

LAMPIRAN

Tabel lampiran 1 jadwal penelitian

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

Tabel lampiran 2 rekapan hasil pengambilan data Vmp dan Imp
Tegangan maksimum, Vmp (volt) dan Kuat arus maksimum, Imp (A) 225 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	17,630	19.40.10	07/08/2025	1	1,921	19.45.20	07/08/2025
2	17,630	19.40.11	07/08/2025	2	1,921	19.45.21	07/08/2025
3	17,630	19.40.12	07/08/2025	3	1,921	19.45.22	07/08/2025
4	17,630	19.40.13	07/08/2025	4	1,921	19.45.23	07/08/2025
5	17,620	19.40.14	07/08/2025	5	1,920	19.45.24	07/08/2025
6	17,620	19.40.15	07/08/2025	6	1,920	19.45.25	07/08/2025
7	17,620	19.40.16	07/08/2025	7	1,920	19.45.26	07/08/2025
8	17,620	19.40.17	07/08/2025	8	1,920	19.45.27	07/08/2025
9	17,620	19.40.18	07/08/2025	9	1,920	19.45.28	07/08/2025
10	17,620	19.40.19	07/08/2025	10	1,920	19.45.29	07/08/2025
11	17,620	19.40.20	07/08/2025	11	1,920	19.45.30	07/08/2025
12	17,620	19.40.21	07/08/2025	12	1,920	19.45.31	07/08/2025
13	17,620	19.40.22	07/08/2025	13	1,920	19.45.32	07/08/2025
14	17,620	19.40.23	07/08/2025	14	1,920	19.45.33	07/08/2025
15	17,620	19.40.24	07/08/2025	15	1,920	19.45.34	07/08/2025
16	17,620	19.40.25	07/08/2025	16	1,920	19.45.35	07/08/2025
17	17,620	19.40.26	07/08/2025	17	1,920	19.45.36	07/08/2025
18	17,620	19.40.27	07/08/2025	18	1,920	19.45.37	07/08/2025
19	17,620	19.40.28	07/08/2025	19	1,920	19.45.38	07/08/2025
20	17,620	19.40.29	07/08/2025	20	1,920	19.45.39	07/08/2025
21	17,620	19.40.30	07/08/2025	21	1,920	19.45.40	07/08/2025
22	17,610	19.40.31	07/08/2025	22	1,919	19.45.41	07/08/2025
23	17,610	19.40.32	07/08/2025	23	1,919	19.45.42	07/08/2025
24	17,610	19.40.33	07/08/2025	24	1,919	19.45.43	07/08/2025
25	17,610	19.40.34	07/08/2025	25	1,919	19.45.44	07/08/2025
26	17,610	19.40.35	07/08/2025	26	1,919	19.45.45	07/08/2025
27	17,610	19.40.36	07/08/2025	27	1,919	19.45.46	07/08/2025
28	17,610	19.40.37	07/08/2025	28	1,919	19.45.47	07/08/2025
29	17,610	19.40.38	07/08/2025	29	1,919	19.45.48	07/08/2025
30	17,610	19.40.39	07/08/2025	30	1,919	19.45.49	07/08/2025
31	17,610	19.40.40	07/08/2025	31	1,919	19.45.50	07/08/2025
32	17,610	19.40.41	07/08/2025	32	1,919	19.45.51	07/08/2025
33	17,610	19.40.42	07/08/2025	33	1,919	19.45.52	07/08/2025
34	17,610	19.40.43	07/08/2025	34	1,919	19.45.53	07/08/2025
35	17,610	19.40.44	07/08/2025	35	1,919	19.45.54	07/08/2025
36	17,610	19.40.45	07/08/2025	36	1,919	19.45.55	07/08/2025
37	17,610	19.40.46	07/08/2025	37	1,919	19.45.56	07/08/2025
38	17,610	19.40.47	07/08/2025	38	1,919	19.45.57	07/08/2025
39	17,610	19.40.48	07/08/2025	39	1,919	19.45.58	07/08/2025
40	17,610	19.40.49	07/08/2025	40	1,919	19.45.59	07/08/2025
41	17,610	19.40.50	07/08/2025	41	1,919	19.46.00	07/08/2025
42	17,610	19.40.51	07/08/2025	42	1,919	19.46.01	07/08/2025
43	17,610	19.40.52	07/08/2025	43	1,919	19.46.02	07/08/2025
44	17,610	19.40.53	07/08/2025	44	1,919	19.46.03	07/08/2025
45	17,610	19.40.54	07/08/2025	45	1,919	19.46.04	07/08/2025
46	17,610	19.40.55	07/08/2025	46	1,919	19.46.05	07/08/2025
47	17,610	19.40.56	07/08/2025	47	1,919	19.46.06	07/08/2025
48	17,610	19.40.57	07/08/2025	48	1,919	19.46.07	07/08/2025
49	17,610	19.40.58	07/08/2025	49	1,919	19.46.08	07/08/2025
50	17,610	19.40.59	07/08/2025	50	1,919	19.46.09	07/08/2025
	17,615				1,919		

Tegangan maksimum, Vmp (volt) dan Kuat arus maksimum, Imp (A) 200 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	17,270	19.45.00	07/08/2025	1	1,894	19.38.00	07/08/2025
2	17,270	19.45.01	07/08/2025	2	1,894	19.38.01	07/08/2025
3	17,270	19.45.02	07/08/2025	3	1,894	19.38.02	07/08/2025
4	17,270	19.45.03	07/08/2025	4	1,894	19.38.03	07/08/2025
5	17,270	19.45.04	07/08/2025	5	1,894	19.38.04	07/08/2025
6	17,270	19.45.05	07/08/2025	6	1,894	19.38.05	07/08/2025
7	17,270	19.45.06	07/08/2025	7	1,894	19.38.06	07/08/2025
8	17,270	19.45.07	07/08/2025	8	1,894	19.38.07	07/08/2025
9	17,270	19.45.08	07/08/2025	9	1,894	19.38.08	07/08/2025
10	17,270	19.45.09	07/08/2025	10	1,894	19.38.09	07/08/2025
11	17,270	19.45.10	07/08/2025	11	1,894	19.38.10	07/08/2025
12	17,270	19.45.11	07/08/2025	12	1,894	19.38.11	07/08/2025
13	17,270	19.45.12	07/08/2025	13	1,894	19.38.12	07/08/2025
14	17,270	19.45.13	07/08/2025	14	1,894	19.38.13	07/08/2025
15	17,260	19.45.14	07/08/2025	15	1,893	19.38.14	07/08/2025
16	17,260	19.45.15	07/08/2025	16	1,893	19.38.15	07/08/2025
17	17,260	19.45.16	07/08/2025	17	1,893	19.38.16	07/08/2025
18	17,260	19.45.17	07/08/2025	18	1,893	19.38.17	07/08/2025
19	17,260	19.45.18	07/08/2025	19	1,893	19.38.18	07/08/2025
20	17,260	19.45.19	07/08/2025	20	1,893	19.38.19	07/08/2025
21	17,260	19.45.20	07/08/2025	21	1,893	19.38.20	07/08/2025
22	17,260	19.45.21	07/08/2025	22	1,893	19.38.21	07/08/2025
23	17,260	19.45.22	07/08/2025	23	1,893	19.38.22	07/08/2025
24	17,260	19.45.23	07/08/2025	24	1,893	19.38.23	07/08/2025
25	17,260	19.45.24	07/08/2025	25	1,893	19.38.24	07/08/2025
26	17,260	19.45.25	07/08/2025	26	1,893	19.38.25	07/08/2025
27	17,260	19.45.26	07/08/2025	27	1,893	19.38.26	07/08/2025
28	17,260	19.45.27	07/08/2025	28	1,893	19.38.27	07/08/2025
29	17,260	19.45.28	07/08/2025	29	1,893	19.38.28	07/08/2025
30	17,260	19.45.29	07/08/2025	30	1,893	19.38.29	07/08/2025
31	17,260	19.45.30	07/08/2025	31	1,893	19.38.30	07/08/2025
32	17,260	19.45.31	07/08/2025	32	1,893	19.38.31	07/08/2025
33	17,260	19.45.32	07/08/2025	33	1,893	19.38.32	07/08/2025
34	17,260	19.45.33	07/08/2025	34	1,893	19.38.33	07/08/2025
35	17,260	19.45.34	07/08/2025	35	1,893	19.38.34	07/08/2025
36	17,260	19.45.35	07/08/2025	36	1,893	19.38.35	07/08/2025
37	17,260	19.45.36	07/08/2025	37	1,893	19.38.36	07/08/2025
38	17,260	19.45.37	07/08/2025	38	1,893	19.38.37	07/08/2025
39	17,260	19.45.38	07/08/2025	39	1,893	19.38.38	07/08/2025
40	17,260	19.45.39	07/08/2025	40	1,893	19.38.39	07/08/2025
41	17,260	19.45.40	07/08/2025	41	1,893	19.38.40	07/08/2025
42	17,260	19.45.41	07/08/2025	42	1,893	19.38.41	07/08/2025
43	17,260	19.45.42	07/08/2025	43	1,893	19.38.42	07/08/2025
44	17,250	19.45.43	07/08/2025	44	1,892	19.38.43	07/08/2025
45	17,250	19.45.44	07/08/2025	45	1,892	19.38.44	07/08/2025
46	17,250	19.45.45	07/08/2025	46	1,892	19.38.45	07/08/2025
47	17,250	19.45.46	07/08/2025	47	1,892	19.38.46	07/08/2025
48	17,250	19.45.47	07/08/2025	48	1,892	19.38.47	07/08/2025
49	17,250	19.45.48	07/08/2025	49	1,892	19.38.48	07/08/2025
50	17,250	19.45.49	07/08/2025	50	1,892	19.38.49	07/08/2025
	17,261				1,893		

