Izveštaj sa laboratorijske vežbe
Trofazni ispravljač

sample

3. juni 2013
00:07

# Sadržaj

1 L filter

Tabela 1: L filter

| I_{OUT} [A]	1.04	2.10	3.19	4.20	5.28
V_{OUT} [V]	54.55	52.04	50.26	47.99	45.60
P_1 [W]	19.74	38.45	56.30	72.12	86.37
P_2 [W]	19.71	37.57	56.06	71.76	86.35
P_3 [W]	19.45	38.26	55.65	70.83	84.86
S_1 [VA]	20.76	40.50	59.26	75.95	91.07
S_2 [VA]	20.74	39.62	59.01	75.61	91.01
S_3 [VA]	20.47	40.22	58.51	74.53	89.28
PF_1	0.9512	0.9495	0.9499	0.9496	0.9484
PF_2	0.9503	0.9483	0.9501	0.9490	0.9488
PF_3	0.9502	0.9513	0.9510	0.9504	0.9505
DPF_1	0.9998	0.9996	0.9997	0.9995	0.9991
DPF_2	0.9993	0.9995	0.9995	0.9995	0.9990
DPF_3	0.9999	0.9999	0.9993	0.9994	0.9996
P_{IN} [W]	58.90	114.28	168.01	214.71	257.58
P_{OUT} [W]	58.90	114.28	168.01	214.71	257.58
η [%]	96.26	95.51	95.53	93.83	93.48
$THD(i_1)$ [%]	29.64	28.64	27.46	26.64	25.76
$THD(i_2)$ [%]	29.60	28.40	27.48	26.68	25.83
$THD(i_3)$ [%]	29.78	28.24	27.37	26.38	25.21
$THD(v_1)$ [%]	3.75	4.97	5.91	6.48	7.53
$THD(v_2)$ [%]	3.92	5.47	5.54	6.57	7.47
$THD(v_3)$ [%]	3.86	4.71	5.53	6.70	7.50

