian ini adalah untuk menganalisis pengaruh intensitas cahaya dan kemiringan panel terhadap koefisien laju konveksi pada	Metode penelitian ini dilakukan dengan pendekatan eksperimental, di mana pengambilan data dilakukan pada alat solar water heater	Hasil penelitian menunjukkan bahwa suhu output tertinggi yang diperoleh dari alat solar water heater adalah 63 °C, dicapai pada intensitas cahaya antara 96.000-

		<i>Water Heater.</i>	alat solar water heater. Penelitian ini bertujuan untuk menemukan optimalisasi dalam penggunaan energi surya sebagai sumber pemanas air, terutama dalam konteks cadangan energi fosil yang semakin menipis.	dengan laju aliran tetap sebesar 1,5 L/menit. Penelitian melibatkan variasi intensitas cahaya, yang diukur dengan luxmeter pada interval 90.000 hingga 98.000 lux, serta variasi kemiringan panel kolektor pada sudut 5°, 10°, 15°, 20°, dan 25°. Selama percobaan, suhu output dan suhu panel diukur menggunakan termometer untuk menganalisis koefisien laju konveksi yang dihasilkan.	98.000 lux dengan sudut kemiringan panel 20° dan 25°. Selain itu, koefisien konveksi tertinggi yang diukur adalah 1366,639 W/m ² °C, juga pada kondisi intensitas cahaya yang sama. Penelitian ini mengindikasikan bahwa semakin tinggi intensitas cahaya dan sudut kemiringan panel, semakin tinggi suhu output yang dihasilkan.
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