Tegangan maksimum, Vmp (volt) dan Kuat arus maksimum, Imp (A) 175 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	16,830	19.51.03	07/08/2025	1	1,857	19.38.00	07/08/2025
2	16,830	19.51.04	07/08/2025	2	1,857	19.38.01	07/08/2025
3	16,830	19.51.05	07/08/2025	3	1,857	19.38.02	07/08/2025
4	16,820	19.51.06	07/08/2025	4	1,856	19.38.03	07/08/2025
5	16,820	19.51.07	07/08/2025	5	1,856	19.38.04	07/08/2025
6	16,820	19.51.08	07/08/2025	6	1,856	19.38.05	07/08/2025
7	16,820	19.51.09	07/08/2025	7	1,856	19.38.06	07/08/2025
8	16,820	19.51.10	07/08/2025	8	1,856	19.38.07	07/08/2025
9	16,820	19.51.11	07/08/2025	9	1,856	19.38.08	07/08/2025
10	16,820	19.51.12	07/08/2025	10	1,856	19.38.09	07/08/2025
11	16,820	19.51.13	07/08/2025	11	1,856	19.38.10	07/08/2025
12	16,820	19.51.14	07/08/2025	12	1,856	19.38.11	07/08/2025
13	16,820	19.51.15	07/08/2025	13	1,856	19.38.12	07/08/2025
14	16,820	19.51.16	07/08/2025	14	1,856	19.38.13	07/08/2025
15	16,820	19.51.17	07/08/2025	15	1,856	19.38.14	07/08/2025
16	16,820	19.51.18	07/08/2025	16	1,856	19.38.15	07/08/2025
17	16,820	19.51.19	07/08/2025	17	1,856	19.38.16	07/08/2025
18	16,820	19.51.20	07/08/2025	18	1,856	19.38.17	07/08/2025
19	16,820	19.51.21	07/08/2025	19	1,856	19.38.18	07/08/2025
20	16,820	19.51.22	07/08/2025	20	1,856	19.38.19	07/08/2025
21	16,820	19.51.23	07/08/2025	21	1,856	19.38.20	07/08/2025
22	16,820	19.51.24	07/08/2025	22	1,856	19.38.21	07/08/2025
23	16,810	19.51.25	07/08/2025	23	1,855	19.38.22	07/08/2025
24	16,810	19.51.26	07/08/2025	24	1,855	19.38.23	07/08/2025
25	16,810	19.51.27	07/08/2025	25	1,855	19.38.24	07/08/2025
26	16,810	19.51.28	07/08/2025	26	1,855	19.38.25	07/08/2025
27	16,810	19.51.29	07/08/2025	27	1,855	19.38.26	07/08/2025
28	16,810	19.51.30	07/08/2025	28	1,855	19.38.27	07/08/2025
29	16,810	19.51.31	07/08/2025	29	1,855	19.38.28	07/08/2025
30	16,810	19.51.32	07/08/2025	30	1,855	19.38.29	07/08/2025
31	16,810	19.51.33	07/08/2025	31	1,855	19.38.30	07/08/2025
32	16,810	19.51.34	07/08/2025	32	1,855	19.38.31	07/08/2025
33	16,810	19.51.35	07/08/2025	33	1,855	19.38.32	07/08/2025
34	16,810	19.51.36	07/08/2025	34	1,855	19.38.33	07/08/2025
35	16,810	19.51.37	07/08/2025	35	1,855	19.38.34	07/08/2025
36	16,810	19.51.38	07/08/2025	36	1,855	19.38.35	07/08/2025
37	16,810	19.51.39	07/08/2025	37	1,855	19.38.36	07/08/2025
38	16,810	19.51.40	07/08/2025	38	1,855	19.38.37	07/08/2025
39	16,810	19.51.41	07/08/2025	39	1,855	19.38.38	07/08/2025
40	16,810	19.51.42	07/08/2025	40	1,855	19.38.39	07/08/2025
41	16,810	19.51.43	07/08/2025	41	1,855	19.38.40	07/08/2025
42	16,810	19.51.44	07/08/2025	42	1,855	19.38.41	07/08/2025
43	16,810	19.51.45	07/08/2025	43	1,855	19.38.42	07/08/2025
44	16,810	19.51.46	07/08/2025	44	1,855	19.38.43	07/08/2025
45	16,810	19.51.47	07/08/2025	45	1,855	19.38.44	07/08/2025
46	16,810	19.51.48	07/08/2025	46	1,855	19.38.45	07/08/2025
47	16,810	19.51.49	07/08/2025	47	1,855	19.38.46	07/08/2025
48	16,810	19.51.50	07/08/2025	48	1,855	19.38.47	07/08/2025
49	16,810	19.51.51	07/08/2025	49	1,855	19.38.48	07/08/2025
50	16,810	19.51.52	07/08/2025	50	1,855	19.38.49	07/08/2025
	16,815				1,855		