$$E_T = 56.64 \,\text{V}, \ R_T = 2.07 \,\Omega$$
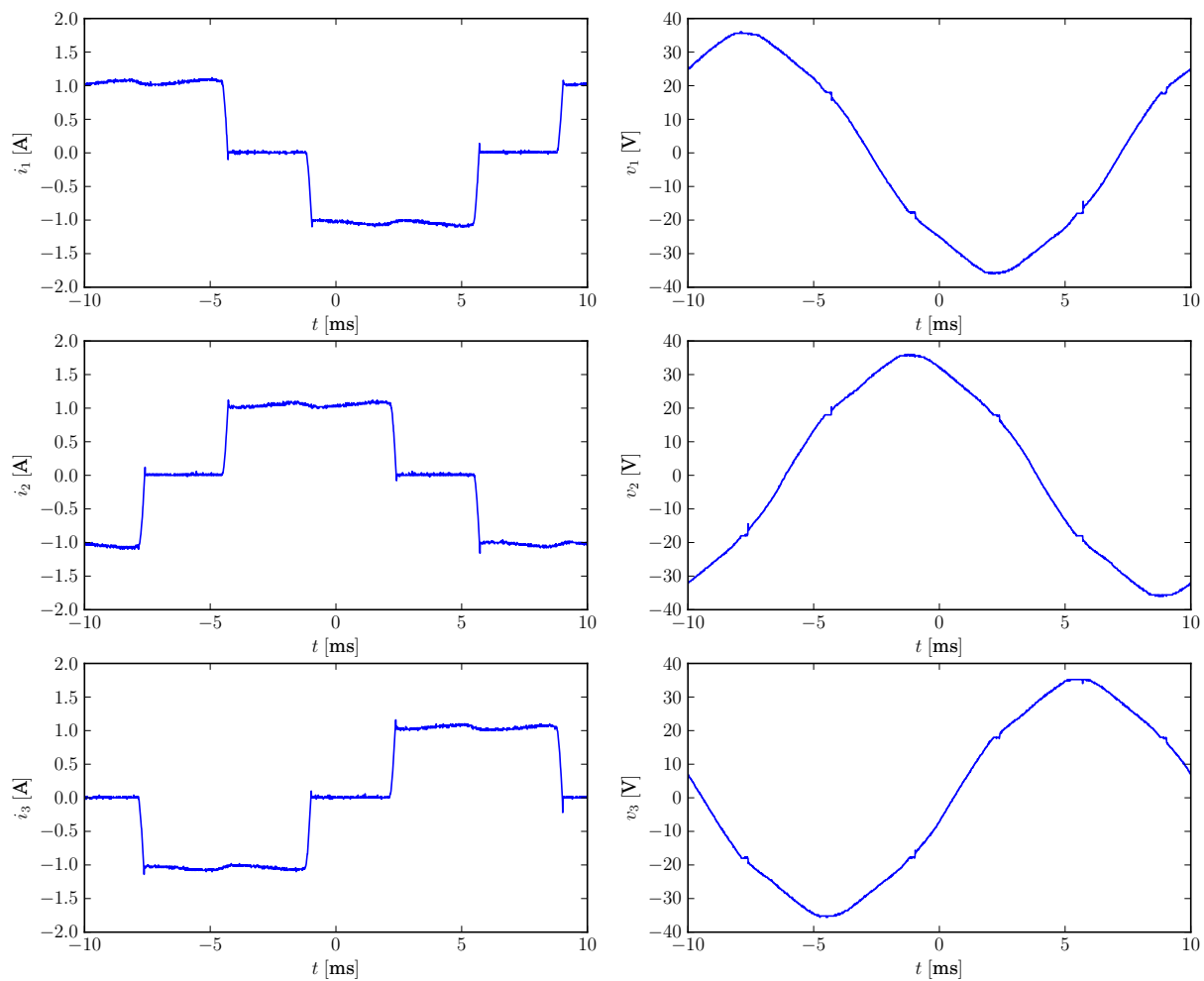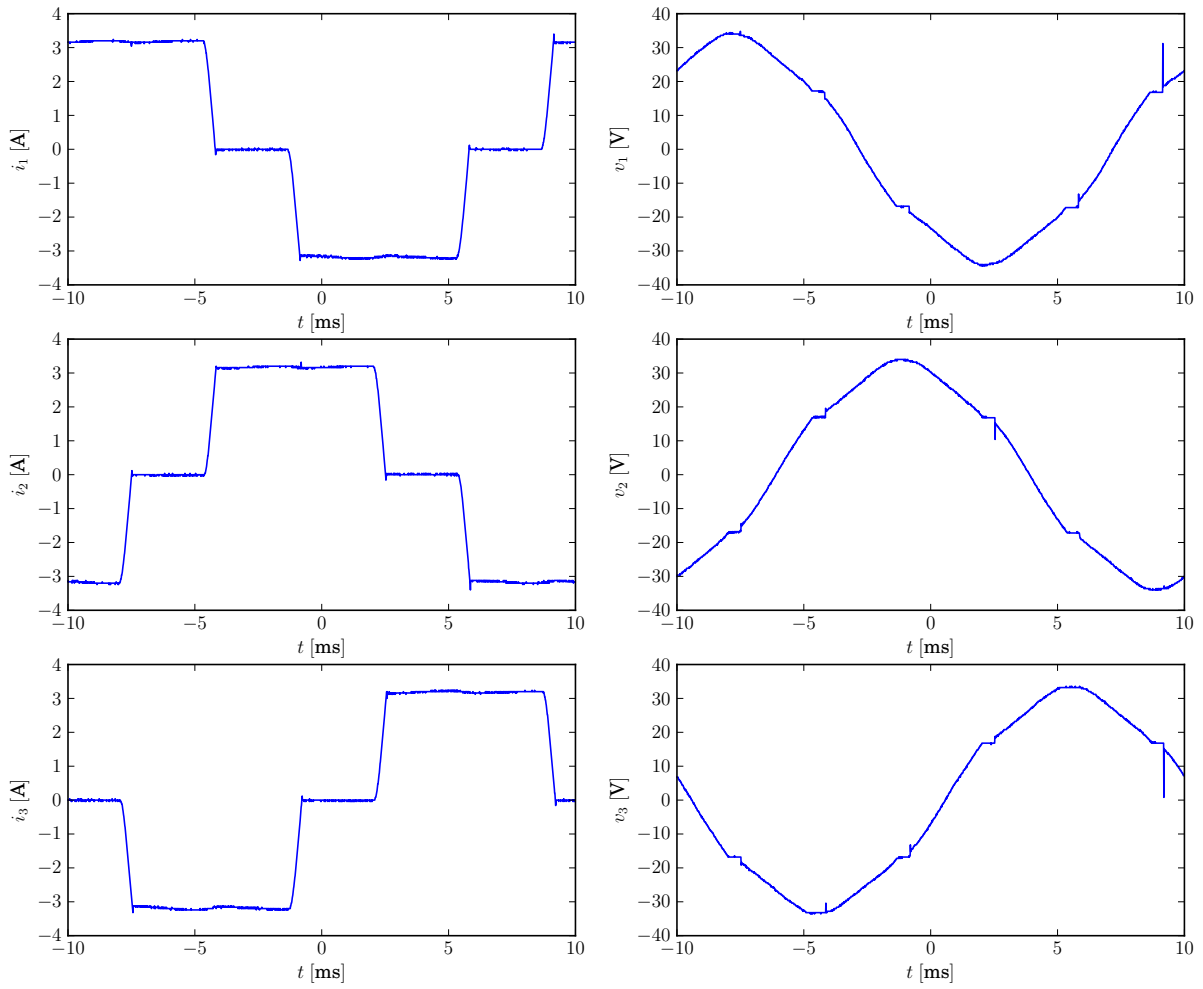
Slika 1: L filter, $I_{OUT} = 1\,\mathrm{A}$
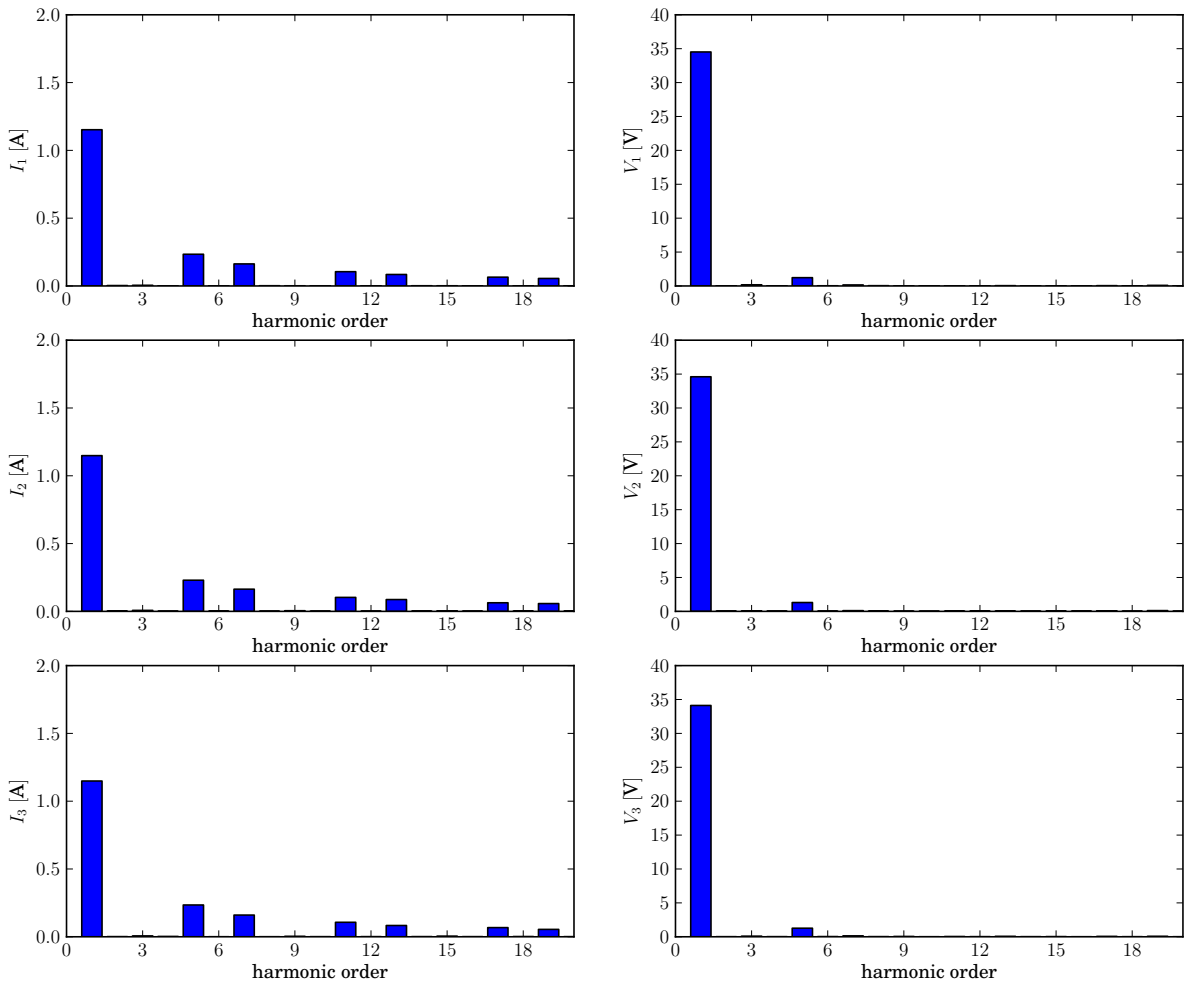
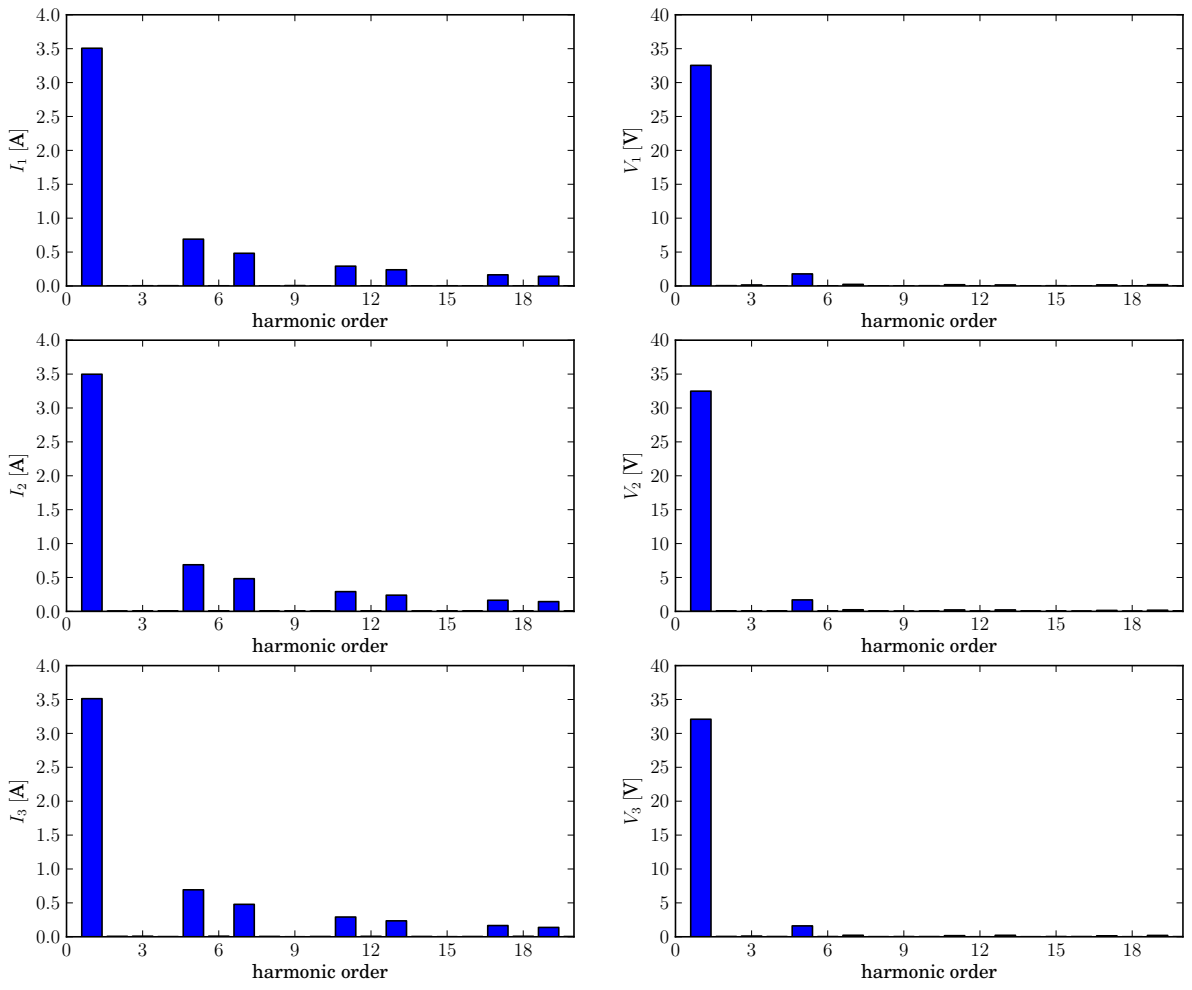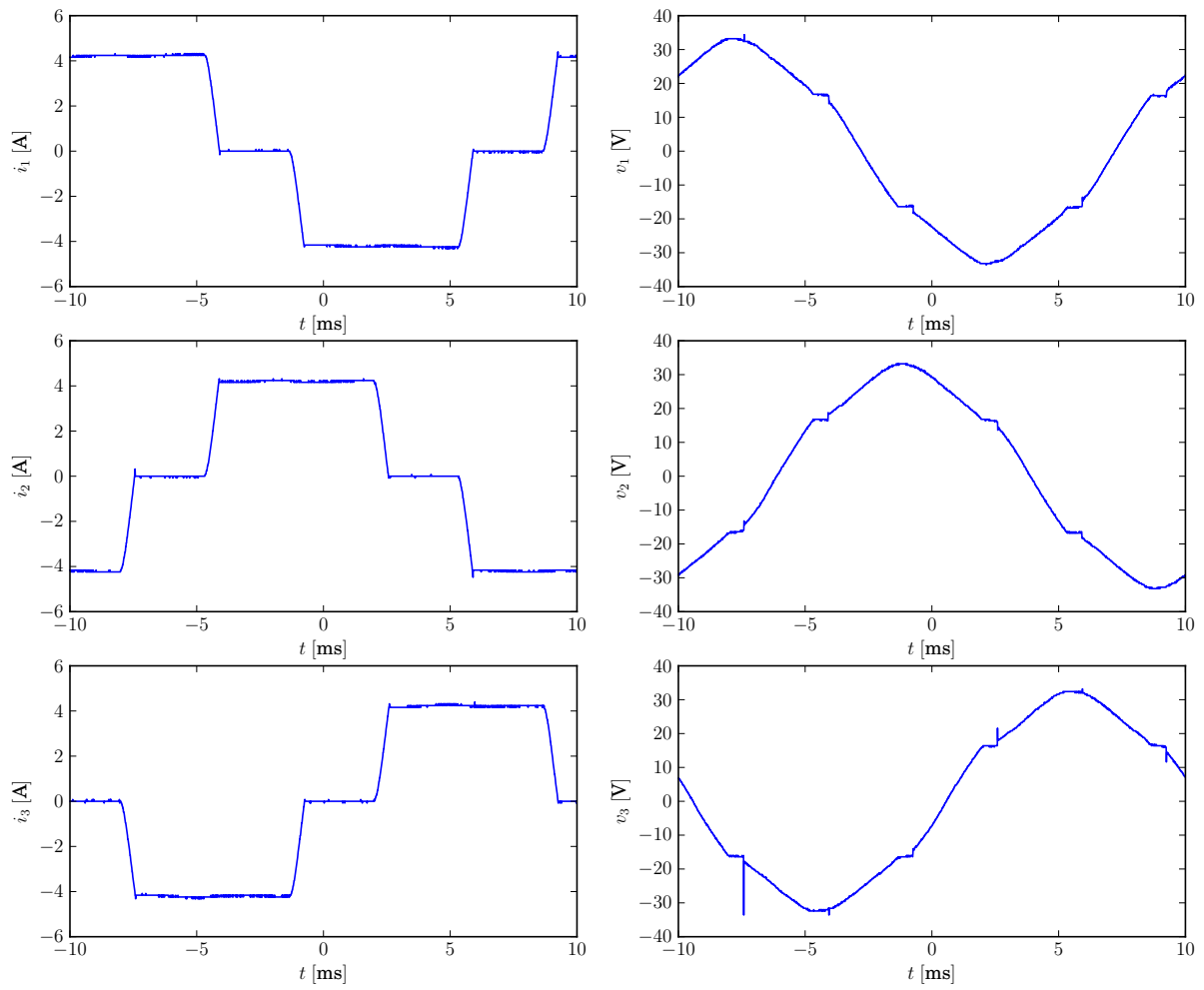Slika 2: L filter, $I_{OUT} = 1\,\text{A}$
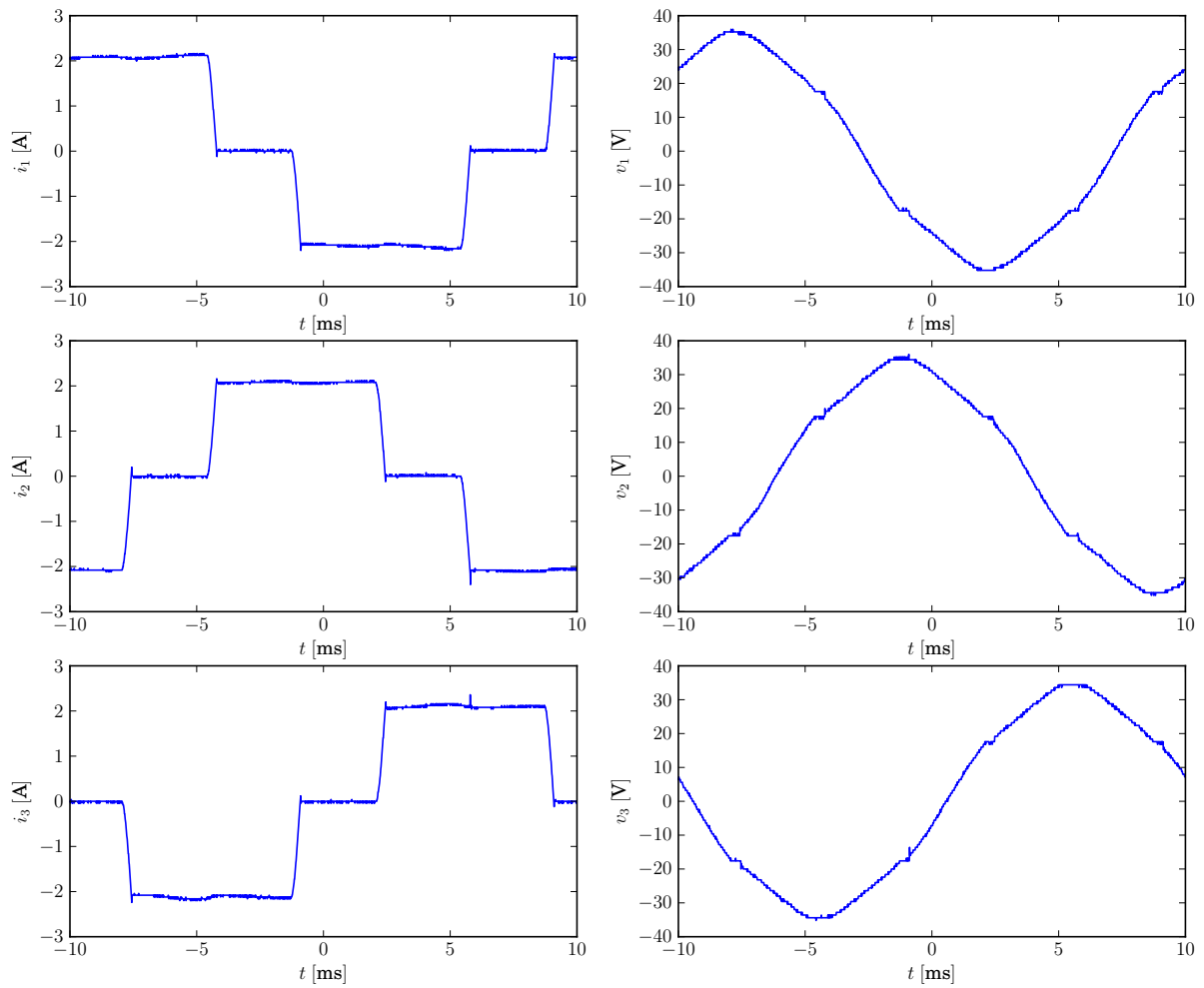
Slika 3: L filter, $I_{OUT} = 2\,\text{A}$
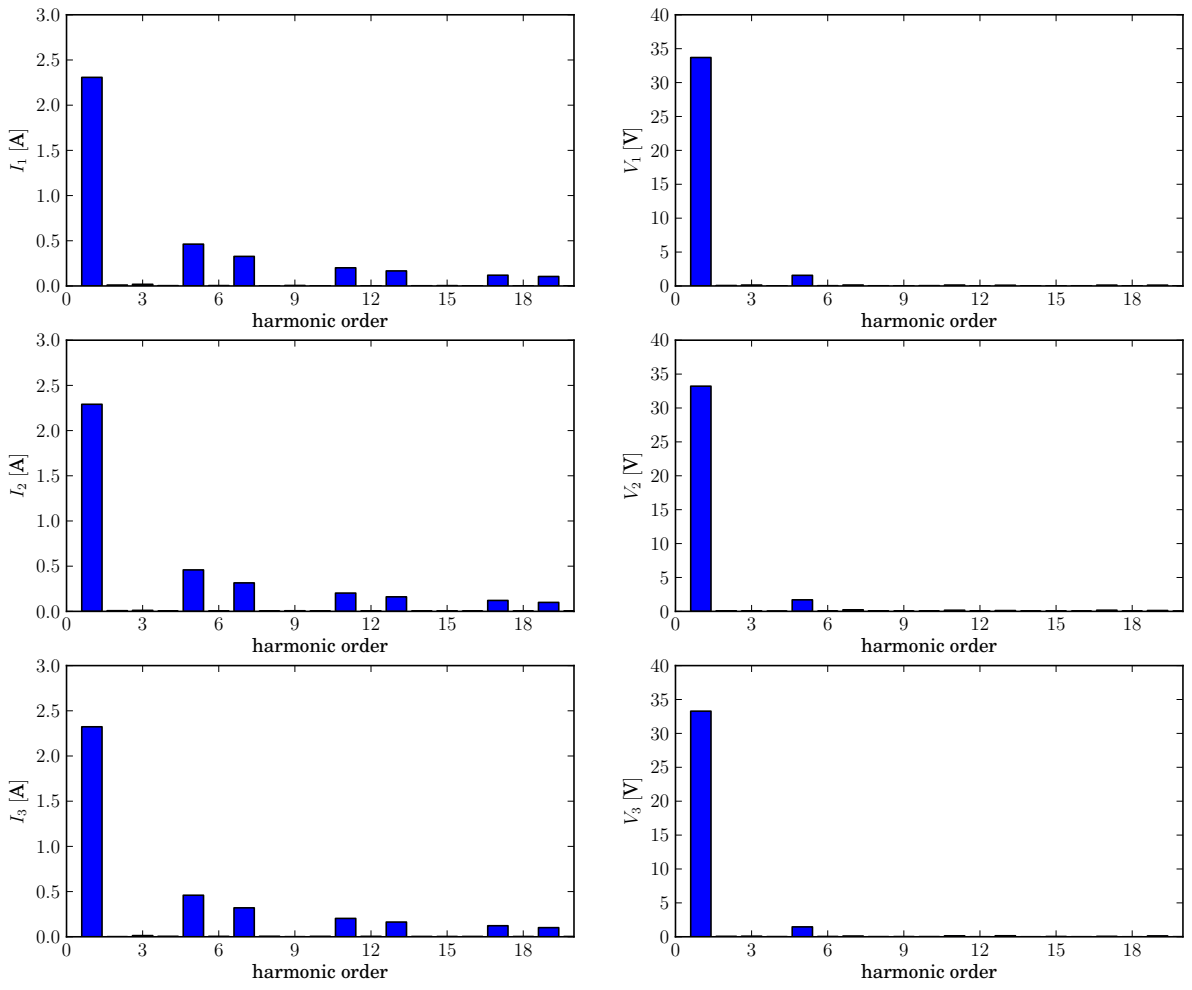
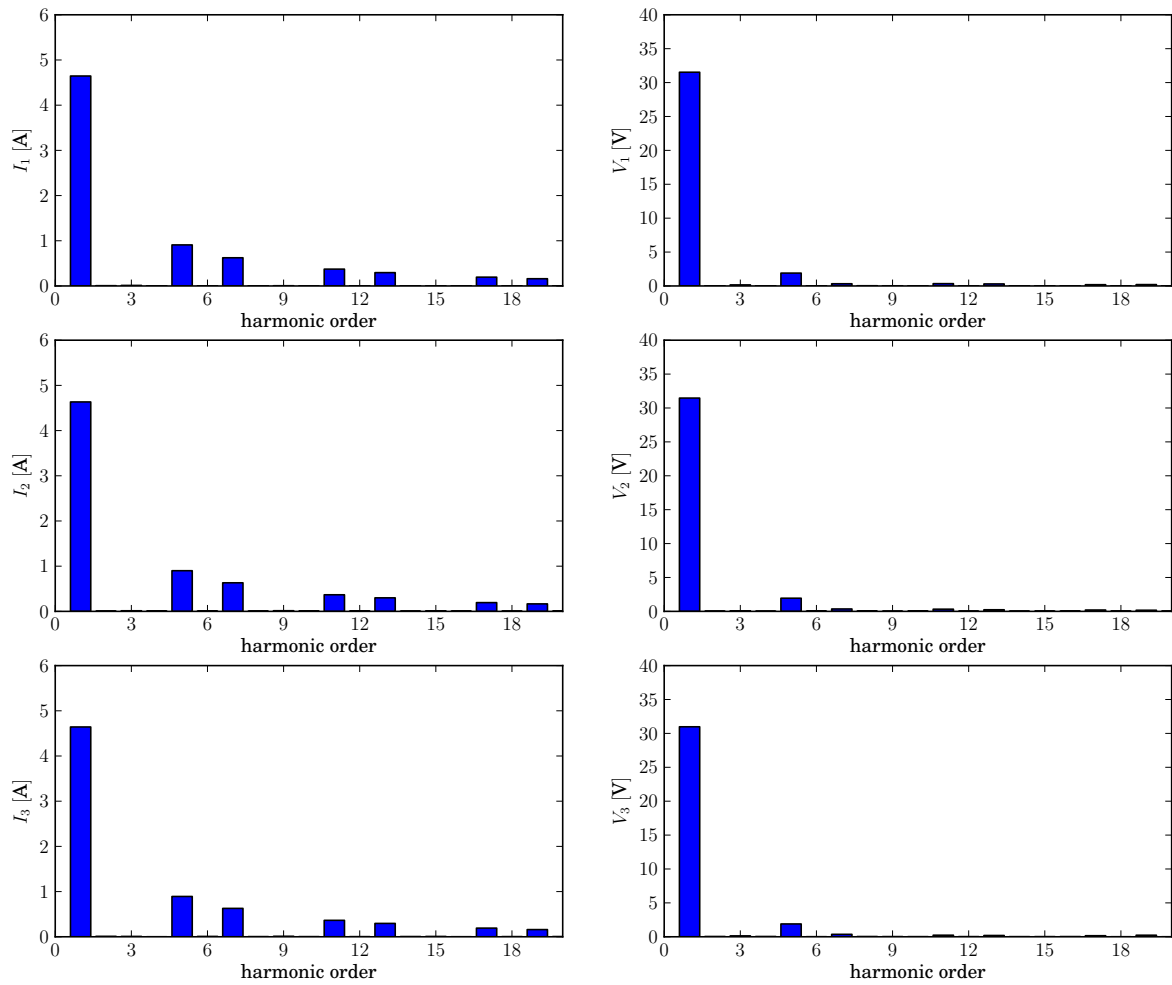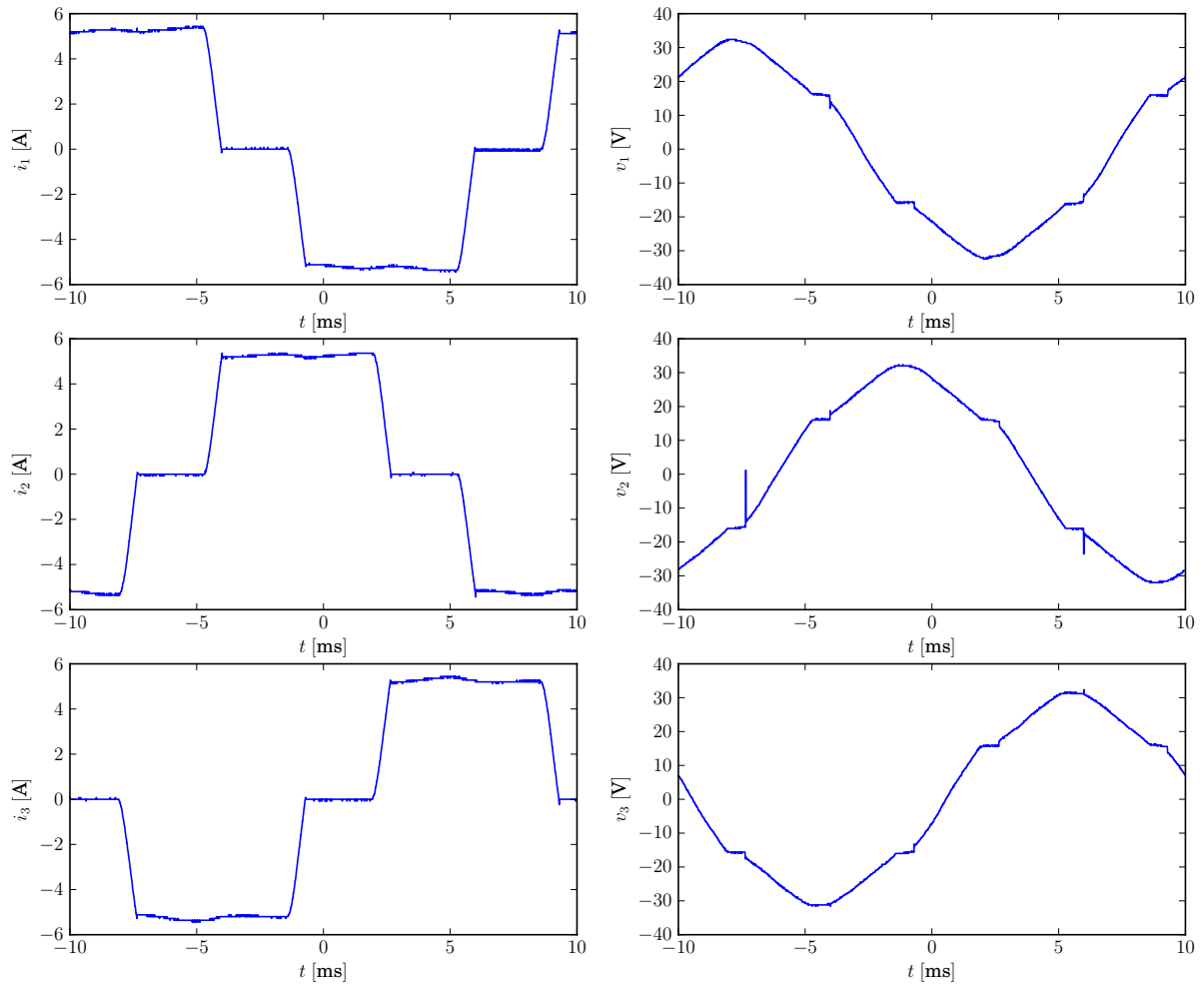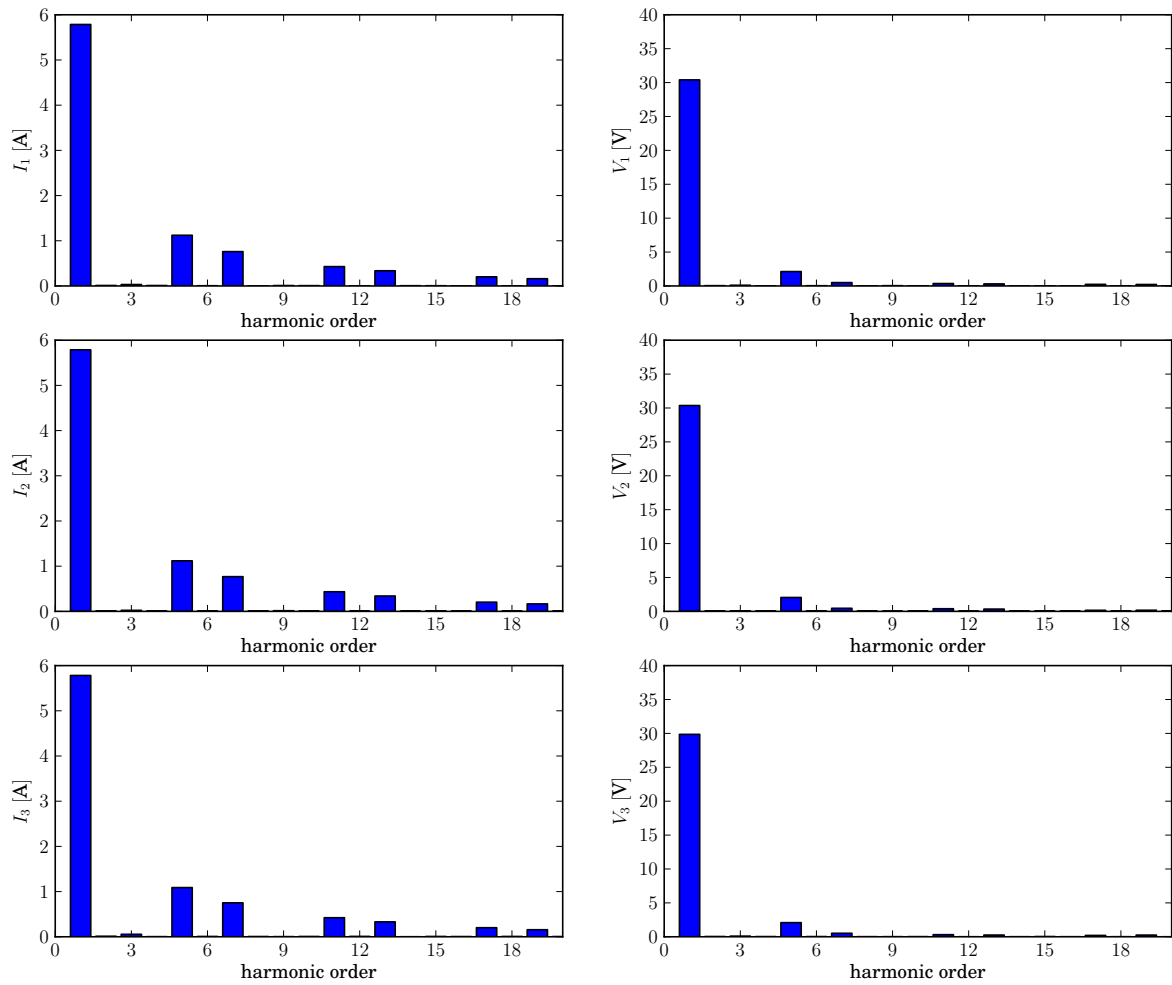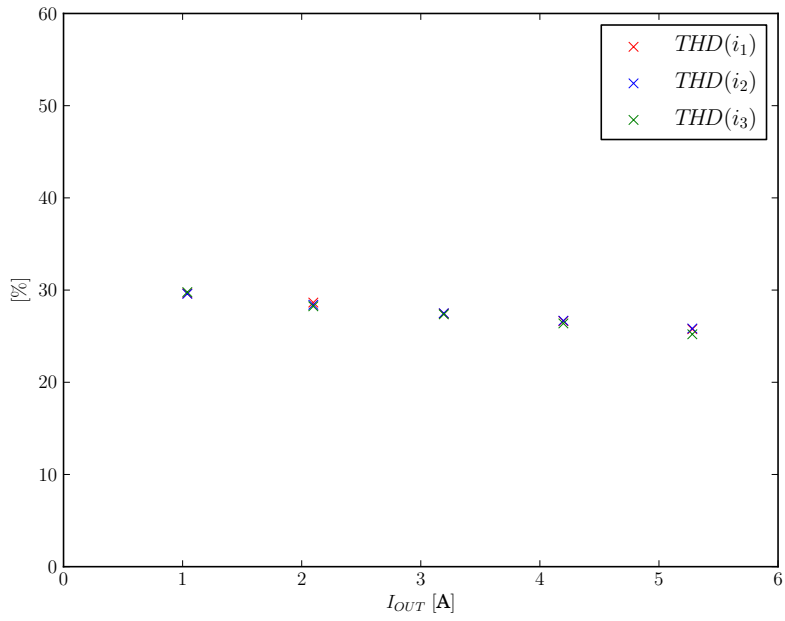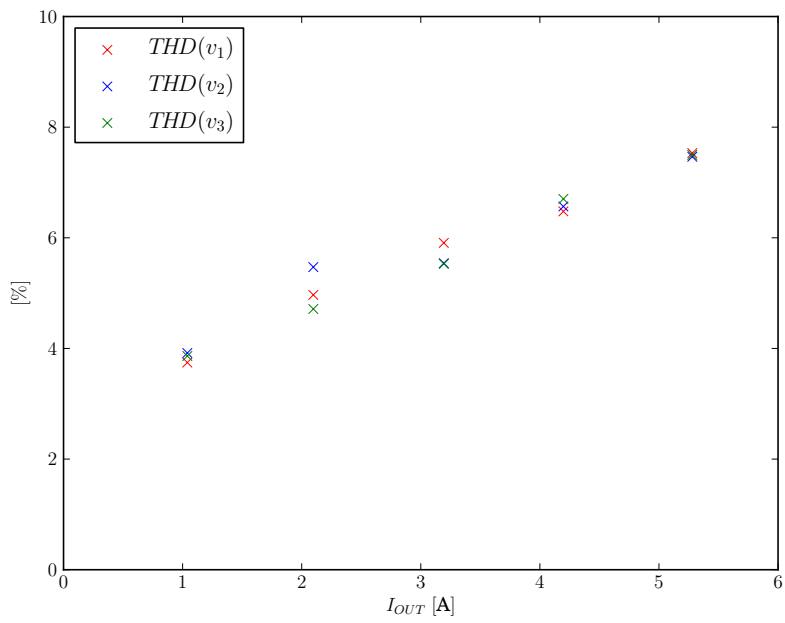Slika 4: L filter, $I_{OUT} = 2\,\mathrm{A}$