Tegangan maksimum, Vmp (volt) dan Kuat arus maksimum, Imp (A) 150 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	16,200	19.56.10	07/08/2025	1	1,801	19.38.00	07/08/2025
2	16,200	19.56.11	07/08/2025	2	1,801	19.38.01	07/08/2025
3	16,200	19.56.12	07/08/2025	3	1,801	19.38.02	07/08/2025
4	16,200	19.56.13	07/08/2025	4	1,801	19.38.03	07/08/2025
5	16,200	19.56.14	07/08/2025	5	1,801	19.38.04	07/08/2025
6	16,200	19.56.15	07/08/2025	6	1,801	19.38.05	07/08/2025
7	16,200	19.56.16	07/08/2025	7	1,801	19.38.06	07/08/2025
8	16,200	19.56.17	07/08/2025	8	1,801	19.38.07	07/08/2025
9	16,200	19.56.18	07/08/2025	9	1,801	19.38.08	07/08/2025
10	16,200	19.56.19	07/08/2025	10	1,801	19.38.09	07/08/2025
11	16,200	19.56.20	07/08/2025	11	1,801	19.38.10	07/08/2025
12	16,200	19.56.21	07/08/2025	12	1,801	19.38.11	07/08/2025
13	16,200	19.56.22	07/08/2025	13	1,801	19.38.12	07/08/2025
14	16,200	19.56.23	07/08/2025	14	1,801	19.38.13	07/08/2025
15	16,200	19.56.24	07/08/2025	15	1,801	19.38.14	07/08/2025
16	16,200	19.56.25	07/08/2025	16	1,801	19.38.15	07/08/2025
17	16,190	19.56.26	07/08/2025	17	1,800	19.38.16	07/08/2025
18	16,190	19.56.27	07/08/2025	18	1,800	19.38.17	07/08/2025
19	16,190	19.56.28	07/08/2025	19	1,800	19.38.18	07/08/2025
20	16,190	19.56.29	07/08/2025	20	1,800	19.38.19	07/08/2025
21	16,190	19.56.30	07/08/2025	21	1,800	19.38.20	07/08/2025
22	16,190	19.56.31	07/08/2025	22	1,800	19.38.21	07/08/2025
23	16,190	19.56.32	07/08/2025	23	1,800	19.38.22	07/08/2025
24	16,190	19.56.33	07/08/2025	24	1,800	19.38.23	07/08/2025
25	16,190	19.56.34	07/08/2025	25	1,800	19.38.24	07/08/2025
26	16,190	19.56.35	07/08/2025	26	1,800	19.38.25	07/08/2025
27	16,190	19.56.36	07/08/2025	27	1,800	19.38.26	07/08/2025
28	16,190	19.56.37	07/08/2025	28	1,800	19.38.27	07/08/2025
29	16,190	19.56.38	07/08/2025	29	1,800	19.38.28	07/08/2025
30	16,190	19.56.39	07/08/2025	30	1,800	19.38.29	07/08/2025
31	16,190	19.56.40	07/08/2025	31	1,800	19.38.30	07/08/2025
32	16,190	19.56.41	07/08/2025	32	1,800	19.38.31	07/08/2025
33	16,190	19.56.42	07/08/2025	33	1,800	19.38.32	07/08/2025
34	16,190	19.56.43	07/08/2025	34	1,800	19.38.33	07/08/2025
35	16,190	19.56.44	07/08/2025	35	1,800	19.38.34	07/08/2025
36	16,190	19.56.45	07/08/2025	36	1,800	19.38.35	07/08/2025
37	16,190	19.56.46	07/08/2025	37	1,800	19.38.36	07/08/2025
38	16,190	19.56.47	07/08/2025	38	1,800	19.38.37	07/08/2025
39	16,190	19.56.48	07/08/2025	39	1,800	19.38.38	07/08/2025
40	16,190	19.56.49	07/08/2025	40	1,800	19.38.39	07/08/2025
41	16,190	19.56.50	07/08/2025	41	1,800	19.38.40	07/08/2025
42	16,190	19.56.51	07/08/2025	42	1,800	19.38.41	07/08/2025
43	16,190	19.56.52	07/08/2025	43	1,800	19.38.42	07/08/2025
44	16,190	19.56.53	07/08/2025	44	1,800	19.38.43	07/08/2025
45	16,190	19.56.54	07/08/2025	45	1,800	19.38.44	07/08/2025
46	16,190	19.56.55	07/08/2025	46	1,800	19.38.45	07/08/2025
47	16,190	19.56.56	07/08/2025	47	1,800	19.38.46	07/08/2025
48	16,190	19.56.57	07/08/2025	48	1,800	19.38.47	07/08/2025
49	16,190	19.56.58	07/08/2025	49	1,800	19.38.48	07/08/2025
50	16,190	19.56.59	07/08/2025	50	1,800	19.38.49	07/08/2025
	16,193				1,800		

Tegangan maksimum, Vmp (volt) dan Kuat arus maksimum, Imp (A) 125 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	15,400	20.00.07	07/08/2025	1	1,730	19.38.00	07/08/2025
2	15,400	20.00.08	07/08/2025	2	1,730	19.38.01	07/08/2025
3	15,390	20.00.09	07/08/2025	3	1,729	19.38.02	07/08/2025
4	15,390	20.00.10	07/08/2025	4	1,729	19.38.03	07/08/2025
5	15,390	20.00.11	07/08/2025	5	1,729	19.38.04	07/08/2025
6	15,390	20.00.12	07/08/2025	6	1,729	19.38.05	07/08/2025
7	15,390	20.00.13	07/08/2025	7	1,729	19.38.06	07/08/2025
8	15,390	20.00.14	07/08/2025	8	1,729	19.38.07	07/08/2025
9	15,390	20.00.15	07/08/2025	9	1,729	19.38.08	07/08/2025
10	15,390	20.00.16	07/08/2025	10	1,729	19.38.09	07/08/2025
11	15,390	20.00.17	07/08/2025	11	1,729	19.38.10	07/08/2025
12	15,390	20.00.18	07/08/2025	12	1,729	19.38.11	07/08/2025
13	15,390	20.00.19	07/08/2025	13	1,729	19.38.12	07/08/2025
14	15,390	20.00.20	07/08/2025	14	1,729	19.38.13	07/08/2025
15	15,390	20.00.21	07/08/2025	15	1,729	19.38.14	07/08/2025
16	15,390	20.00.22	07/08/2025	16	1,729	19.38.15	07/08/2025
17	15,390	20.00.23	07/08/2025	17	1,729	19.38.16	07/08/2025
18	15,390	20.00.24	07/08/2025	18	1,729	19.38.17	07/08/2025
19	15,390	20.00.25	07/08/2025	19	1,729	19.38.18	07/08/2025
20	15,390	20.00.26	07/08/2025	20	1,729	19.38.19	07/08/2025
21	15,390	20.00.27	07/08/2025	21	1,729	19.38.20	07/08/2025
22	15,390	20.00.28	07/08/2025	22	1,729	19.38.21	07/08/2025
23	15,390	20.00.29	07/08/2025	23	1,729	19.38.22	07/08/2025
24	15,390	20.00.30	07/08/2025	24	1,729	19.38.23	07/08/2025
25	15,390	20.00.31	07/08/2025	25	1,729	19.38.24	07/08/2025
26	15,390	20.00.32	07/08/2025	26	1,729	19.38.25	07/08/2025
27	15,390	20.00.33	07/08/2025	27	1,729	19.38.26	07/08/2025
28	15,390	20.00.34	07/08/2025	28	1,729	19.38.27	07/08/2025
29	15,390	20.00.35	07/08/2025	29	1,729	19.38.28	07/08/2025
30	15,390	20.00.36	07/08/2025	30	1,729	19.38.29	07/08/2025
31	15,390	20.00.37	07/08/2025	31	1,729	19.38.30	07/08/2025
32	15,390	20.00.38	07/08/2025	32	1,729	19.38.31	07/08/2025
33	15,390	20.00.39	07/08/2025	33	1,729	19.38.32	07/08/2025
34	15,390	20.00.40	07/08/2025	34	1,729	19.38.33	07/08/2025
35	15,390	20.00.41	07/08/2025	35	1,729	19.38.34	07/08/2025
36	15,390	20.00.42	07/08/2025	36	1,729	19.38.35	07/08/2025
37	15,390	20.00.43	07/08/2025	37	1,729	19.38.36	07/08/2025
38	15,390	20.00.44	07/08/2025	38	1,729	19.38.37	07/08/2025
39	15,390	20.00.45	07/08/2025	39	1,729	19.38.38	07/08/2025
40	15,390	20.00.46	07/08/2025	40	1,729	19.38.39	07/08/2025
41	15,390	20.00.47	07/08/2025	41	1,729	19.38.40	07/08/2025
42	15,390	20.00.48	07/08/2025	42	1,729	19.38.41	07/08/2025
43	15,390	20.00.49	07/08/2025	43	1,729	19.38.42	07/08/2025
44	15,390	20.00.50	07/08/2025	44	1,729	19.38.43	07/08/2025
45	15,390	20.00.51	07/08/2025	45	1,729	19.38.44	07/08/2025
46	15,390	20.00.52	07/08/2025	46	1,729	19.38.45	07/08/2025
47	15,390	20.00.53	07/08/2025	47	1,729	19.38.46	07/08/2025
48	15,390	20.00.54	07/08/2025	48	1,729	19.38.47	07/08/2025
49	15,390	20.00.55	07/08/2025	49	1,729	19.38.48	07/08/2025
50	15,390	20.00.56	07/08/2025	50	1,729	19.38.49	07/08/2025
	15,390				1,729		

Tegangan maksimum, Vmp (volt) dan Kuat arus maksimum, Imp (A) 100 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	13,930	20.05.12	07/08/2025	1	1,589	19.38.00	07/08/2025
2	13,930	20.05.13	07/08/2025	2	1,589	19.38.01	07/08/2025
3	13,930	20.05.14	07/08/2025	3	1,589	19.38.02	07/08/2025
4	13,930	20.05.15	07/08/2025	4	1,589	19.38.03	07/08/2025
5	13,930	20.05.16	07/08/2025	5	1,589	19.38.04	07/08/2025
6	13,930	20.05.17	07/08/2025	6	1,589	19.38.05	07/08/2025
7	13,930	20.05.18	07/08/2025	7	1,589	19.38.06	07/08/2025
8	13,920	20.05.19	07/08/2025	8	1,588	19.38.07	07/08/2025
9	13,920	20.05.20	07/08/2025	9	1,588	19.38.08	07/08/2025
10	13,920	20.05.21	07/08/2025	10	1,588	19.38.09	07/08/2025
11	13,930	20.05.22	07/08/2025	11	1,589	19.38.10	07/08/2025
12	13,930	20.05.23	07/08/2025	12	1,589	19.38.11	07/08/2025
13	13,930	20.05.24	07/08/2025	13	1,589	19.38.12	07/08/2025
14	13,930	20.05.25	07/08/2025	14	1,589	19.38.13	07/08/2025
15	13,920	20.05.26	07/08/2025	15	1,588	19.38.14	07/08/2025
16	13,920	20.05.27	07/08/2025	16	1,588	19.38.15	07/08/2025
17	13,920	20.05.28	07/08/2025	17	1,588	19.38.16	07/08/2025
18	13,920	20.05.29	07/08/2025	18	1,588	19.38.17	07/08/2025
19	13,920	20.05.30	07/08/2025	19	1,588	19.38.18	07/08/2025
20	13,920	20.05.31	07/08/2025	20	1,588	19.38.19	07/08/2025
21	13,930	20.05.32	07/08/2025	21	1,589	19.38.20	07/08/2025
22	13,920	20.05.33	07/08/2025	22	1,588	19.38.21	07/08/2025
23	13,920	20.05.34	07/08/2025	23	1,588	19.38.22	07/08/2025
24	13,920	20.05.35	07/08/2025	24	1,588	19.38.23	07/08/2025
25	13,920	20.05.36	07/08/2025	25	1,588	19.38.24	07/08/2025
26	13,920	20.05.37	07/08/2025	26	1,588	19.38.25	07/08/2025
27	13,920	20.05.38	07/08/2025	27	1,588	19.38.26	07/08/2025
28	13,920	20.05.39	07/08/2025	28	1,588	19.38.27	07/08/2025
29	13,920	20.05.40	07/08/2025	29	1,588	19.38.28	07/08/2025
30	13,920	20.05.41	07/08/2025	30	1,588	19.38.29	07/08/2025
31	13,920	20.05.42	07/08/2025	31	1,588	19.38.30	07/08/2025
32	13,920	20.05.43	07/08/2025	32	1,588	19.38.31	07/08/2025
33	13,930	20.05.44	07/08/2025	33	1,589	19.38.32	07/08/2025
34	13,930	20.05.45	07/08/2025	34	1,589	19.38.33	07/08/2025
35	13,930	20.05.46	07/08/2025	35	1,589	19.38.34	07/08/2025
36	13,930	20.05.47	07/08/2025	36	1,589	19.38.35	07/08/2025
37	13,930	20.05.48	07/08/2025	37	1,589	19.38.36	07/08/2025
38	13,930	20.05.49	07/08/2025	38	1,589	19.38.37	07/08/2025
39	13,930	20.05.50	07/08/2025	39	1,589	19.38.38	07/08/2025
40	13,930	20.05.51	07/08/2025	40	1,589	19.38.39	07/08/2025
41	13,930	20.05.52	07/08/2025	41	1,589	19.38.40	07/08/2025
42	13,930	20.05.53	07/08/2025	42	1,589	19.38.41	07/08/2025
43	13,930	20.05.54	07/08/2025	43	1,589	19.38.42	07/08/2025
44	13,930	20.05.55	07/08/2025	44	1,589	19.38.43	07/08/2025
45	13,930	20.05.56	07/08/2025	45	1,589	19.38.44	07/08/2025
46	13,930	20.05.57	07/08/2025	46	1,589	19.38.45	07/08/2025
47	13,930	20.05.58	07/08/2025	47	1,589	19.38.46	07/08/2025
48	13,930	20.05.59	07/08/2025	48	1,589	19.38.47	07/08/2025
49	13,930	20.06.00	07/08/2025	49	1,589	19.38.48	07/08/2025
50	13,930	20.06.01	07/08/2025	50	1,589	19.38.49	07/08/2025
	13,926				1,588		