Slika 5: L filter, $I_{OUT} = 3\,\mathrm{A}$

Slika 6: L filter, $I_{OUT} = 3\,\mathrm{A}$

Slika 7: L filter, $I_{OUT} = 4\,\text{A}$

Slika 8: L filter, $I_{OUT} = 4\,\mathrm{A}$

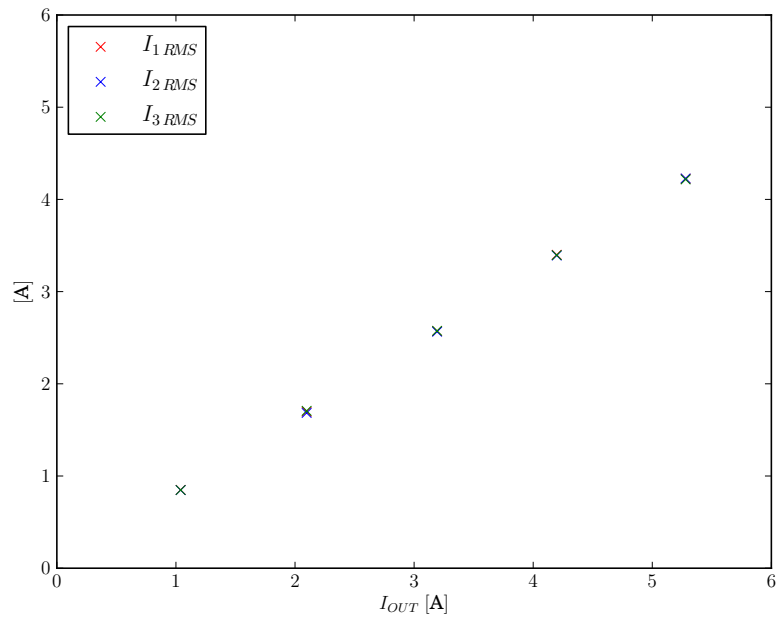Slika 9: L filter, $I_{OUT} = 5\,\mathrm{A}$

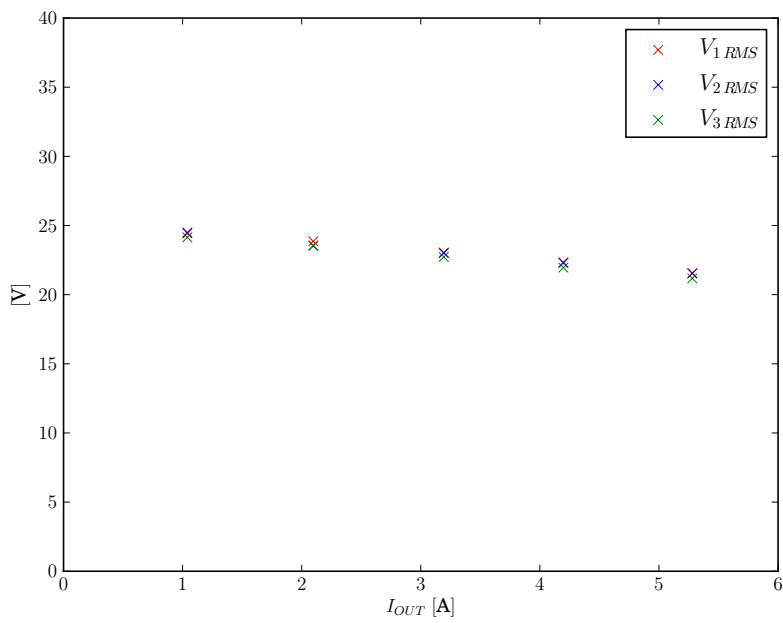Slika 10: L filter, $I_{OUT} = 5\,\mathrm{A}$
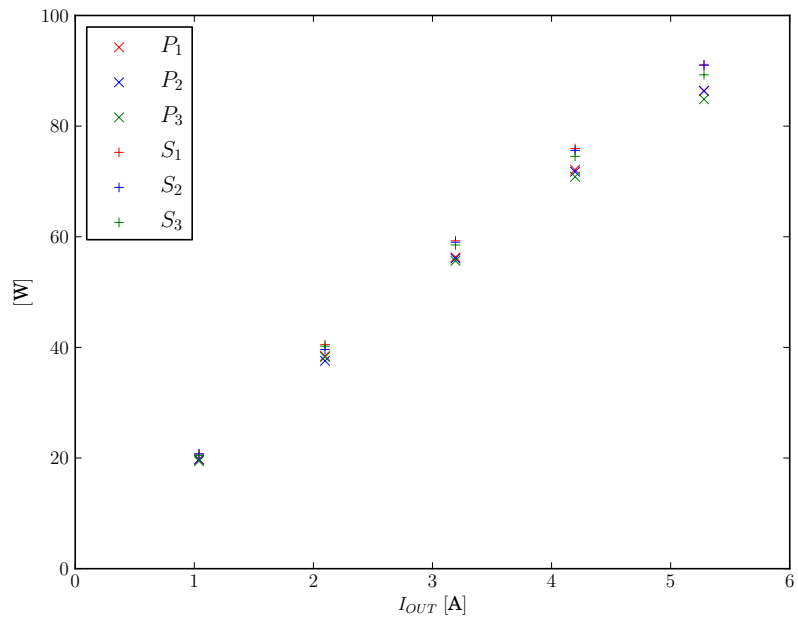
Slika 11: L filter, $THD(i_k)(I_{OUT})$

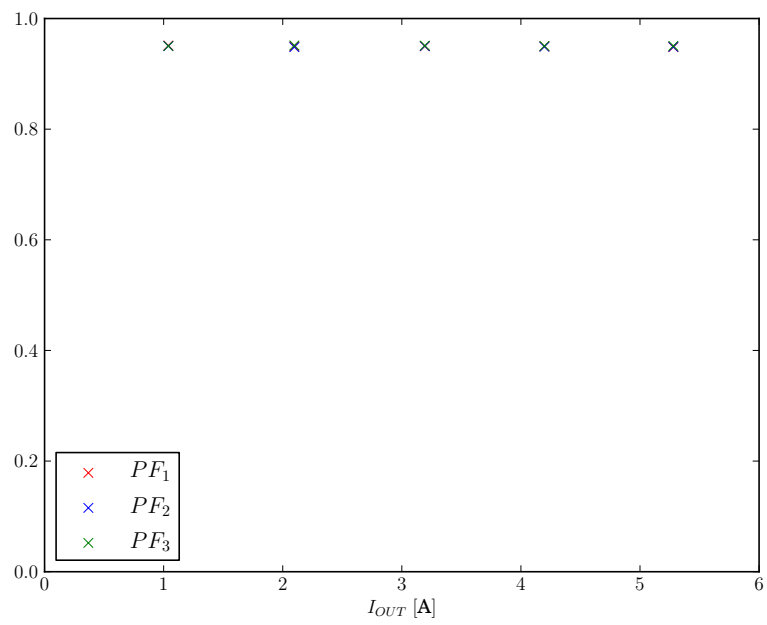Slika 12: L filter, $THD(v_k)(I_{OUT})$
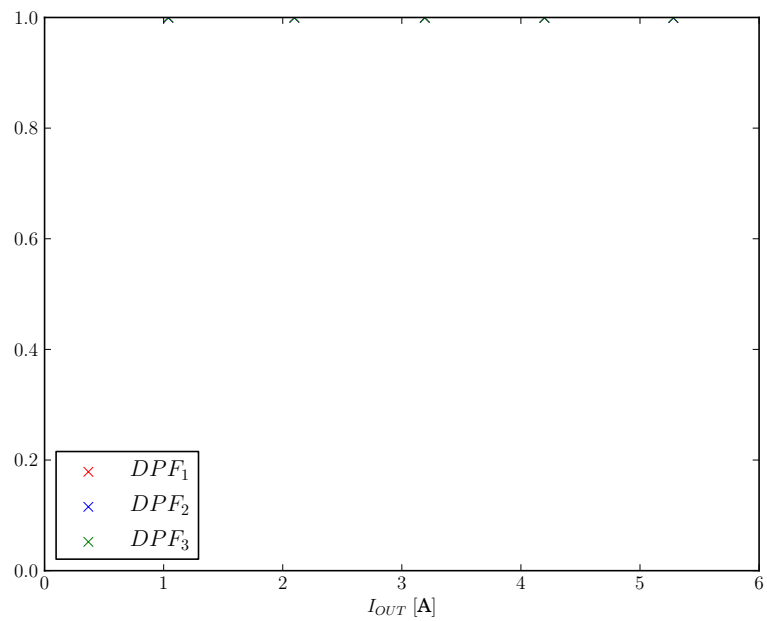
Slika 13: L filter, $I_{k,RMS}(I_{OUT})$

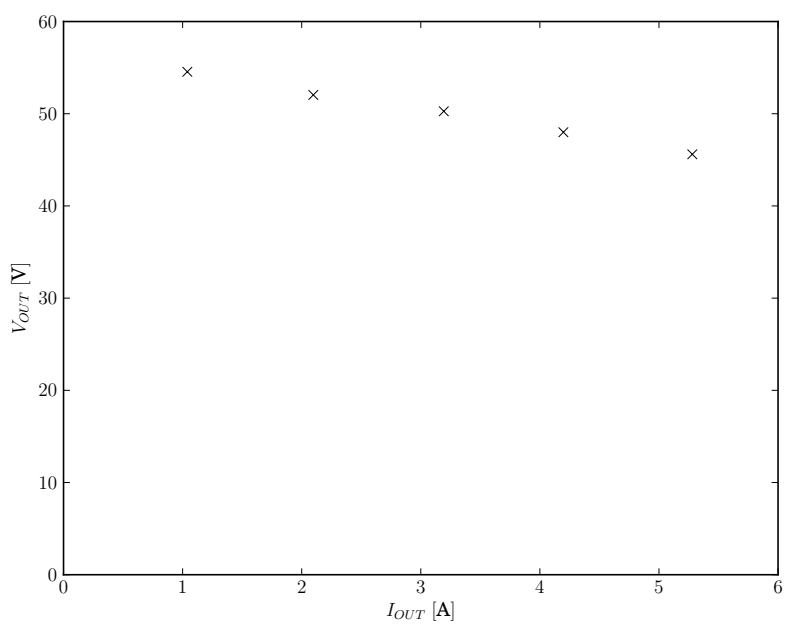Slika 14: L filter, $V_{k,RMS}(I_{OUT})$

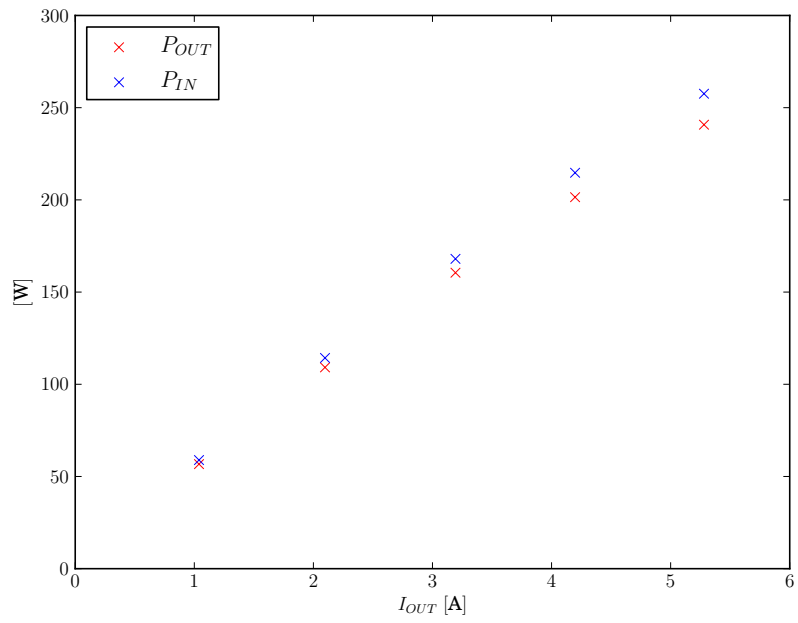Slika 15: L filter, $P_k(I_{OUT})$, $S_k(I_{OUT})$
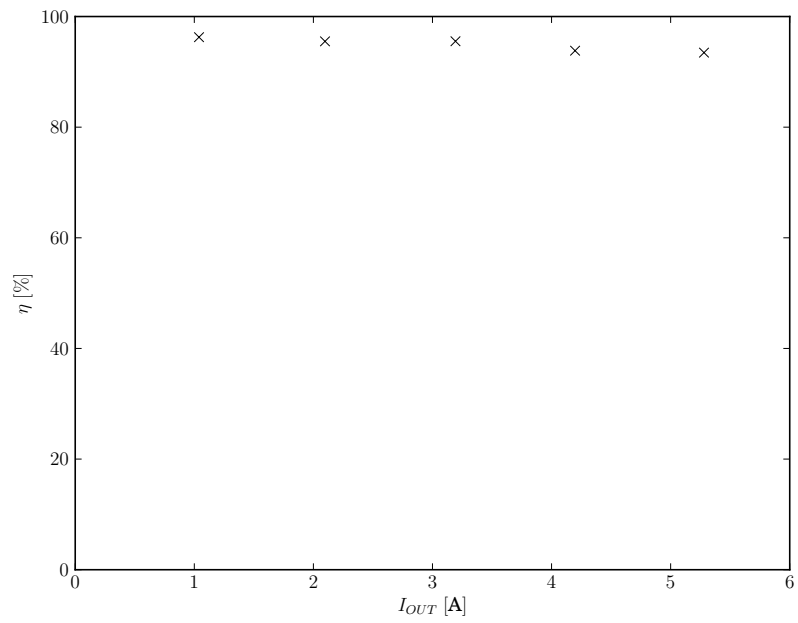

Slika 16: L filter, $PF_k(I_{OUT})$

Slika 17: L filter, $PF_k(I_{OUT})$

Slika 18: L filter, $V_{OUT}(I_{OUT})$

Slika 19: L filter, $P(I_{OUT})$

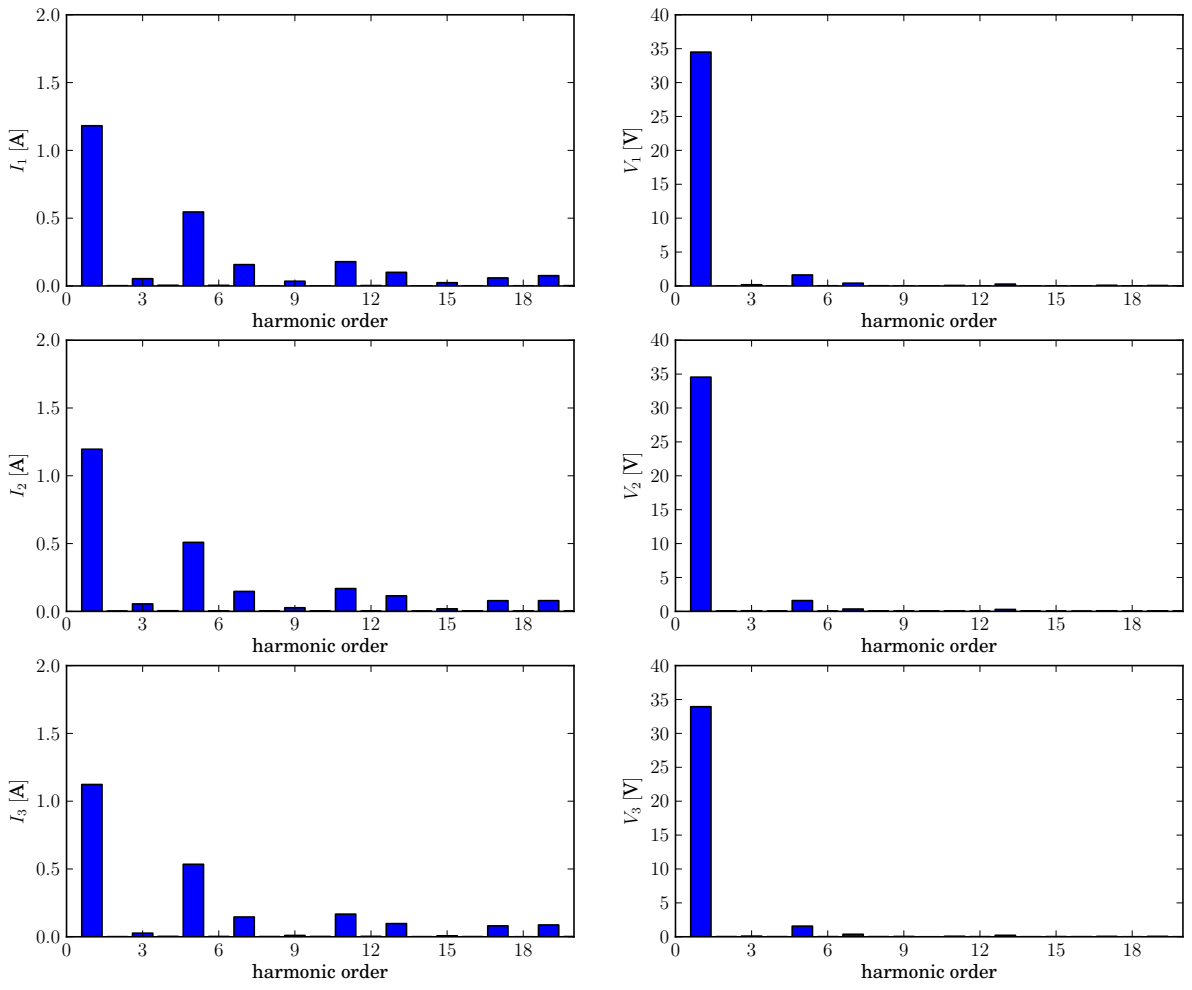Slika 20: L filter, $\eta(I_{OUT})$

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2 C filter

Tabela 2: C filter

| I_{OUT} [A]	1.04	2.11	3.16	4.24	5.28
V_{OUT} [V]	55.08	52.85	50.89	48.80	47.10
P_1 [W]	19.91	39.41	56.16	72.44	87.44
P_2 [W]	20.16	38.99	57.07	69.42	84.98
P_3 [W]	18.61	37.38	54.32	70.22	85.49
S_1 [VA]	23.04	42.89	60.32	77.41	92.94
S_2 [VA]	23.03	42.63	61.32	74.15	90.46
S_3 [VA]	21.66	41.04	58.83	75.31	91.15
PF_1	0.8641	0.9190	0.9311	0.9358	0.9408
PF_2	0.8754	0.9146	0.9306	0.9362	0.9395
PF_3	0.8595	0.9110	0.9234	0.9324	0.9379
DPF_1	1.0000	0.9975	0.9999	0.9995	0.9996
DPF_2	0.9971	0.9981	0.9989	0.9992	0.9986
DPF_3	0.9993	1.0000	0.9995	0.9997	0.9997
P_{IN} [W]	58.68	115.79	167.56	212.08	257.91
P_{OUT} [W]	58.68	115.79	167.56	212.08	257.91
η [%]	98.06	96.26	95.86	97.64	96.50
$THD(i_1)$ [%]	52.36	36.37	32.48	30.13	27.59
$THD(i_2)$ [%]	48.99	37.67	32.43	29.18	27.41
$THD(i_3)$ [%]	53.61	39.18	34.47	30.97	28.41
$THD(v_1)$ [%]	5.04	5.72	6.50	7.24	8.08
$THD(v_2)$ [%]	4.88	5.83	6.38	7.77	8.37
$THD(v_3)$ [%]	4.94	5.86	6.51	7.36	8.14

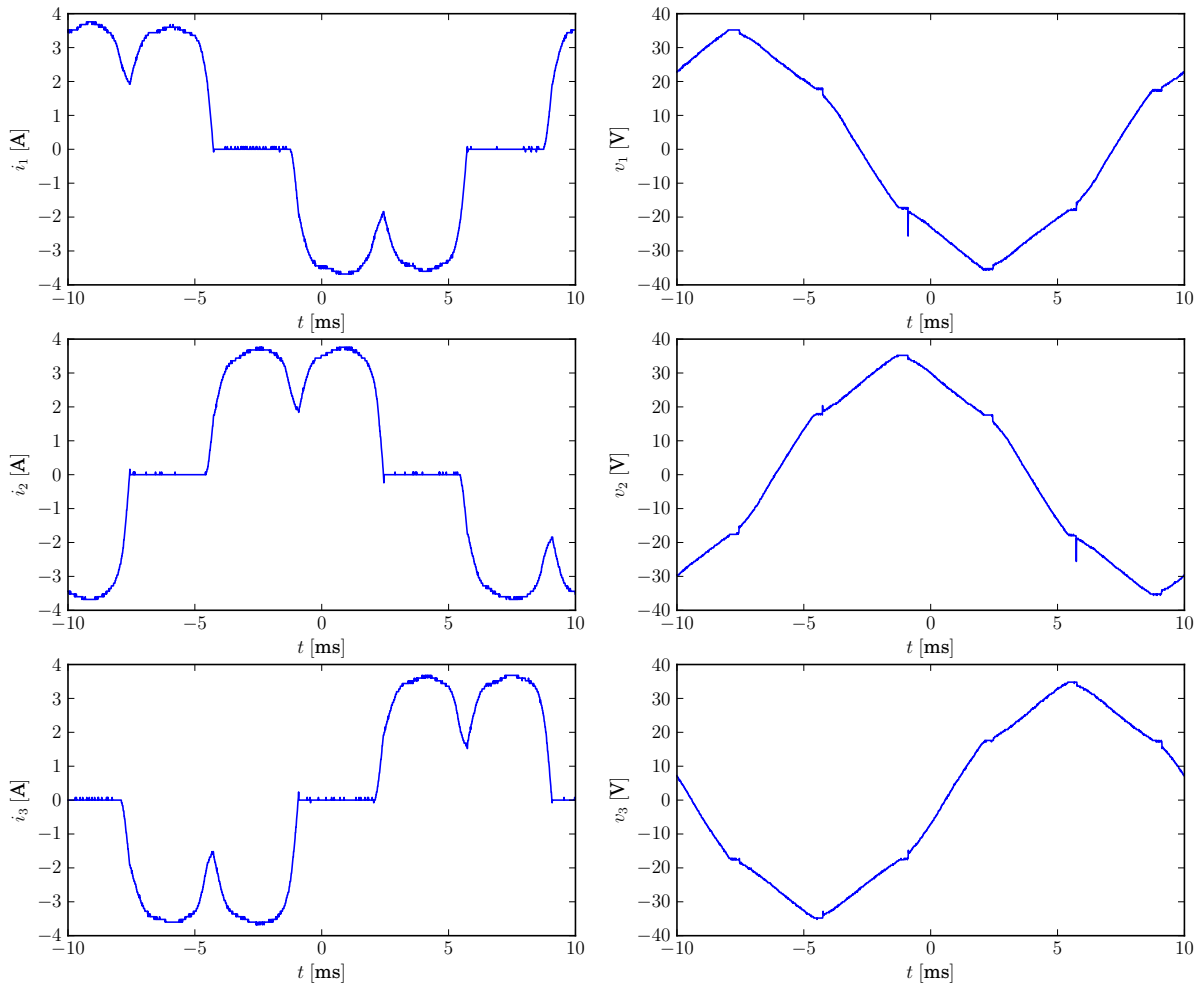$E_T = 56.92\,\text{V}$, $R_T = 1.89\,\Omega$
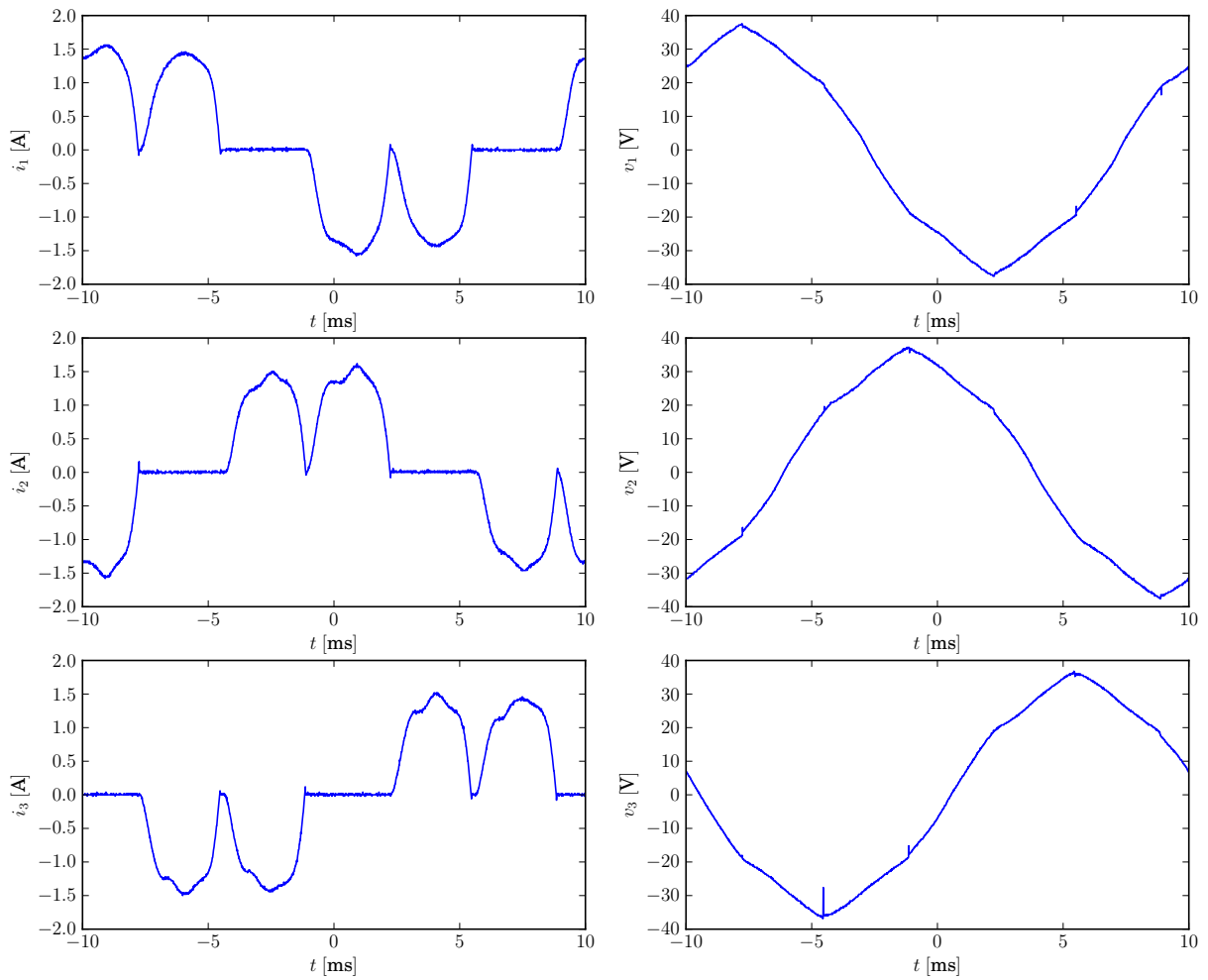
Slika 21: C filter, $I_{OUT} = 1\,\mathrm{A}$

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Slika 22: C filter, $I_{OUT} = 1\,\mathrm{A}$
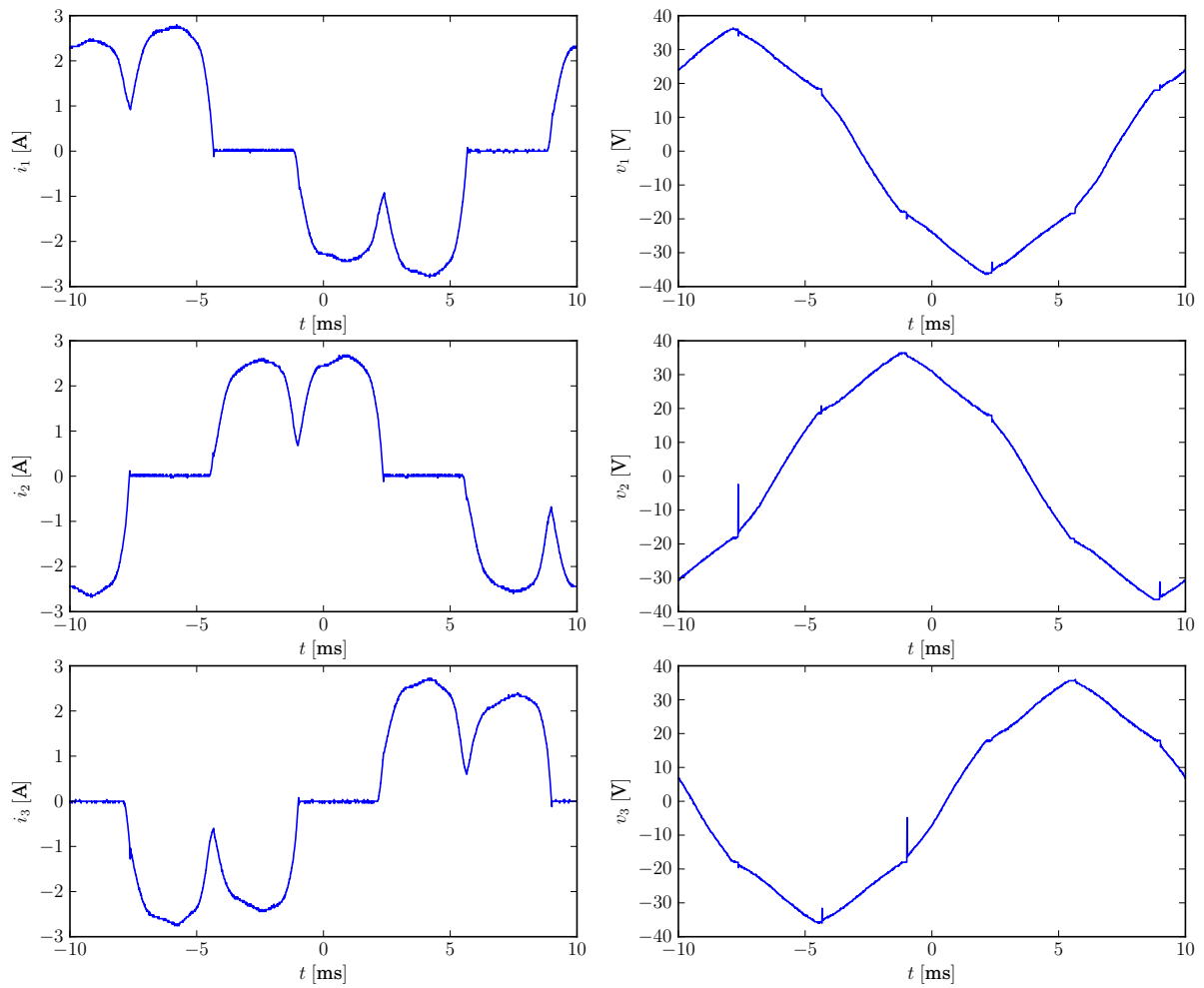
Slika 23: C filter, $I_{OUT} = 2\,\mathrm{A}$
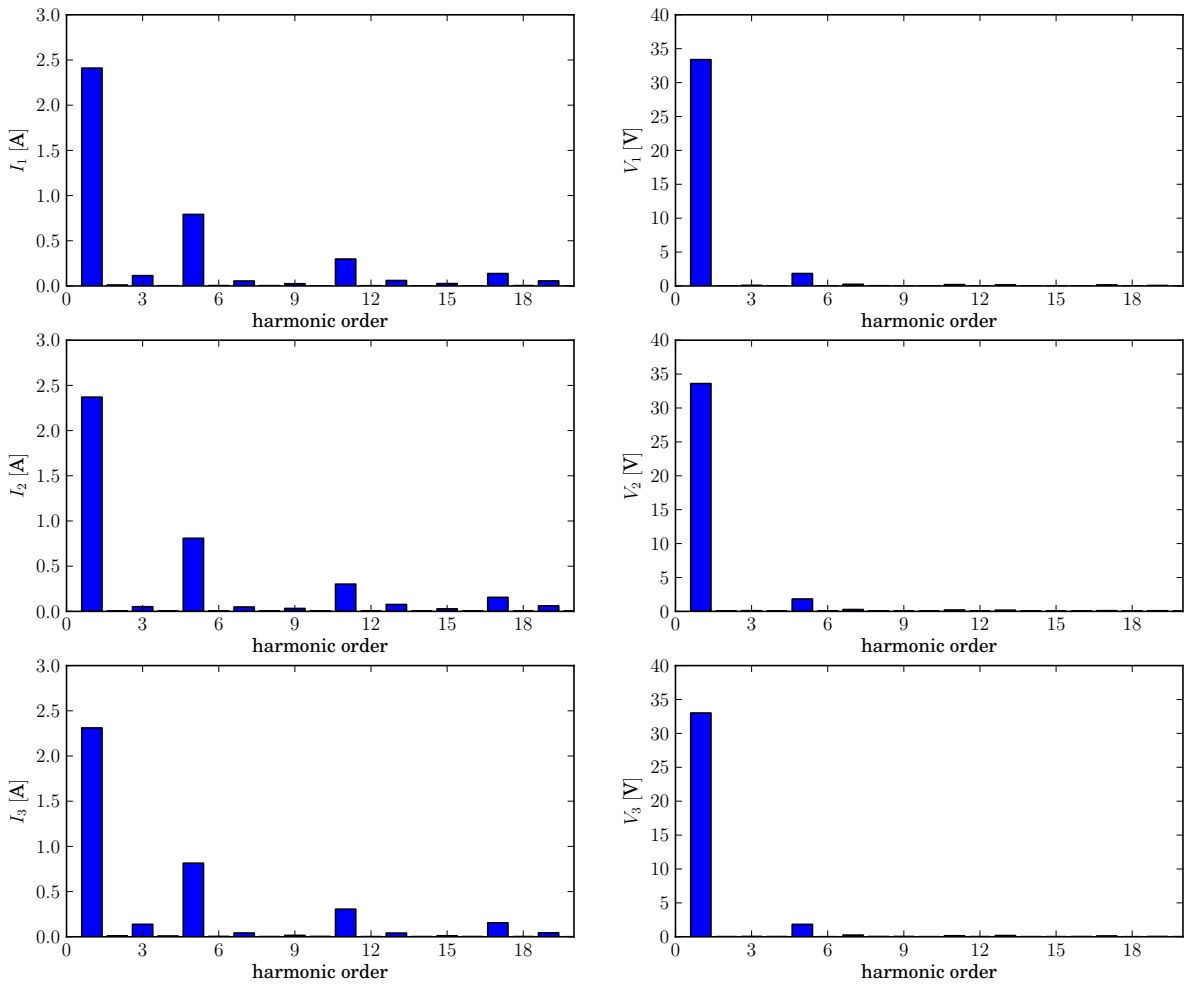
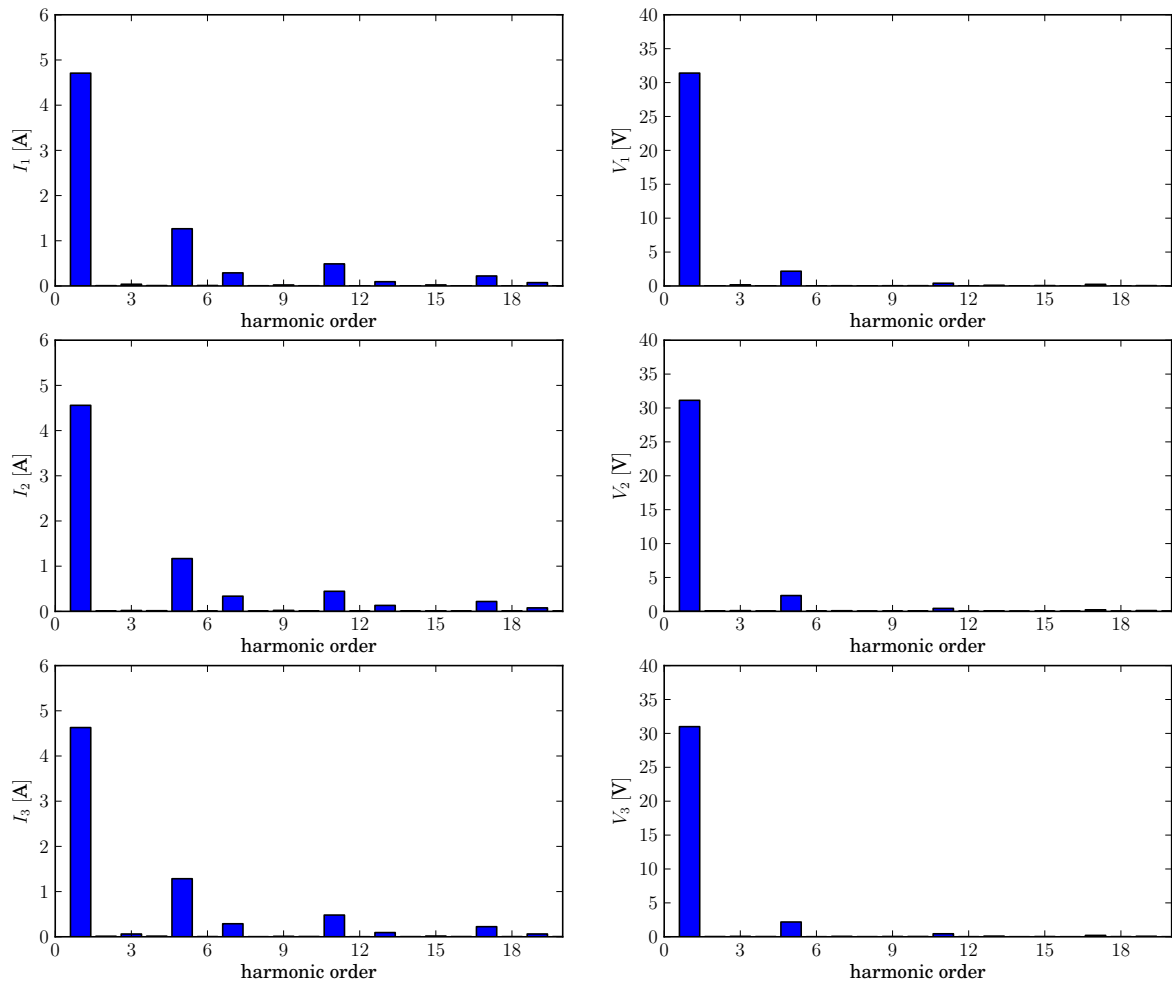Slika 24: C filter, $I_{OUT} = 2\,\mathrm{A}$