Tegangan maksimum, Vmp (volt) dan Kuat arus maksimum, Imp (A) 75 volt

Vmp				Imp			
No.	value	time	date	No.	value	time	date
1	11,360	20.10.05	07/08/2025	1	1,337	19.38.00	07/08/2025
2	11,360	20.10.06	07/08/2025	2	1,337	19.38.01	07/08/2025
3	11,360	20.10.07	07/08/2025	3	1,337	19.38.02	07/08/2025
4	11,360	20.10.08	07/08/2025	4	1,337	19.38.03	07/08/2025
5	11,370	20.10.09	07/08/2025	5	1,338	19.38.04	07/08/2025
6	11,370	20.10.10	07/08/2025	6	1,338	19.38.05	07/08/2025
7	11,370	20.10.11	07/08/2025	7	1,338	19.38.06	07/08/2025
8	11,370	20.10.12	07/08/2025	8	1,338	19.38.07	07/08/2025
9	11,370	20.10.13	07/08/2025	9	1,338	19.38.08	07/08/2025
10	11,370	20.10.14	07/08/2025	10	1,338	19.38.09	07/08/2025
11	11,370	20.10.15	07/08/2025	11	1,338	19.38.10	07/08/2025
12	11,370	20.10.16	07/08/2025	12	1,338	19.38.11	07/08/2025
13	11,370	20.10.17	07/08/2025	13	1,338	19.38.12	07/08/2025
14	11,370	20.10.18	07/08/2025	14	1,338	19.38.13	07/08/2025
15	11,370	20.10.19	07/08/2025	15	1,338	19.38.14	07/08/2025
16	11,370	20.10.20	07/08/2025	16	1,338	19.38.15	07/08/2025
17	11,370	20.10.21	07/08/2025	17	1,338	19.38.16	07/08/2025
18	11,370	20.10.22	07/08/2025	18	1,338	19.38.17	07/08/2025
19	11,380	20.10.23	07/08/2025	19	1,339	19.38.18	07/08/2025
20	11,380	20.10.24	07/08/2025	20	1,339	19.38.19	07/08/2025
21	11,390	20.10.25	07/08/2025	21	1,340	19.38.20	07/08/2025
22	11,380	20.10.26	07/08/2025	22	1,339	19.38.21	07/08/2025
23	11,370	20.10.27	07/08/2025	23	1,338	19.38.22	07/08/2025
24	11,350	20.10.28	07/08/2025	24	1,336	19.38.23	07/08/2025
25	11,340	20.10.29	07/08/2025	25	1,335	19.38.24	07/08/2025
26	11,330	20.10.30	07/08/2025	26	1,334	19.38.25	07/08/2025
27	11,320	20.10.31	07/08/2025	27	1,333	19.38.26	07/08/2025
28	11,310	20.10.32	07/08/2025	28	1,332	19.38.27	07/08/2025
29	11,290	20.10.33	07/08/2025	29	1,330	19.38.28	07/08/2025
30	11,290	20.10.34	07/08/2025	30	1,330	19.38.29	07/08/2025
31	11,280	20.10.35	07/08/2025	31	1,329	19.38.30	07/08/2025
32	11,290	20.10.36	07/08/2025	32	1,330	19.38.31	07/08/2025
33	11,290	20.10.37	07/08/2025	33	1,330	19.38.32	07/08/2025
34	11,290	20.10.38	07/08/2025	34	1,330	19.38.33	07/08/2025
35	11,290	20.10.39	07/08/2025	35	1,330	19.38.34	07/08/2025
36	11,290	20.10.40	07/08/2025	36	1,330	19.38.35	07/08/2025
37	11,290	20.10.41	07/08/2025	37	1,330	19.38.36	07/08/2025
38	11,290	20.10.42	07/08/2025	38	1,330	19.38.37	07/08/2025
39	11,290	20.10.43	07/08/2025	39	1,330	19.38.38	07/08/2025
40	11,290	20.10.44	07/08/2025	40	1,330	19.38.39	07/08/2025
41	11,290	20.10.45	07/08/2025	41	1,330	19.38.40	07/08/2025
42	11,290	20.10.46	07/08/2025	42	1,330	19.38.41	07/08/2025
43	11,290	20.10.47	07/08/2025	43	1,330	19.38.42	07/08/2025
44	11,290	20.10.48	07/08/2025	44	1,330	19.38.43	07/08/2025
45	11,290	20.10.49	07/08/2025	45	1,330	19.38.44	07/08/2025
46	11,290	20.10.50	07/08/2025	46	1,330	19.38.45	07/08/2025
47	11,290	20.10.51	07/08/2025	47	1,330	19.38.46	07/08/2025
48	11,290	20.10.52	07/08/2025	48	1,330	19.38.47	07/08/2025
49	11,290	20.10.53	07/08/2025	49	1,330	19.38.48	07/08/2025
50	11,290	20.10.54	07/08/2025	50	1,330	19.38.49	07/08/2025
	11,331				1,334		

Tabel lampiran 3 tegangan maksimum, Voc (volt) 225 volt

No.	value	time	date
1	17,660	19.45.20	06/08/2025
2	17,660	19.45.21	06/08/2025
3	17,660	19.45.22	06/08/2025
4	17,660	19.45.23	06/08/2025
5	17,660	19.45.24	06/08/2025
6	17,650	19.45.25	06/08/2025
7	17,650	19.45.26	06/08/2025
8	17,650	19.45.27	06/08/2025
9	17,650	19.45.28	06/08/2025
10	17,650	19.45.29	06/08/2025
11	17,650	19.45.30	06/08/2025
12	17,650	19.45.31	06/08/2025
13	17,650	19.45.32	06/08/2025
14	17,650	19.45.33	06/08/2025
15	17,650	19.45.34	06/08/2025
16	17,650	19.45.35	06/08/2025
17	17,650	19.45.36	06/08/2025
18	17,650	19.45.37	06/08/2025
19	17,650	19.45.38	06/08/2025
20	17,650	19.45.39	06/08/2025
21	17,650	19.45.40	06/08/2025
22	17,650	19.45.41	06/08/2025
23	17,650	19.45.42	06/08/2025
24	17,640	19.45.43	06/08/2025
25	17,640	19.45.44	06/08/2025
26	17,640	19.45.45	06/08/2025
27	17,640	19.45.46	06/08/2025
28	17,640	19.45.47	06/08/2025
29	17,640	19.45.48	06/08/2025
30	17,640	19.45.49	06/08/2025
31	17,640	19.45.50	06/08/2025
32	17,640	19.45.51	06/08/2025
33	17,640	19.45.52	06/08/2025
34	17,640	19.45.53	06/08/2025
35	17,640	19.45.54	06/08/2025
36	17,640	19.45.55	06/08/2025
37	17,640	19.45.56	06/08/2025
38	17,640	19.45.57	06/08/2025
39	17,640	19.45.58	06/08/2025
40	17,640	19.45.59	06/08/2025
41	17,640	19.46.00	06/08/2025
42	17,640	19.46.01	06/08/2025
43	17,640	19.46.02	06/08/2025
44	17,640	19.46.03	06/08/2025
45	17,640	19.46.04	06/08/2025
46	17,640	19.46.05	06/08/2025
47	17,640	19.46.06	06/08/2025
48	17,640	19.46.07	06/08/2025
49	17,640	19.46.08	06/08/2025
50	17,640	19.46.09	06/08/2025
	17,646		

Tegangan maksimum, Voc (volt) 200 volt

No.	value	time	date
1	17,300	19.38.00	06/08/2025
2	17,300	19.38.01	06/08/2025
3	17,300	19.38.02	06/08/2025
4	17,300	19.38.03	06/08/2025
5	17,300	19.38.04	06/08/2025
6	17,300	19.38.05	06/08/2025
7	17,300	19.38.06	06/08/2025
8	17,300	19.38.07	06/08/2025
9	17,300	19.38.08	06/08/2025
10	17,300	19.38.09	06/08/2025
11	17,300	19.38.10	06/08/2025
12	17,300	19.38.11	06/08/2025
13	17,300	19.38.12	06/08/2025
14	17,300	19.38.13	06/08/2025
15	17,300	19.38.14	06/08/2025
16	17,300	19.38.15	06/08/2025
17	17,300	19.38.16	06/08/2025
18	17,300	19.38.17	06/08/2025
19	17,300	19.38.18	06/08/2025
20	17,300	19.38.19	06/08/2025
21	17,300	19.38.20	06/08/2025
22	17,300	19.38.21	06/08/2025
23	17,300	19.38.22	06/08/2025
24	17,300	19.38.23	06/08/2025
25	17,300	19.38.24	06/08/2025
26	17,300	19.38.25	06/08/2025
27	17,300	19.38.26	06/08/2025
28	17,300	19.38.27	06/08/2025
29	17,290	19.38.28	06/08/2025
30	17,290	19.38.29	06/08/2025
31	17,290	19.38.30	06/08/2025
32	17,290	19.38.31	06/08/2025
33	17,290	19.38.32	06/08/2025
34	17,290	19.38.33	06/08/2025
35	17,290	19.38.34	06/08/2025
36	17,290	19.38.35	06/08/2025
37	17,290	19.38.36	06/08/2025
38	17,290	19.38.37	06/08/2025
39	17,290	19.38.38	06/08/2025
40	17,290	19.38.39	06/08/2025
41	17,290	19.38.40	06/08/2025
42	17,290	19.38.41	06/08/2025
43	17,290	19.38.42	06/08/2025
44	17,290	19.38.43	06/08/2025
45	17,290	19.38.44	06/08/2025
46	17,290	19.38.45	06/08/2025
47	17,290	19.38.46	06/08/2025
48	17,290	19.38.47	06/08/2025
49	17,290	19.38.48	06/08/2025
50	17,290	19.38.49	06/08/2025
	17,296		

Tegangan maksimum, Voc (volt) 175 volt

No.	value	time	date
1	16,900	19.40.05	06/08/2025
2	16,900	19.40.06	06/08/2025
3	16,900	19.40.07	06/08/2025
4	16,900	19.40.08	06/08/2025
5	16,900	19.40.09	06/08/2025
6	16,900	19.40.10	06/08/2025
7	16,890	19.40.11	06/08/2025
8	16,890	19.40.12	06/08/2025
9	16,890	19.40.13	06/08/2025
10	16,890	19.40.14	06/08/2025
11	16,890	19.40.15	06/08/2025
12	16,890	19.40.16	06/08/2025
13	16,890	19.40.17	06/08/2025
14	16,890	19.40.18	06/08/2025
15	16,890	19.40.19	06/08/2025
16	16,890	19.40.20	06/08/2025
17	16,890	19.40.21	06/08/2025
18	16,890	19.40.22	06/08/2025
19	16,890	19.40.23	06/08/2025
20	16,890	19.40.24	06/08/2025
21	16,890	19.40.25	06/08/2025
22	16,890	19.40.26	06/08/2025
23	16,890	19.40.27	06/08/2025
24	16,890	19.40.28	06/08/2025
25	16,890	19.40.29	06/08/2025
26	16,890	19.40.30	06/08/2025
27	16,890	19.40.31	06/08/2025
28	16,890	19.40.32	06/08/2025
29	16,890	19.40.33	06/08/2025
30	16,890	19.40.34	06/08/2025
31	16,890	19.40.35	06/08/2025
32	16,890	19.40.36	06/08/2025
33	16,890	19.40.37	06/08/2025
34	16,890	19.40.38	06/08/2025
35	16,880	19.40.39	06/08/2025
36	16,880	19.40.40	06/08/2025
37	16,880	19.40.41	06/08/2025
38	16,880	19.40.42	06/08/2025
39	16,880	19.40.43	06/08/2025
40	16,880	19.40.44	06/08/2025
41	16,880	19.40.45	06/08/2025
42	16,880	19.40.46	06/08/2025
43	16,880	19.40.47	06/08/2025
44	16,880	19.40.48	06/08/2025
45	16,880	19.40.49	06/08/2025
46	16,880	19.40.50	06/08/2025
47	16,880	19.40.51	06/08/2025
48	16,880	19.40.52	06/08/2025
49	16,880	19.40.53	06/08/2025
50	16,880	19.40.54	06/08/2025
	16,888		

Tegangan maksimum, Voc (volt) 150 volt

No.	value	time	date
1	16,310	20.10.15	06/08/2025
2	16,310	20.10.16	06/08/2025
3	16,310	20.10.17	06/08/2025
4	16,310	20.10.18	06/08/2025
5	16,310	20.10.19	06/08/2025
6	16,310	20.10.20	06/08/2025
7	16,310	20.10.21	06/08/2025
8	16,310	20.10.22	06/08/2025
9	16,310	20.10.23	06/08/2025
10	16,310	20.10.24	06/08/2025
11	16,310	20.10.25	06/08/2025
12	16,310	20.10.26	06/08/2025
13	16,300	20.10.27	06/08/2025
14	16,300	20.10.28	06/08/2025
15	16,300	20.10.29	06/08/2025
16	16,300	20.10.30	06/08/2025
17	16,300	20.10.31	06/08/2025
18	16,300	20.10.32	06/08/2025
19	16,300	20.10.33	06/08/2025
20	16,300	20.10.34	06/08/2025
21	16,300	20.10.35	06/08/2025
22	16,300	20.10.36	06/08/2025
23	16,300	20.10.37	06/08/2025
24	16,300	20.10.38	06/08/2025
25	16,300	20.10.39	06/08/2025
26	16,300	20.10.40	06/08/2025
27	16,300	20.10.41	06/08/2025
28	16,300	20.10.42	06/08/2025
29	16,300	20.10.43	06/08/2025
30	16,300	20.10.44	06/08/2025
31	16,300	20.10.45	06/08/2025
32	16,300	20.10.46	06/08/2025
33	16,300	20.10.47	06/08/2025
34	16,300	20.10.48	06/08/2025
35	16,300	20.10.49	06/08/2025
36	16,300	20.10.50	06/08/2025
37	16,300	20.10.51	06/08/2025
38	16,300	20.10.52	06/08/2025
39	16,300	20.10.53	06/08/2025
40	16,300	20.10.54	06/08/2025
41	16,300	20.10.55	06/08/2025
42	16,300	20.10.56	06/08/2025
43	16,300	20.10.57	06/08/2025
44	16,300	20.10.58	06/08/2025
45	16,300	20.10.59	06/08/2025
46	16,300	20.11.00	06/08/2025
47	16,300	20.11.01	07/08/2025
48	16,300	20.11.02	08/08/2025
49	16,300	20.11.03	09/08/2025
50	16,300	20.11.04	10/08/2025
	16,302		

Tegangan maksimum, Voc (volt) 125 volt

No.	value	time	date
1	15,570	20.34.09	06/08/2025
2	15,570	20.34.10	06/08/2025
3	15,570	20.34.11	06/08/2025
4	15,570	20.34.12	06/08/2025
5	15,570	20.34.13	06/08/2025
6	15,570	20.34.14	06/08/2025
7	15,570	20.34.15	06/08/2025
8	15,570	20.34.16	06/08/2025
9	15,570	20.34.17	06/08/2025
10	15,570	20.34.18	06/08/2025
11	15,570	20.34.19	06/08/2025
12	15,570	20.34.20	06/08/2025
13	15,570	20.34.21	06/08/2025
14	15,570	20.34.22	06/08/2025
15	15,570	20.34.23	06/08/2025
16	15,570	20.34.24	06/08/2025
17	15,570	20.34.25	06/08/2025
18	15,570	20.34.26	06/08/2025
19	15,570	20.34.27	06/08/2025
20	15,570	20.34.28	06/08/2025
21	15,570	20.34.29	06/08/2025
22	15,570	20.34.30	06/08/2025
23	15,570	20.34.31	06/08/2025
24	15,570	20.34.32	06/08/2025
25	15,570	20.34.33	06/08/2025
26	15,570	20.34.34	06/08/2025
27	15,570	20.34.35	06/08/2025
28	15,570	20.34.36	06/08/2025
29	15,570	20.34.37	06/08/2025
30	15,570	20.34.38	06/08/2025
31	15,570	20.34.39	06/08/2025
32	15,570	20.34.40	06/08/2025
33	15,570	20.34.41	06/08/2025
34	15,570	20.34.42	06/08/2025
35	15,570	20.34.43	06/08/2025
36	15,570	20.34.44	06/08/2025
37	15,570	20.34.45	06/08/2025
38	15,570	20.34.46	06/08/2025
39	15,570	20.34.47	06/08/2025
40	15,570	20.34.48	06/08/2025
41	15,570	20.34.49	06/08/2025
42	15,570	20.34.50	06/08/2025
43	15,570	20.34.51	06/08/2025
44	15,570	20.34.52	06/08/2025
45	15,570	20.34.53	06/08/2025
46	15,570	20.34.54	06/08/2025
47	15,570	20.34.55	06/08/2025
48	15,570	20.34.56	06/08/2025
49	15,570	20.34.57	06/08/2025
50	15,570	20.34.58	06/08/2025
	15,570		