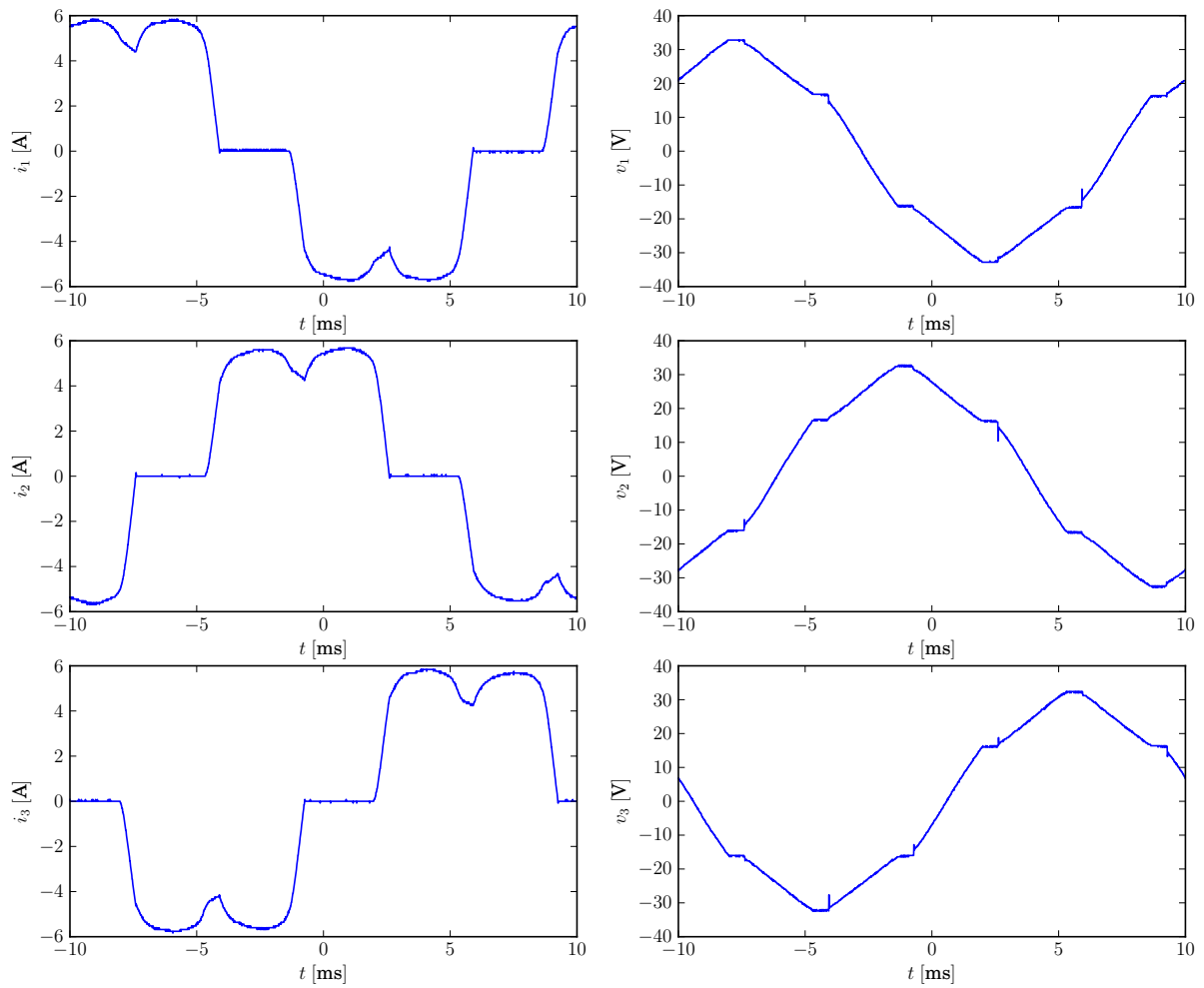Slika 25: C filter, $I_{OUT} = 3\,\mathrm{A}$
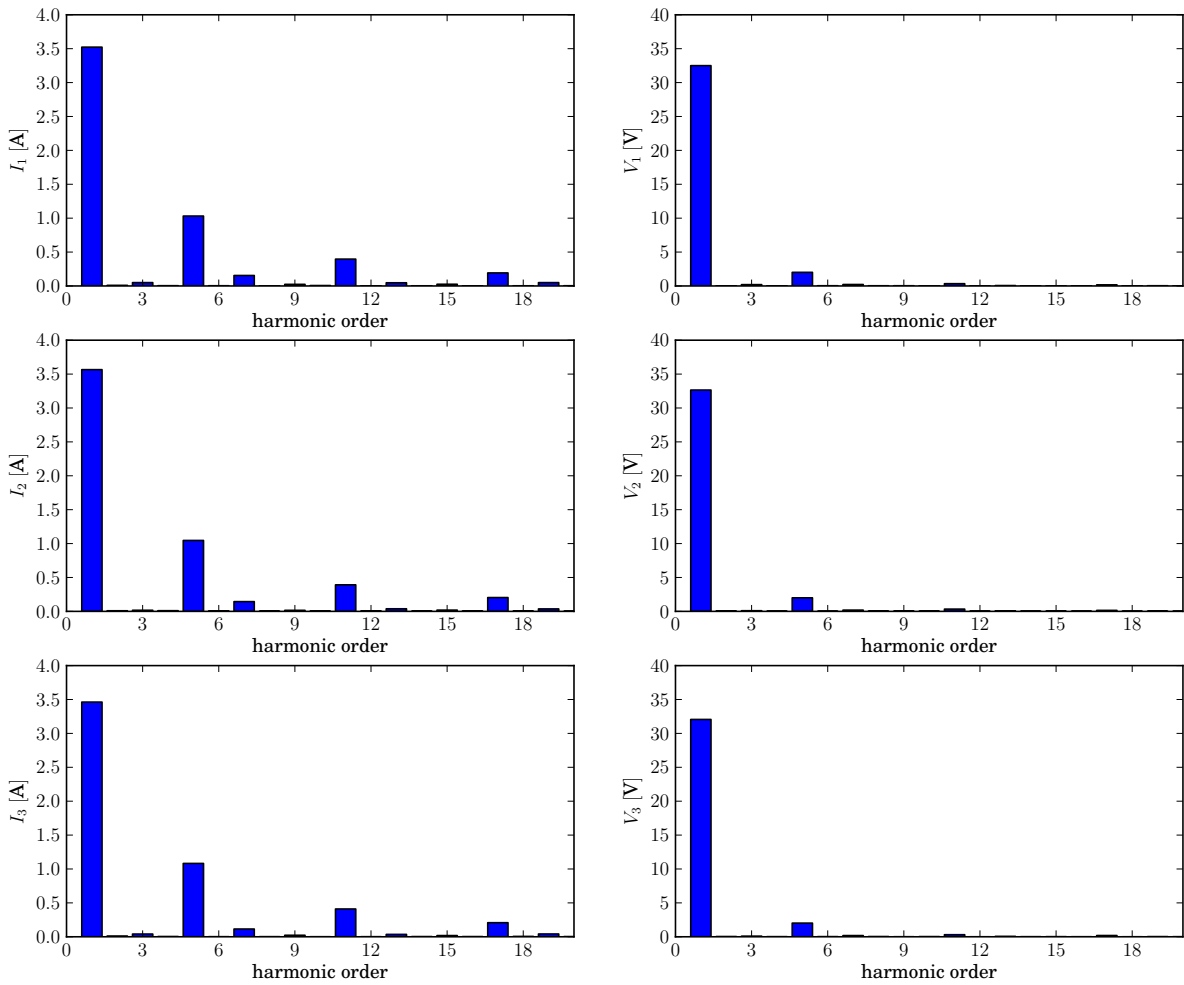
Slika 26: C filter, $I_{OUT} = 3\,\text{A}$
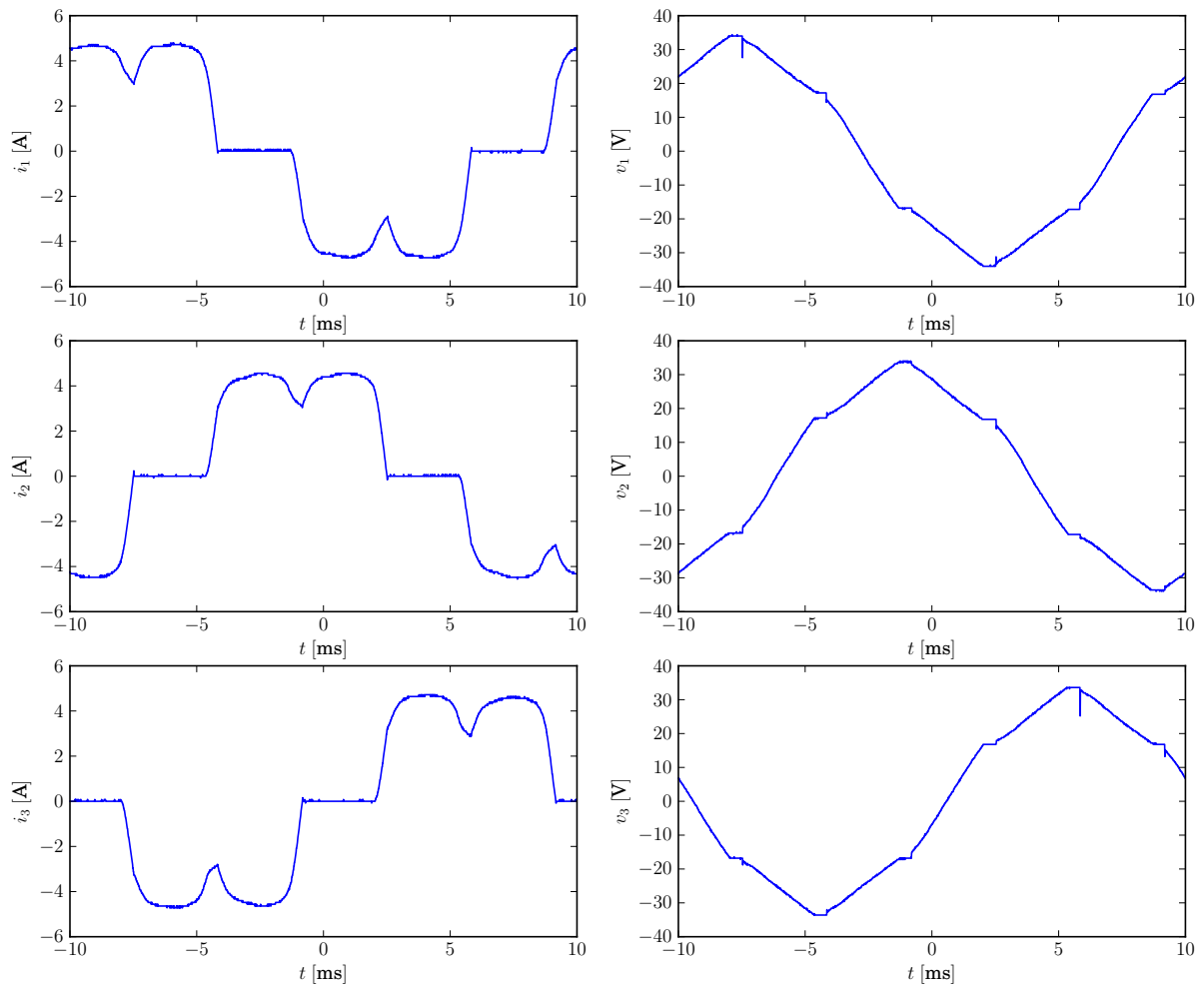
Slika 27: C filter, $I_{OUT} = 4\,\mathrm{A}$

Slika 28: C filter, $I_{OUT} = 4\,\mathrm{A}$
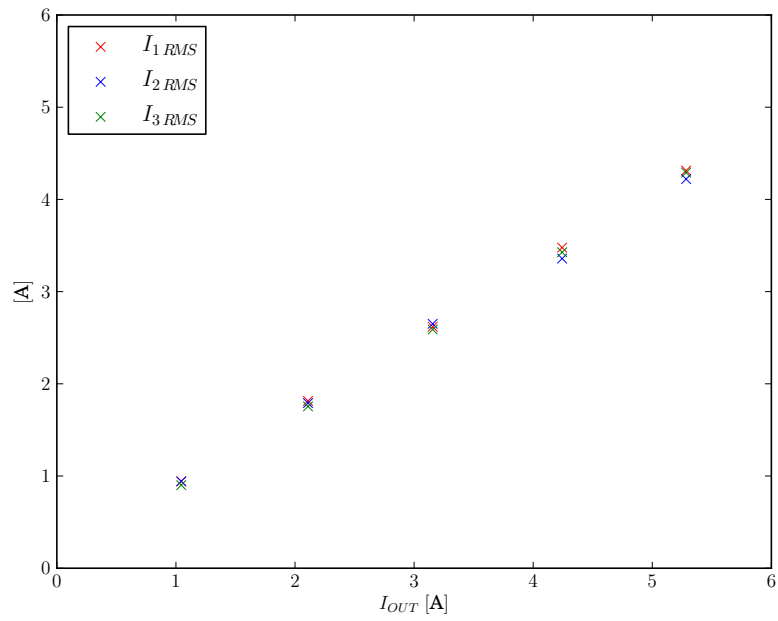
Slika 29: C filter, $I_{OUT} = 5\,\mathrm{A}$
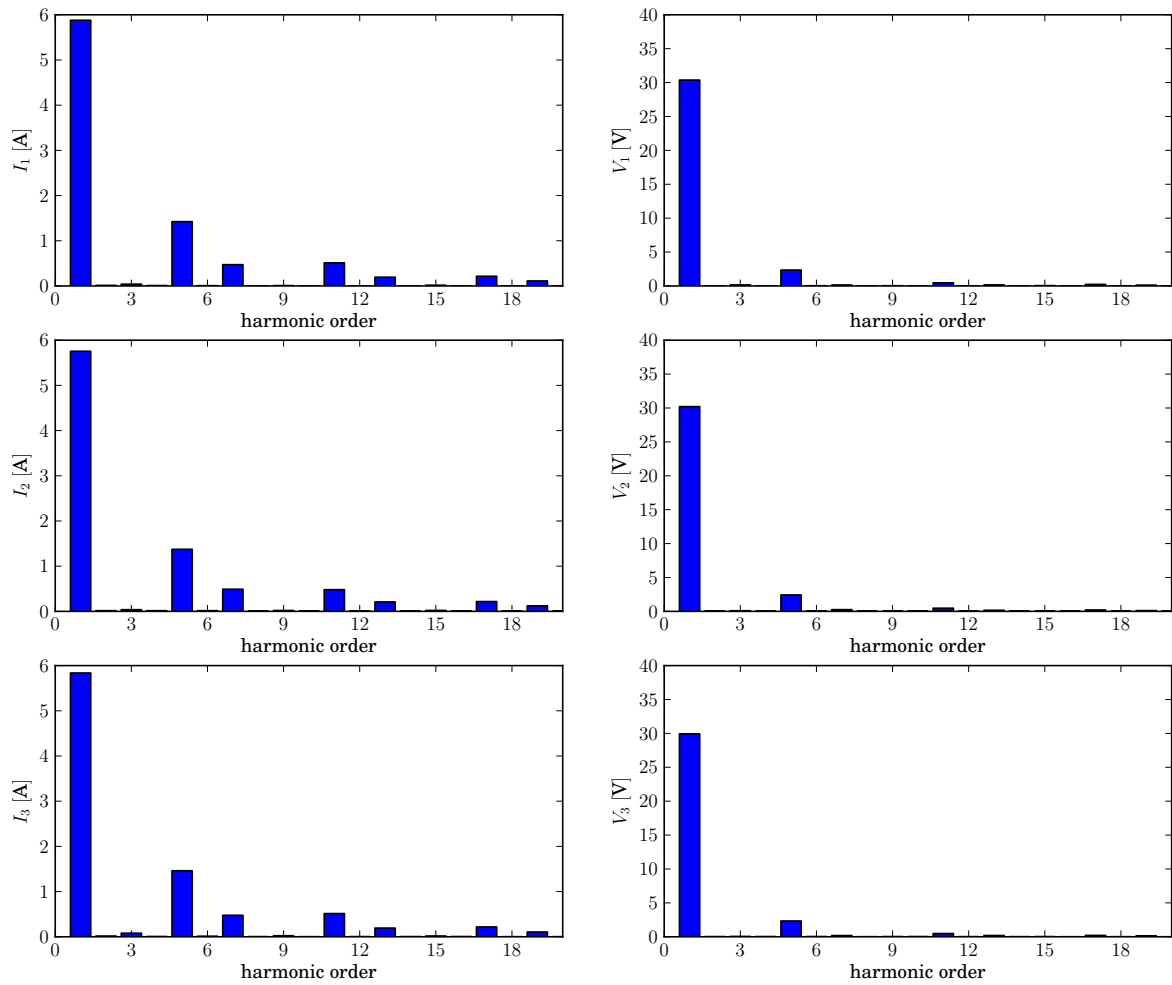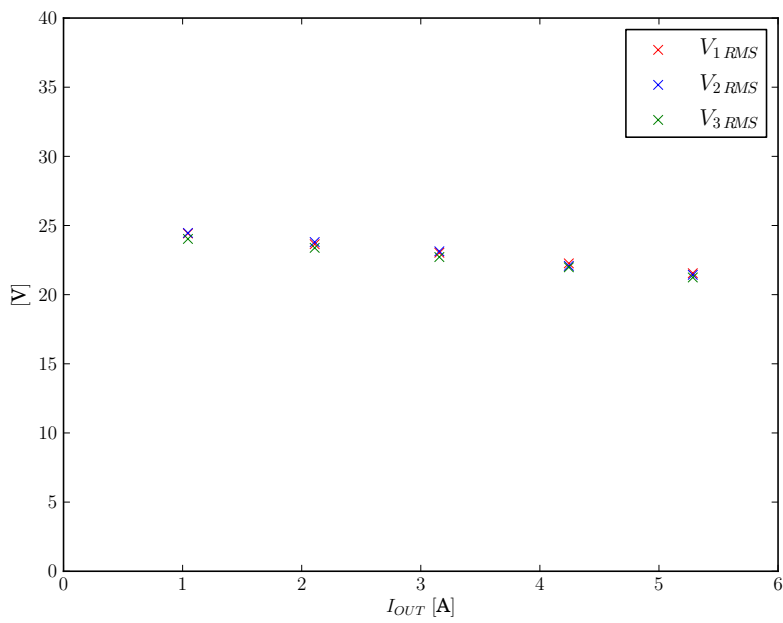
Slika 30: C filter, $I_{OUT} = 5\,\mathrm{A}$
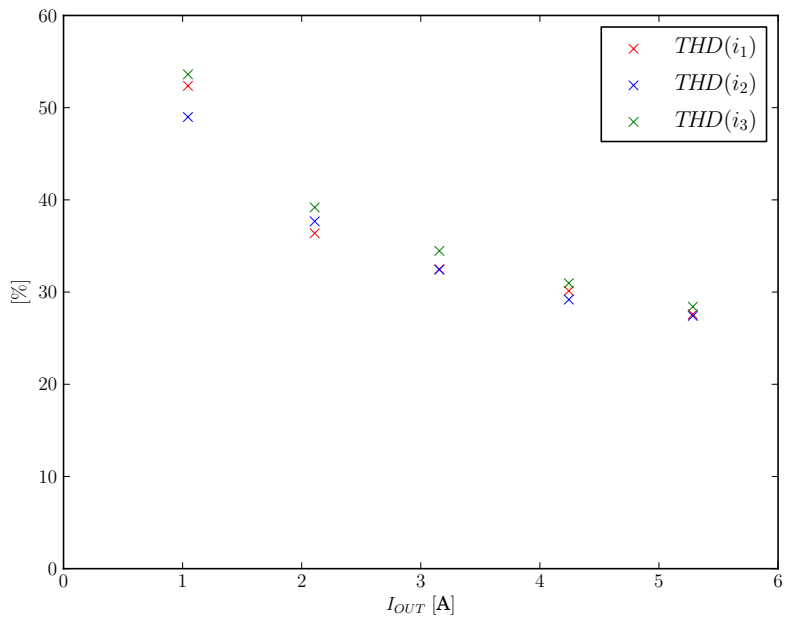
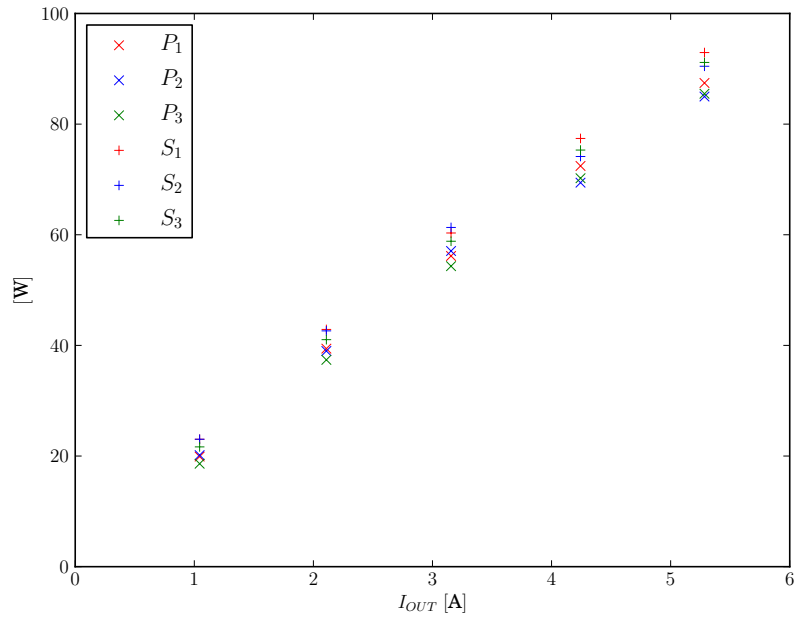Slika 31: C filter, $THD(i_k)(I_{OUT})$
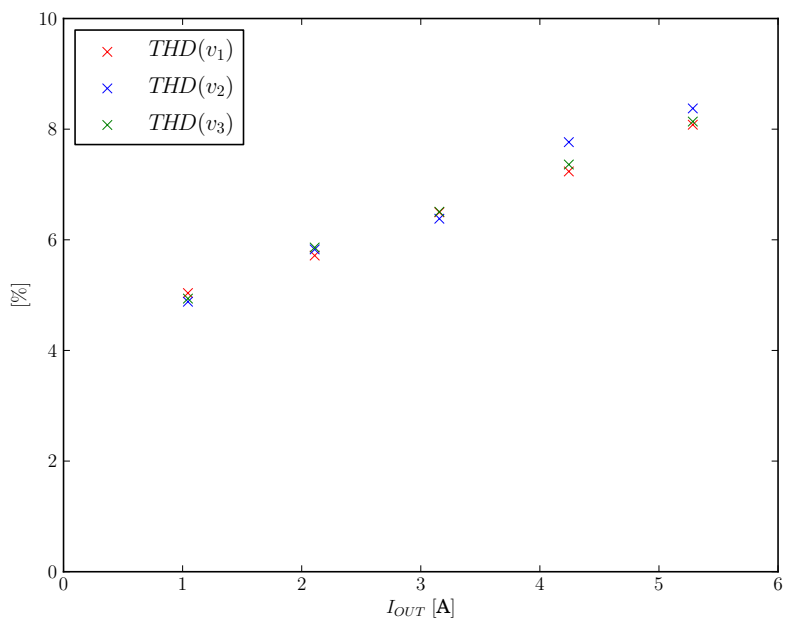
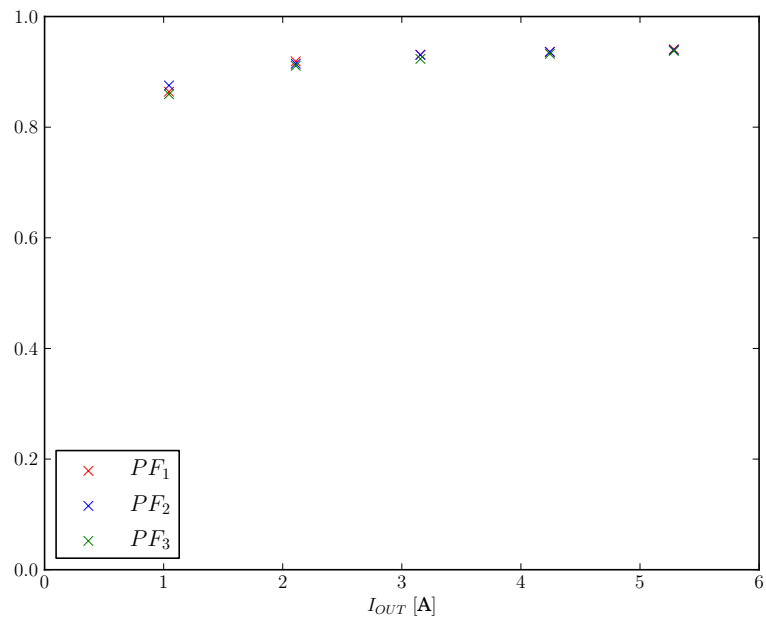Slika 32: C filter, $THD(v_k)(I_{OUT})$
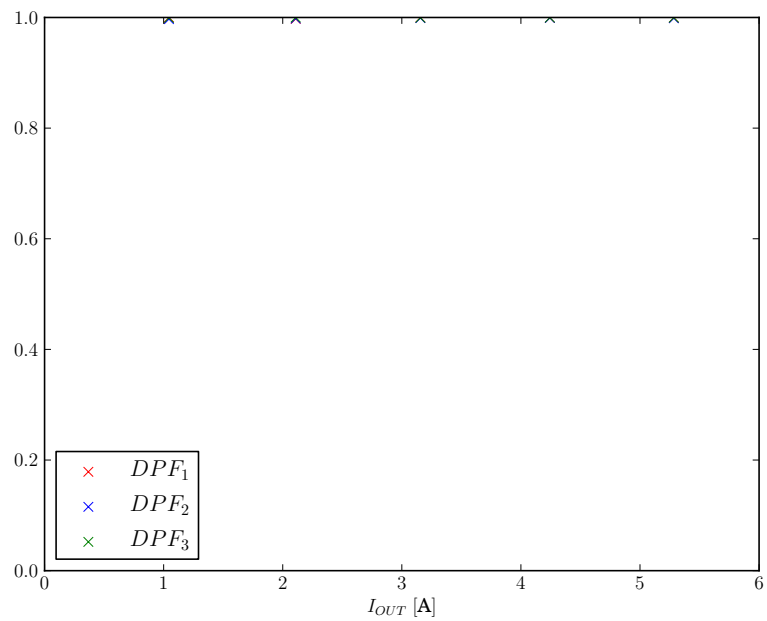
Slika 33: C filter, $I_{k,RMS}(I_{OUT})$

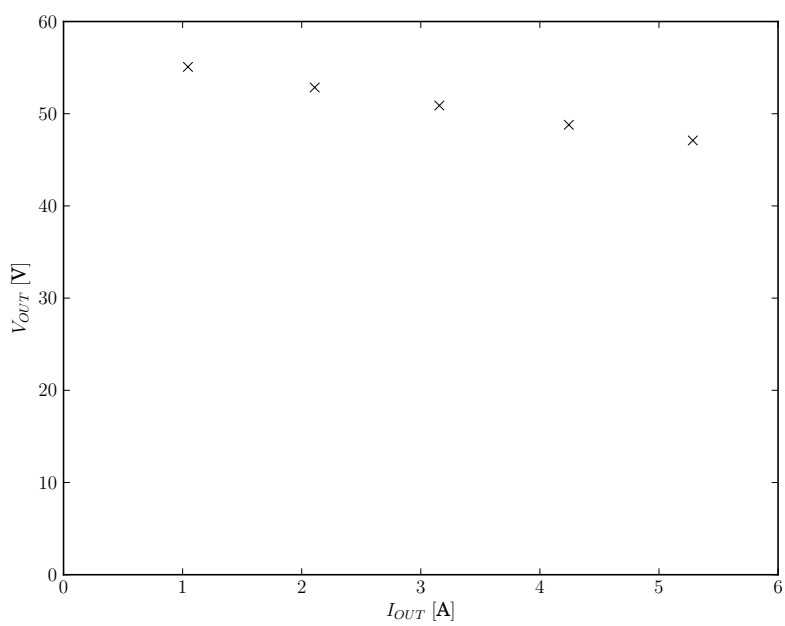Slika 34: C filter, $V_{k,RMS}(I_{OUT})$

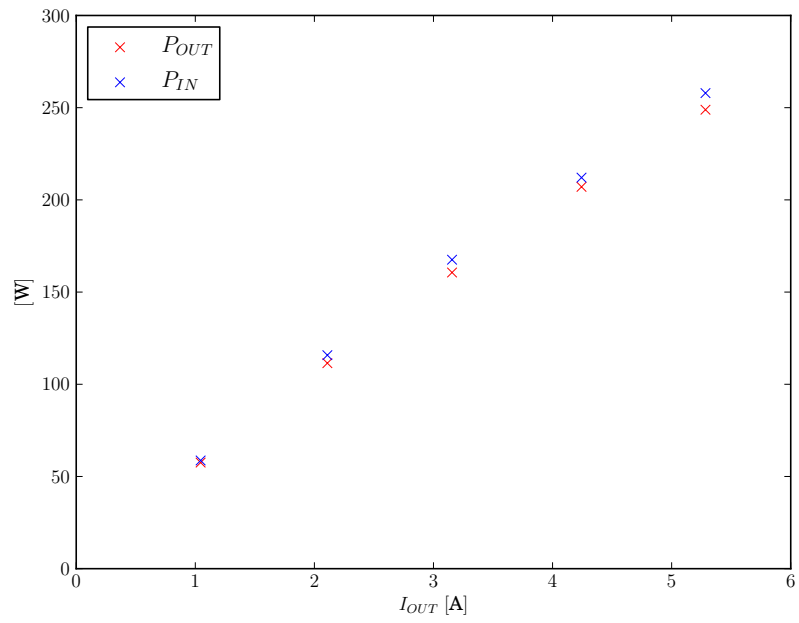Slika 35: C filter, $P_k(I_{OUT})$, $S_k(I_{OUT})$
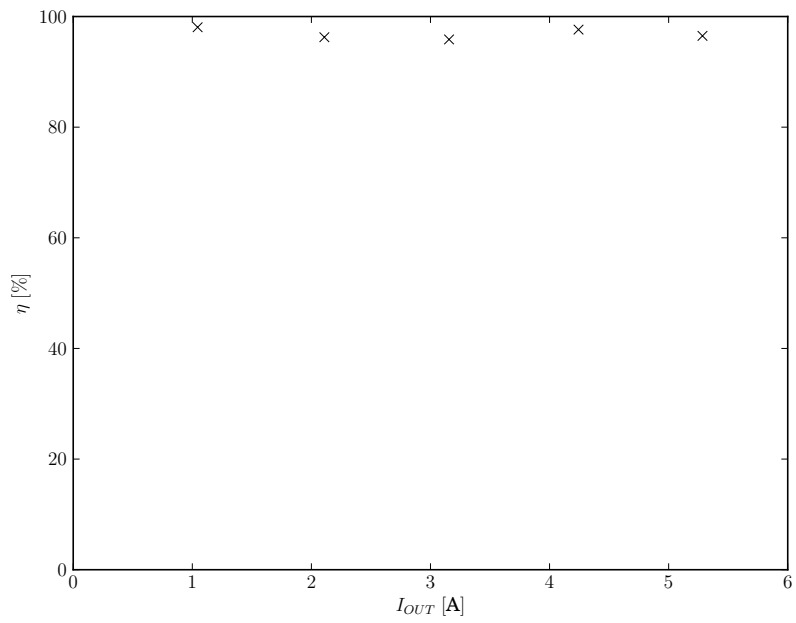

Slika 36: C filter, $PF_k(I_{OUT})$

Slika 37: L filter, $PF_k(I_{OUT})$

Slika 38: L filter, $V_{OUT}(I_{OUT})$

Slika 39: L filter, $P(I_{OUT})$

Slika 40: L filter, $\eta(I_{OUT})$

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3 Bez filtra

Tabela 3: N filter

| I_{OUT} [A]	1.02	2.09	3.17	4.20	5.26
V_{OUT} [V]	55.12	53.06	51.13	49.03	47.24
P_1 [W]	19.72	38.46	55.71	71.69	86.30
P_2 [W]	19.86	39.05	56.45	71.91	86.28
P_3 [W]	19.48	37.81	55.03	70.74	85.25
S_1 [VA]	20.74	40.49	58.69	75.57	91.07
S_2 [VA]	20.87	41.04	59.44	75.83	91.02
S_3 [VA]	20.51	39.85	57.95	74.58	89.94
PF_1	0.9508	0.9499	0.9492	0.9486	0.9476
PF_2	0.9516	0.9515	0.9497	0.9483	0.9479
PF_3	0.9500	0.9486	0.9497	0.9486	0.9478
DPF_1	1.0000	0.9995	0.9995	0.9992	0.9994
DPF_2	0.9998	0.9999	0.9995	0.9994	0.9994
DPF_3	0.9998	0.9997	0.9996	0.9996	0.9995
P_{IN} [W]	59.07	115.32	167.19	214.33	257.83
P_{OUT} [W]	59.07	115.32	167.19	214.33	257.83
η [%]	95.58	95.97	97.03	96.21	96.37
$THD(i_1)$ [%]	29.41	28.44	27.43	26.86	26.00
$THD(i_2)$ [%]	29.19	28.31	27.56	26.74	25.95
$THD(i_3)$ [%]	29.78	28.74	27.66	26.92	25.93
$THD(v_1)$ [%]	3.96	5.02	6.04	6.60	7.73
$THD(v_2)$ [%]	3.97	4.42	5.56	6.77	7.44
$THD(v_3)$ [%]	4.13	5.08	5.90	6.65	7.52