Tegangan maksimum, Voc (volt) 100 volt

No.	value	time	date
1	14,460	20.46.13	06/08/2025
2	14,460	20.46.14	06/08/2025
3	14,460	20.46.15	06/08/2025
4	14,460	20.46.16	06/08/2025
5	14,460	20.46.17	06/08/2025
6	14,460	20.46.18	06/08/2025
7	14,460	20.46.19	06/08/2025
8	14,460	20.46.20	06/08/2025
9	14,460	20.46.21	06/08/2025
10	14,460	20.46.22	06/08/2025
11	14,460	20.46.23	06/08/2025
12	14,460	20.46.24	06/08/2025
13	14,460	20.46.25	06/08/2025
14	14,460	20.46.26	06/08/2025
15	14,460	20.46.27	06/08/2025
16	14,460	20.46.28	06/08/2025
17	14,460	20.46.29	06/08/2025
18	14,460	20.46.30	06/08/2025
19	14,460	20.46.31	06/08/2025
20	14,460	20.46.32	06/08/2025
21	14,460	20.46.33	06/08/2025
22	14,460	20.46.34	06/08/2025
23	14,460	20.46.35	06/08/2025
24	14,460	20.46.36	06/08/2025
25	14,460	20.46.37	06/08/2025
26	14,460	20.46.38	06/08/2025
27	14,460	20.46.39	06/08/2025
28	14,460	20.46.40	06/08/2025
29	14,460	20.46.41	06/08/2025
30	14,460	20.46.42	06/08/2025
31	14,460	20.46.43	06/08/2025
32	14,460	20.46.44	06/08/2025
33	14,460	20.46.45	06/08/2025
34	14,460	20.46.46	06/08/2025
35	14,460	20.46.47	06/08/2025
36	14,460	20.46.48	06/08/2025
37	14,460	20.46.49	06/08/2025
38	14,460	20.46.50	06/08/2025
39	14,460	20.46.51	06/08/2025
40	14,460	20.46.52	06/08/2025
41	14,460	20.46.53	06/08/2025
42	14,460	20.46.54	06/08/2025
43	14,460	20.46.55	06/08/2025
44	14,460	20.46.56	06/08/2025
45	14,460	20.46.57	06/08/2025
46	14,460	20.46.58	06/08/2025
47	14,460	20.46.59	06/08/2025
48	14,460	20.47.00	06/08/2025
49	14,460	20.47.01	06/08/2025
50	14,460	20.47.02	06/08/2025
	14,460		

Tegangan maksimum, Voc (volt) 75 volt)

No.	value	time	date
1	12,640	20.03.00	06/08/2025
2	12,640	20.03.01	06/08/2025
3	12,640	20.03.02	06/08/2025
4	12,640	20.03.03	06/08/2025
5	12,640	20.03.04	06/08/2025
6	12,640	20.03.05	06/08/2025
7	12,640	20.03.06	06/08/2025
8	12,640	20.03.07	06/08/2025
9	12,640	20.03.08	06/08/2025
10	12,640	20.03.09	06/08/2025
11	12,640	20.03.10	06/08/2025
12	12,640	20.03.11	06/08/2025
13	12,640	20.03.12	06/08/2025
14	12,640	20.03.13	06/08/2025
15	12,640	20.03.14	06/08/2025
16	12,640	20.03.15	06/08/2025
17	12,640	20.03.16	06/08/2025
18	12,640	20.03.17	06/08/2025
19	12,640	20.03.18	06/08/2025
20	12,640	20.03.19	06/08/2025
21	12,640	20.03.20	06/08/2025
22	12,640	20.03.21	06/08/2025
23	12,640	20.03.22	06/08/2025
24	12,640	20.03.23	06/08/2025
25	12,640	20.03.24	06/08/2025
26	12,640	20.03.25	06/08/2025
27	12,640	20.03.26	06/08/2025
28	12,640	20.03.27	06/08/2025
29	12,640	20.03.28	06/08/2025
30	12,640	20.03.29	06/08/2025
31	12,640	20.03.30	06/08/2025
32	12,640	20.03.31	06/08/2025
33	12,640	20.03.32	06/08/2025
34	12,640	20.03.33	06/08/2025
35	12,640	20.03.34	06/08/2025
36	12,640	20.03.35	06/08/2025
37	12,640	20.03.36	06/08/2025
38	12,640	20.03.37	06/08/2025
39	12,640	20.03.38	06/08/2025
40	12,640	20.03.39	06/08/2025
41	12,640	20.03.40	06/08/2025
42	12,640	20.03.41	06/08/2025
43	12,640	20.03.42	06/08/2025
44	12,640	20.03.43	06/08/2025
45	12,640	20.03.44	06/08/2025
46	12,640	20.03.45	06/08/2025
47	12,640	20.03.46	06/08/2025
48	12,640	20.03.47	06/08/2025
49	12,640	20.03.48	06/08/2025
50	12,650	20.03.49	06/08/2025
	12,640		

Tabel lampiran 4 kuat arus maksimum, I_{sc} (A)

No.	Short circuit current , I (Ampere)						
	I_{sc1}	I_{sc2}	I_{sc3}	I_{sc4}	I_{sc5}	I_{sc6}	I_{sc7}
1	0,370	0,279	0,194	0,126	0,075	0,037	0,014
2	0,369	0,280	0,194	0,126	0,075	0,037	0,014
3	0,369	0,279	0,192	0,123	0,075	0,037	0,014
4	0,370	0,279	0,193	0,126	0,075	0,037	0,014
5	0,370	0,279	0,193	0,126	0,072	0,037	0,014
Rata-rata	0,3696	0,2792	0,1932	0,1254	0,0744	0,037	0,014

Tabel lampiran 5 Resistansi kabel, R (ohm)

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		

Tabel lampiran 6 Hasil pengukuran intensitas cahaya

Pengukuran intensitas cahaya 225 Volt

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		(lux)	(Watt/mm 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	592,90
11	05/08/2025 22:31	74975	592,30
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	592,50
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	592,50
22	05/08/2025 22:31	74975	592,30
23	05/08/2025 22:31	74975	592,30
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	592,90
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	592,30
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	600,40
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	600,20
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
	Rata-rata	75288	594,78

Pengukuran intensitas cahaya 200 Volt

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		(lux)	(Watt/mm ²)
1	05/08/2025 22:38	72398	571,94
2	05/08/2025 22:38	72405	572,00
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	570,40
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	575,20
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	573,90
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	575,50
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	573,60
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	572,30
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	573,30
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
	Rata-rata	72442	572,29

Pengukuran intensitas cahaya 175 Volt

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		(lux)	(Watt/mm 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	556,00
5	05/08/2025 22:48	70124	553,98
6	05/08/2025 22:48	70025	553,20
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	552,30
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	553,20
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	550,50
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	550,50
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	548,70
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	548,70
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	547,80
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	547,80
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
	Rata-rata	69595	549,80

Pengukuran intensitas cahaya 150 Volt

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		(lux)	(Watt/mm 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	527,40
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	527,40
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	525,90
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	525,90
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	525,90
58	05/08/2025 22:54	66569	525,90
59	05/08/2025 22:54	66783	527,59
60	05/08/2025 22:54	66569	525,90
61	05/08/2025 22:54	66569	525,90
62	05/08/2025 22:54	66641	526,46
63	05/08/2025 22:54	66569	525,90
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	527,40
73	05/08/2025 22:55	66760	527,40
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	527,40
77	05/08/2025 22:55	66760	527,40
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
	Rata - rata	66749	527,31