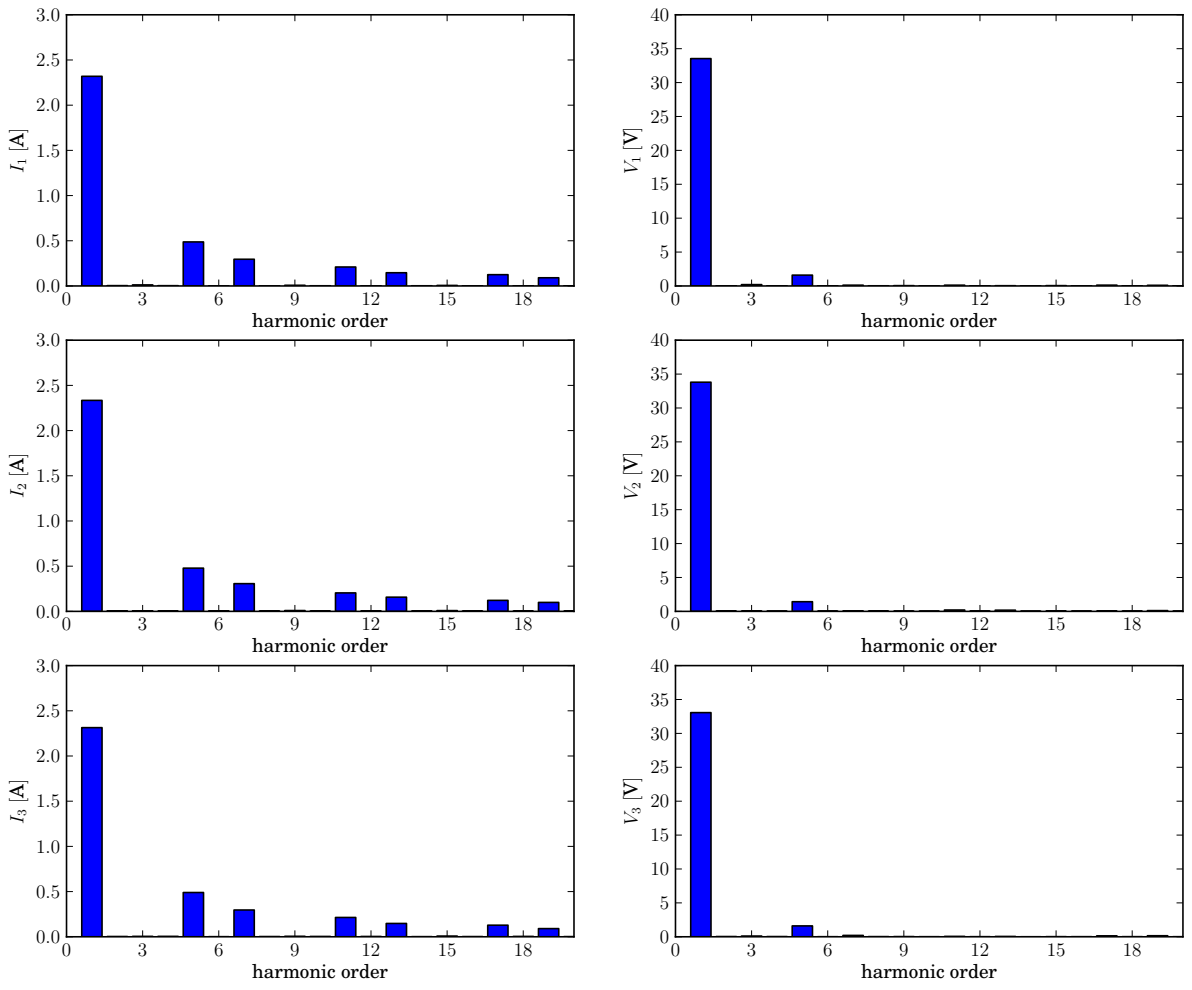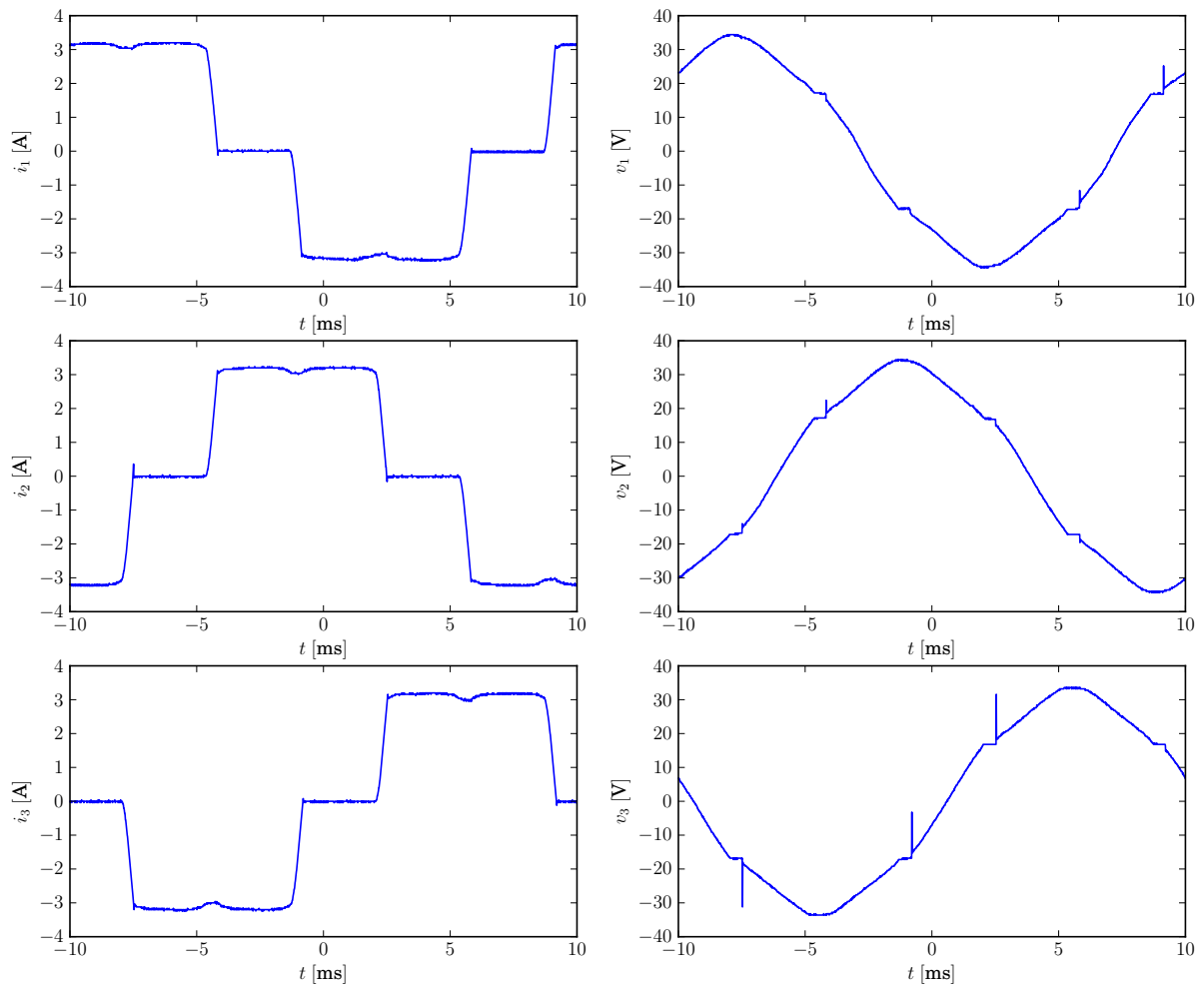$E_T = 57.01\,\text{V},\ R_T = 1.87\,\Omega$
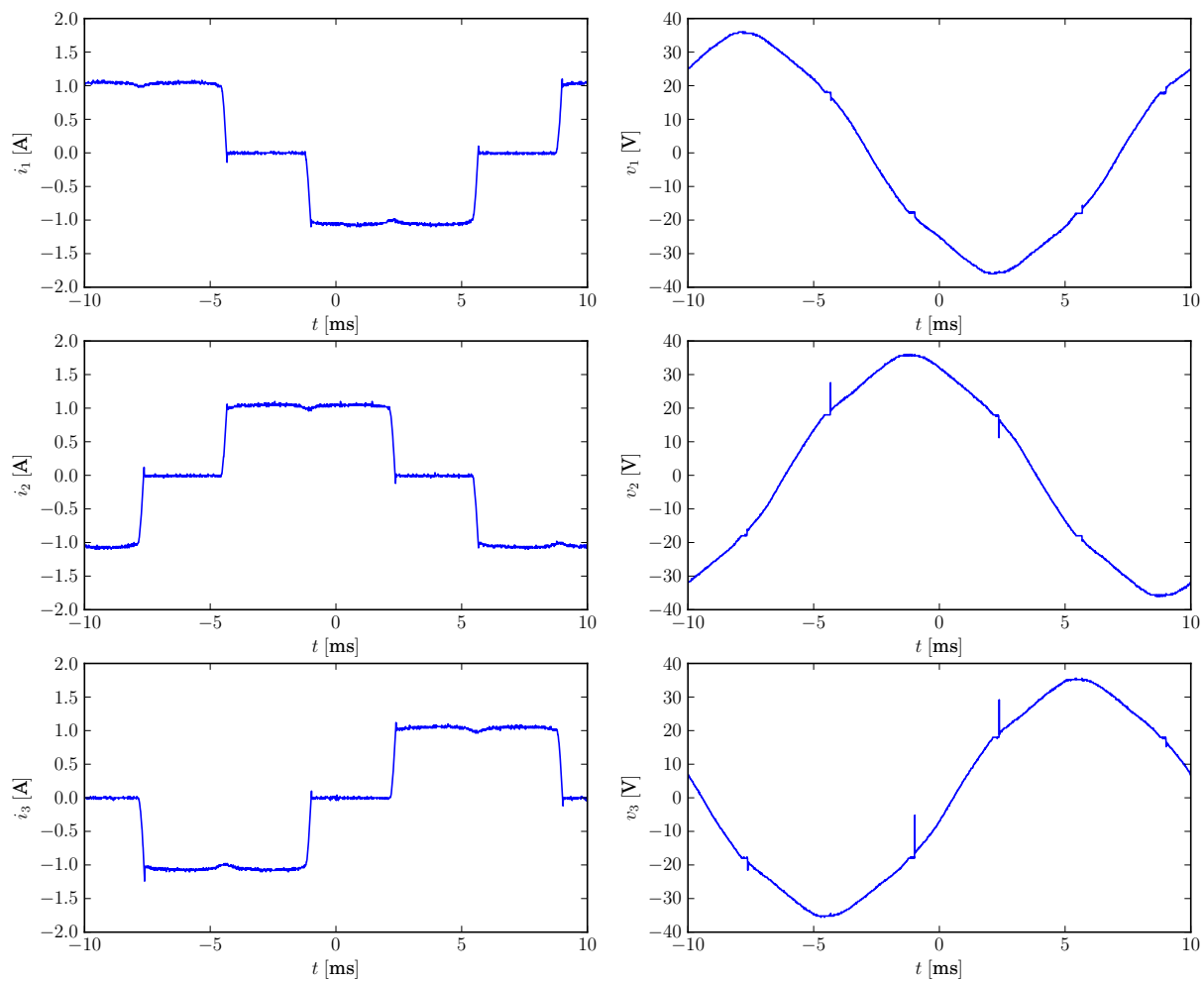
Slika 41: Bez filtra, $I_{OUT} = 1\,\text{A}$
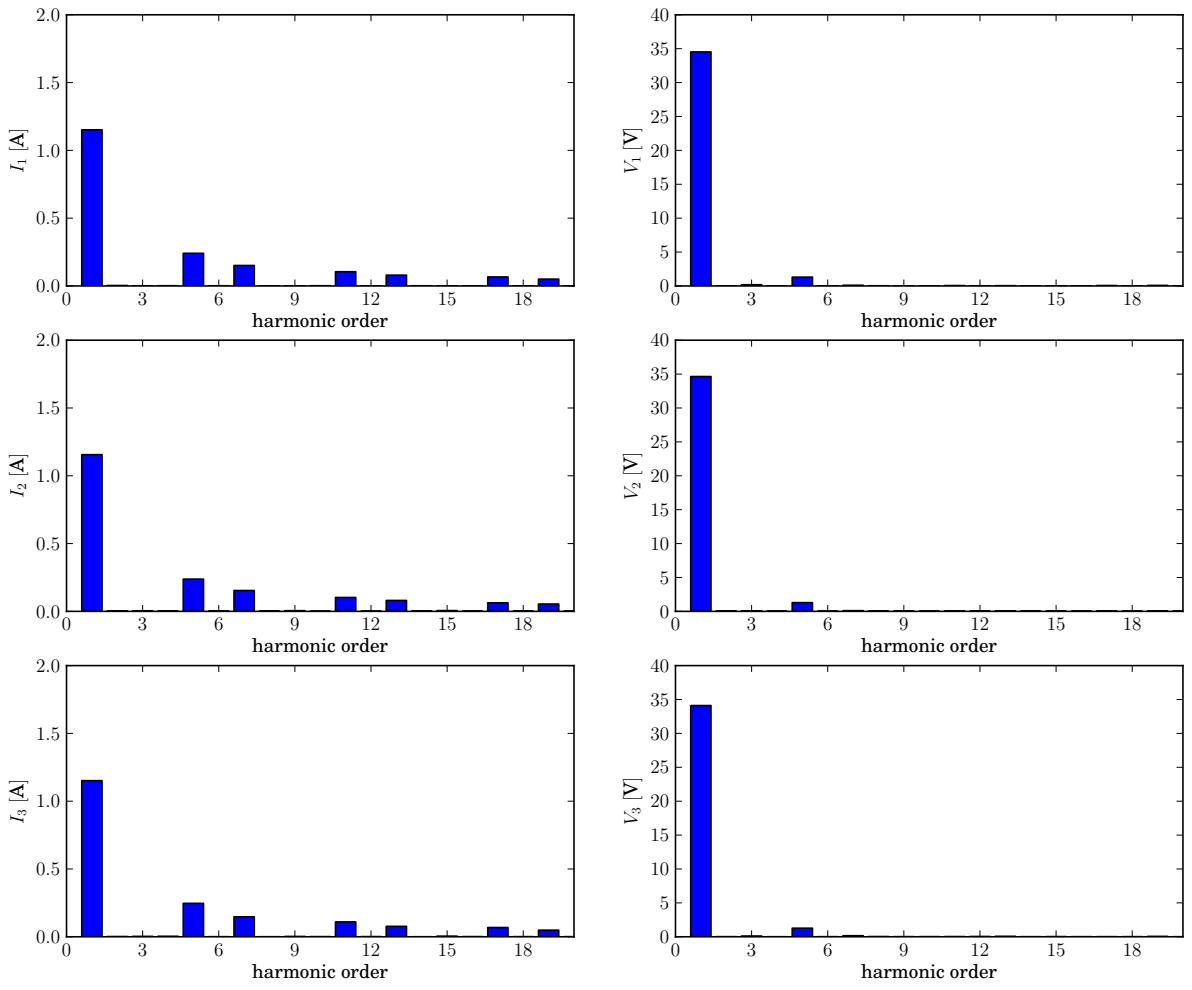
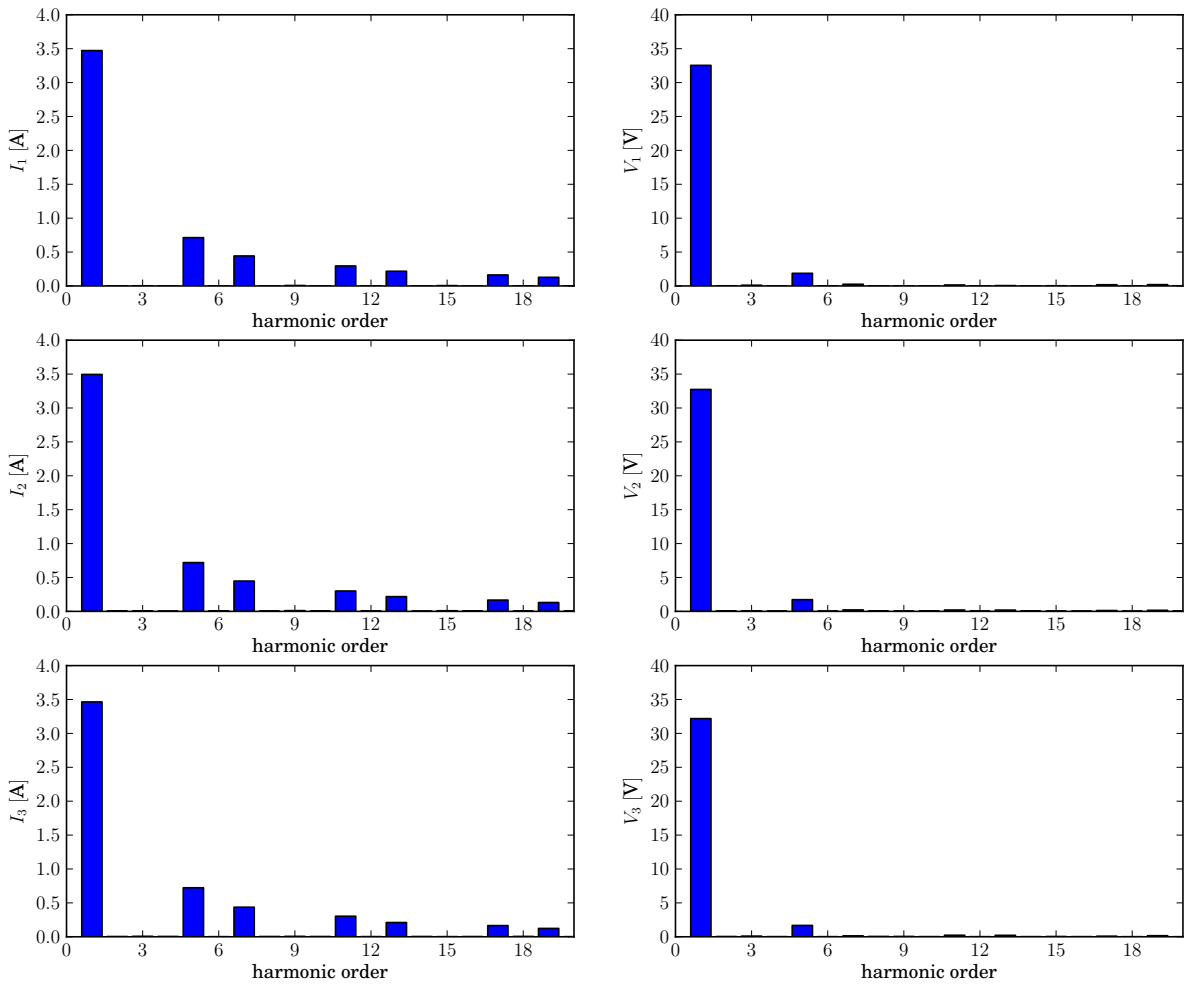Slika 42: Bez filtra, $I_{OUT} = 1\,\text{A}$
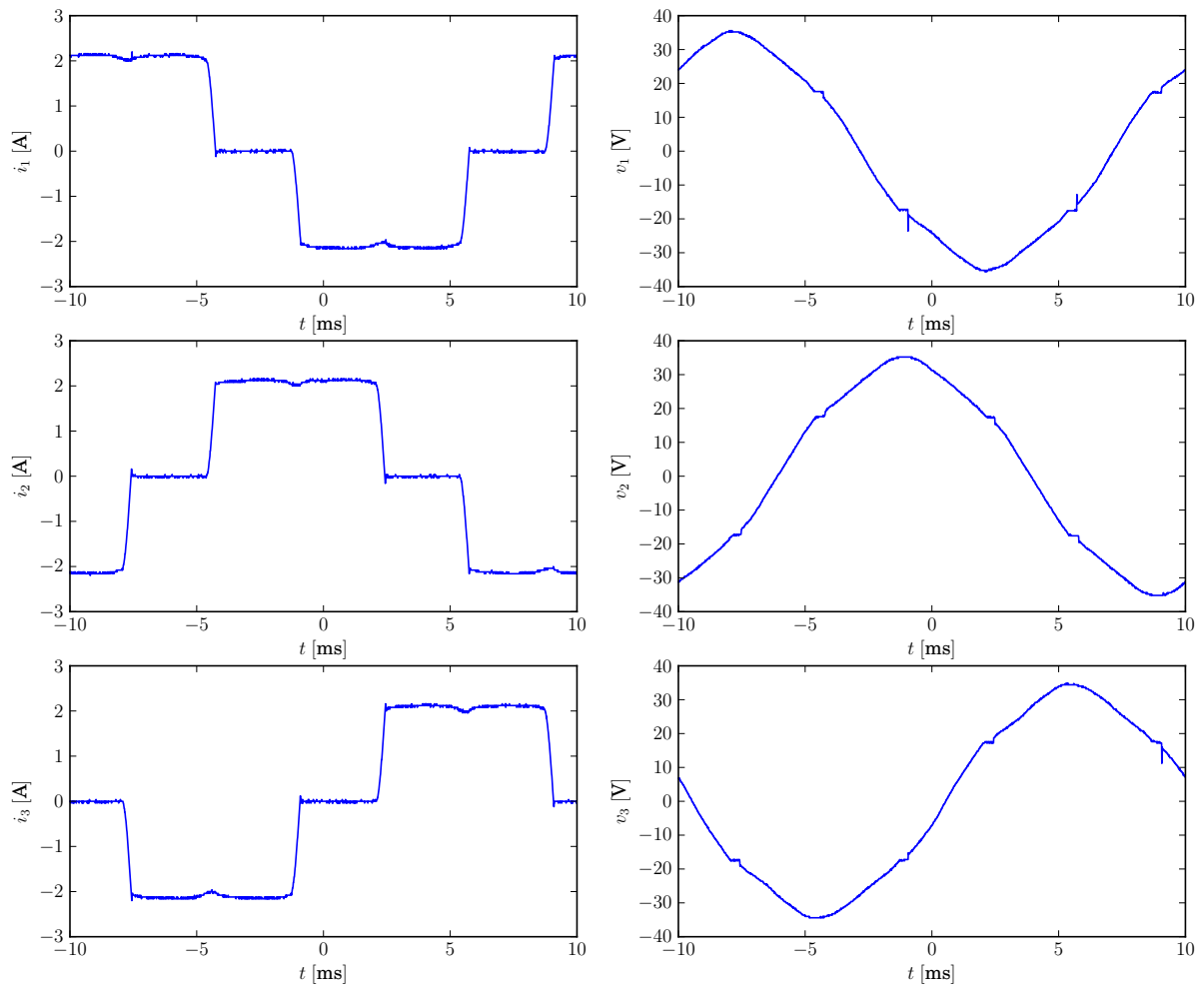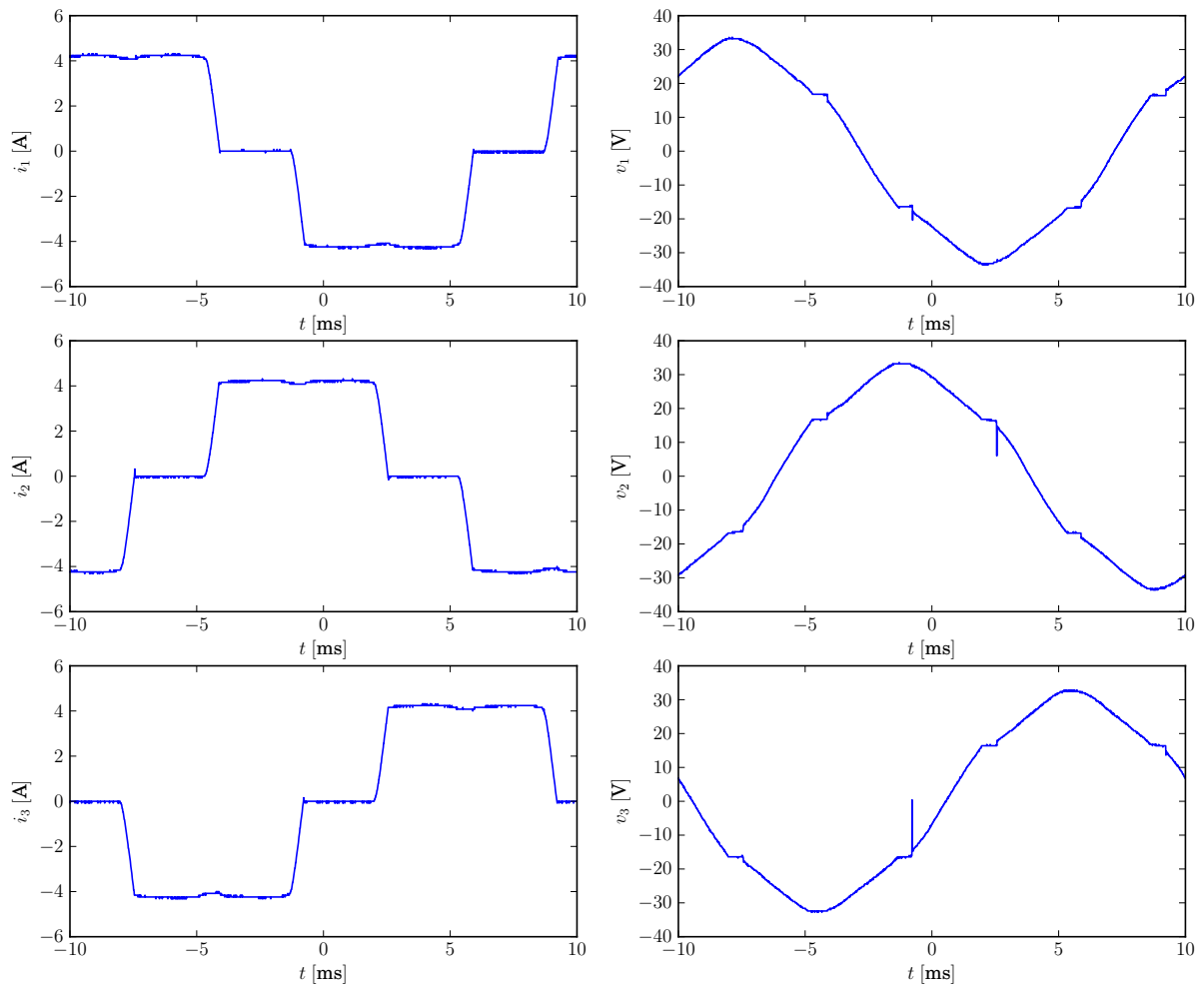
Slika 43: Bez filtra, $I_{OUT} = 2\,\mathrm{A}$