Pengukuran intensitas cahaya 125 Volt

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		(lux)	(Watt/mm 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	500,00
31	05/08/2025 23:03	63291	500,00
32	05/08/2025 23:03	63342	500,40
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	509,30
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	Intensitas cahaya, Ir
		(lux)	(Watt/mm 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	481,60
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	482,50
43	05/08/2025 23:09	61101	482,70
44	05/08/2025 23:09	61403	485,08
45	05/08/2025 23:09	61151	483,10
46	05/08/2025 23:09	62151	491,00
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	482,40
97	05/08/2025 23:10	61023	482,08
98	05/08/2025 23:10	61013	482,00
	Rata - rata	61055	482,34

Pengukuran intensitas cahaya 75 Volt

No	Tanggal	Intensitas cahaya, Ir	Intensitas cahaya, Ir
		(lux)	(Watt/mm 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	452,80
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	454,60
16	05/08/2025 23:14	57773	456,40
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	464,70
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	464,70
	Rata - rata	58209	459,85

LAMPIRAN MATRIKS JURNAL RUJUKAN

No	Author/ Tahun	Judul	Tujuan	Metode	Hasil
1	(Loegimin dkk., 2020).	<i>Sistem Pendingin Air Untuk Panel Surya Dengan Metode Fuzzy Logic.</i>	Tujuan penelitian ini adalah untuk mengemban gkan dan menganalisis sistem pendinginan panel surya dengan menggunakan metode fuzzy logic. Penelitian ini berfokus pada upaya untuk memaksimalkan efisiensi panel sel surya dalam menghasilkan listrik serta menganalisis sistem pendinginan yang memanfaatkan cooling tower untuk menjaga suhu panel tetap dalam rentang optimal, yakni antara 25°C hingga 35°C. Dengan menjaga suhu panel dalam	Metode yang digunakan dalam penelitian ini adalah metode kualitatif yang melibatkan eksplorasi sistem pendinginan panel surya. Dalam implementasinya, penelitian ini menggabungkan penggunaan cooling tower dan fuzzy logic untuk mengontrol suhu panel surya secara otomatis. Sistem kontrol ini menggunakan mikrocontroller STM32 sebagai pusat pengendali yang mengelola kecepatan aliran air pendingin berdasarkan input dari sensor suhu yang terpasang.	Hasil penelitian ini menunjukkan bahwa penerapan sistem pendingin menggunakan metode fuzzy logic dapat secara signifikan meningkatkan efisiensi panel surya. Sistem pendingin yang dikembangkan berhasil menjaga suhu panel dalam rentang optimal, yaitu antara 25°C hingga 35°C, sehingga meminimalkan penurunan kemampuan panel dalam menghasilkan listrik. Penelitian mencatat bahwa suhu rata-rata panel surya tanpa pendingin mencapai 50.14°C, yang berakibat pada penurunan daya listrik yang dihasilkan. Sebaliknya, dengan menggunakan heatsink, suhu panel turun menjadi 36°C dan efisiensinya

			kisaran tersebut, diharapkan panel dapat beroperasi secara efektif dan efisien.		meningkat dari 12,1% menjadi 13,74%.
2	(Yuwono, 2022).	<i>Karakteristik Daya Panel Surya Polycrystalline 100 WP terhadap Perubahan Temperatur.</i>	Tujuan penelitian ini adalah untuk mendapatkan data mengenai pola karakteristik dan nilai besaran daya dari panel surya jenis polycrystalline dengan kapasitas 100 WP. Penelitian ini bertujuan untuk mengetahui daya maksimal yang dapat dihasilkan oleh panel surya merk SUNASIA 100 WP serta temperatur yang dibutuhkan agar panel tersebut dapat menghasilkan energi listrik secara efektif. Selain itu,	Metode penelitian ini dilakukan melalui beberapa tahapan yang terstruktur untuk memastikan proses berjalan dengan baik. Pertama, peneliti menentukan panel surya jenis polycrystalline dengan kapasitas 100 WP serta spesifikasinya. Selanjutnya, dilakukan rancangan dan instalasi panel surya serta alat ukur yang diperlukan untuk pengumpulan data. Penentuan waktu dan lokasi pengambilan data juga dilakukan agar mendapatkan kondisi yang optimal. Pengambilan data dilakukan untuk mengukur karakteristik daya panel surya dengan	Hasil penelitian menunjukkan bahwa karakteristik daya panel surya jenis polycrystalline dengan kapasitas 100 WP berbanding lurus dengan temperatur, yaitu antara 25°C hingga 39°C. Daya minimal yang dihasilkan adalah 2,7 Watt pada temperatur 25°C, sedangkan daya maksimal mencapai 28,5 Watt pada temperatur 39°C. Panel surya merk SUNASIA jenis polycrystalline 100 WP dapat menghasilkan energi listrik yang efektif ketika suhu di atas 34°C. Selain itu, penelitian ini juga menemukan bahwa waktu yang dibutuhkan oleh panel surya untuk mengisi aki berkapasitas 12V 32Ah, dengan

			<p>penelitian ini juga bertujuan untuk menentukan waktu yang diperlukan oleh panel surya merk SUNASIA 100 WP untuk mengisi aki dengan spesifikasi 12V 32Ah, sehingga penelitian ini dapat memberikan informasi yang berguna untuk pengembangan dan pemanfaatan energi surya di Indonesia.</p>	<p>memperhatikan variasi suhu yang terjadi pada waktu dan kondisi tertentu.</p>	<p>tegangan awal 5,1 Volt hingga mencapai 13,6 Volt, adalah sekitar 8 jam.</p>
3	(Faizin & Arandi, 2018).	<i>Pengaruh Intensitas Cahaya Terhadap Unjuk Kerja Solar Cell Tipe Polycrystalline Silicon Kapasitas 10 Watt.</i>	<p>Penelitian ini bertujuan untuk menentukan bagaimana variasi intensitas cahaya yang diberikan oleh lampu halogen, pada berbagai tingkat daya (300, 500, dan 1000 watt),</p>	<p>Metode penelitian ini dilakukan melalui beberapa tahapan yang sistematis. Pertama, alat uji dirancang untuk mengukur keluaran solar cell, menggunakan peralatan seperti multimeter, luxmeter, dan thermometer</p>	<p>Hasil penelitian menunjukkan bahwa terdapat hubungan yang signifikan antara intensitas cahaya dan suhu permukaan panel dengan kinerja solar cell tipe polycrystalline silicon.</p>

			mempengaruhi keluaran tegangan, arus, daya, dan efisiensi dari solar cell.	untuk memantau arus, tegangan, intensitas cahaya, dan suhu permukaan solar cell. Selanjutnya, alat dan bahan disiapkan, termasuk solar cell dan lampu halogen dengan daya 300, 500, dan 1000 watt, serta berbagai peralatan pengukur yang diperlukan.	
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Gambar L-. 1 Pemotongan besi hollow



Gambar L-. 2 Proses pengalasan kerangka instalasi



Gambar L-. 3 Instalasi kerangka solar cell



Gambar L-. 4 Pemasangan solar cell tipe polycrystalline



Gambar L-. 5 Pengambilan data Voc dan Isc



Gambar L-. 6 Pemasangan lampu hologen



Gambar L-.7 Pengambilan data Vmp dan Imp



Gambar L-.8 Proses pengambilan data intensitas cahaya



Gambar L-.9 Instalasi solar cell tampak depan



Gambar L-.10 Instalasi solar cell tampak belakang