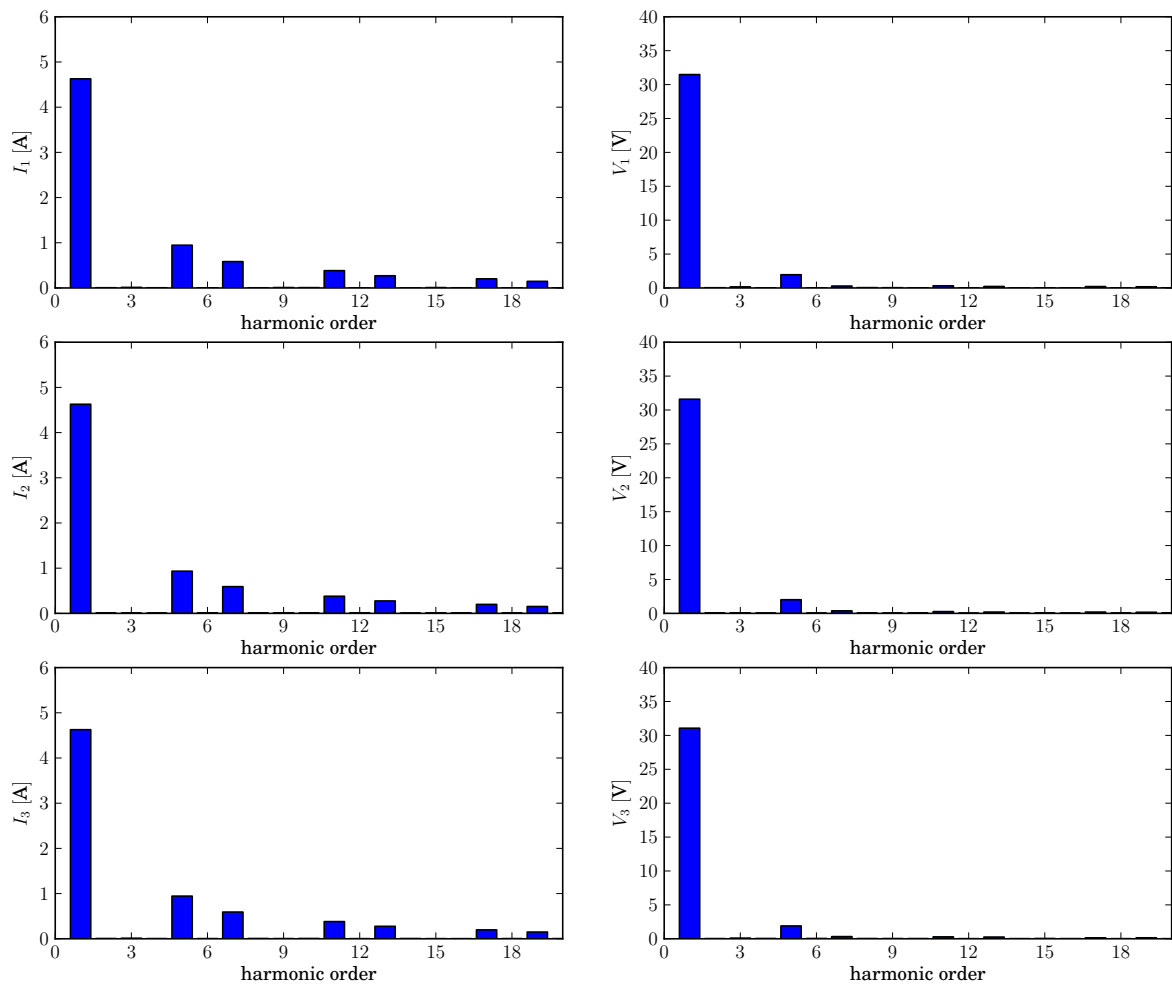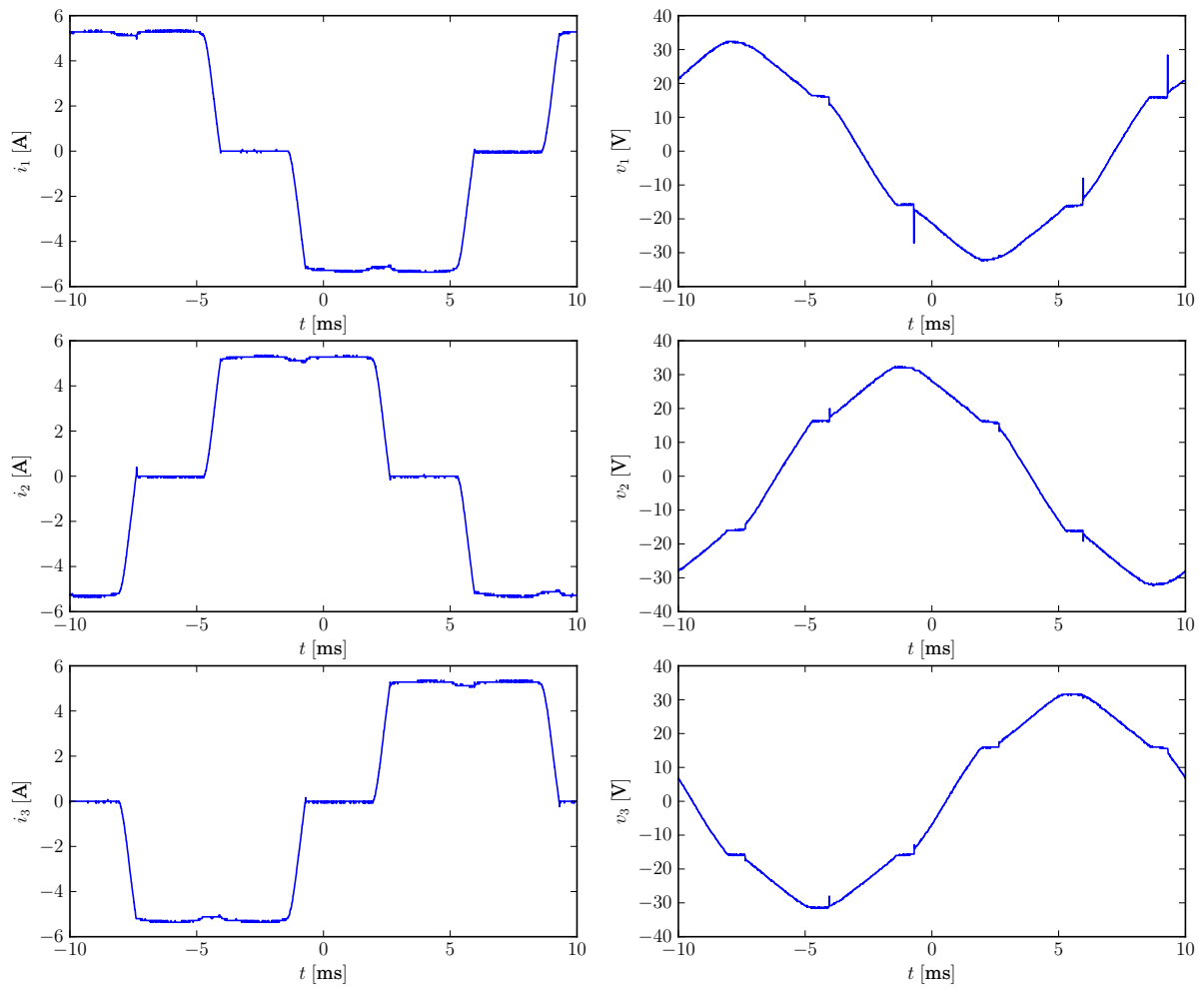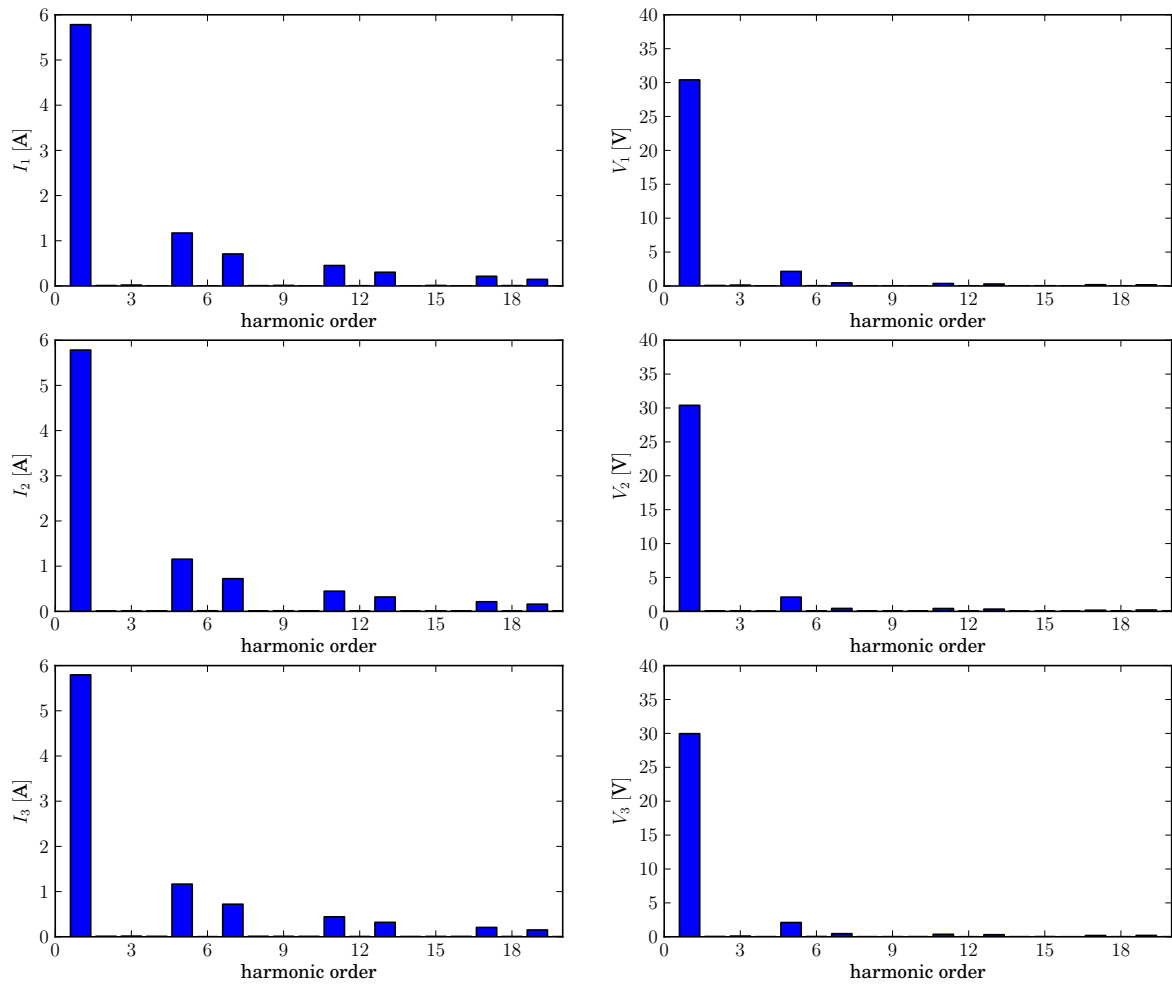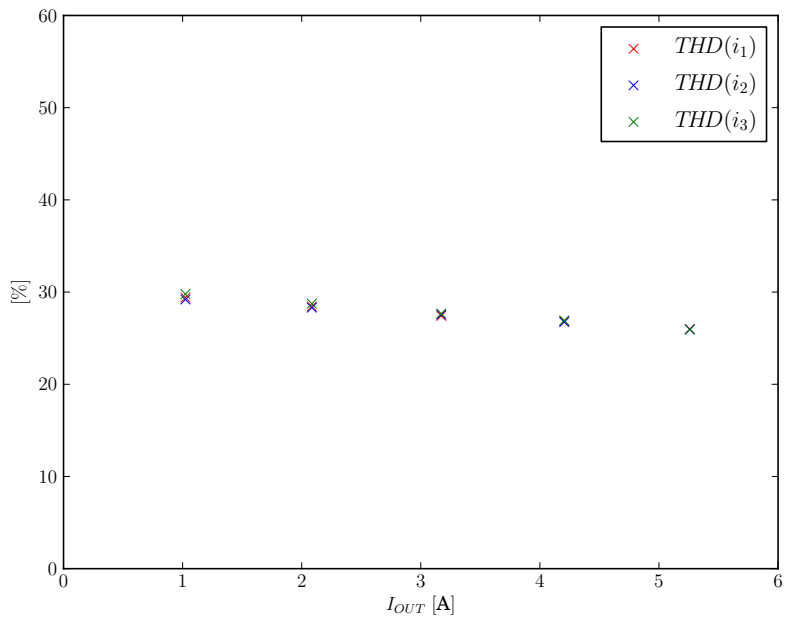Slika 44: Bez filtra, $I_{OUT} = 2\,\text{A}$

Slika 45: Bez filtra, $I_{OUT} = 3\,\mathrm{A}$

Slika 46: Bez filtra, $I_{OUT} = 3\,\text{A}$

Slika 47: Bez filtra, $I_{OUT} = 4\,\text{A}$

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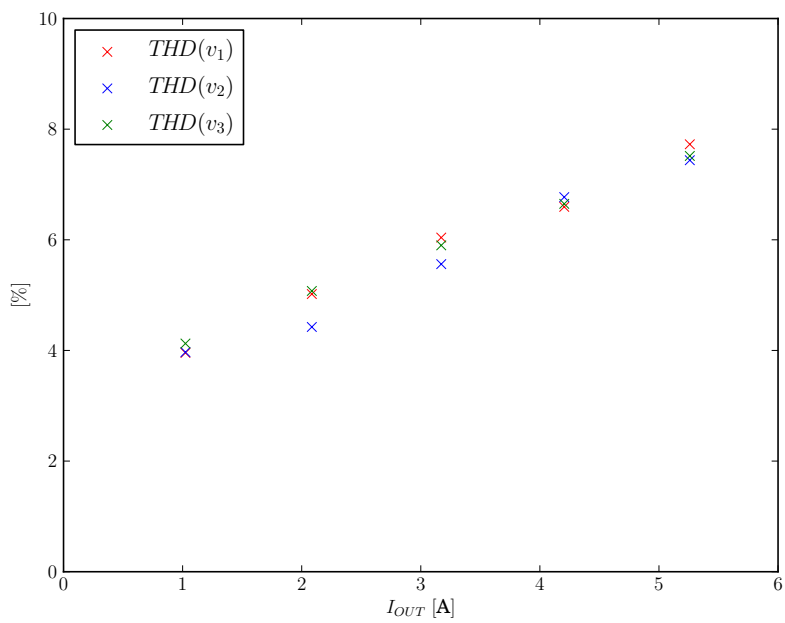Slika 48: Bez filtra, $I_{OUT} = 4\,\mathrm{A}$

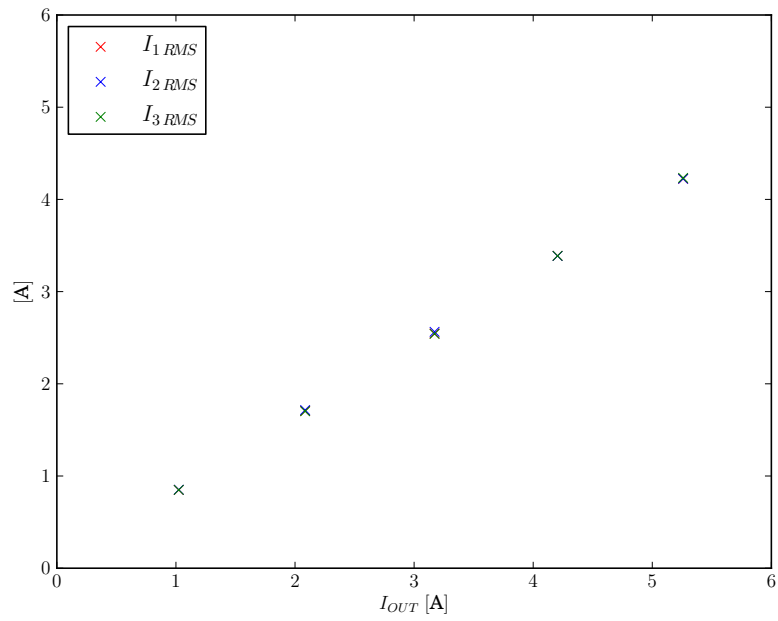Slika 49: Bez filtra, $I_{OUT} = 5\,\text{A}$

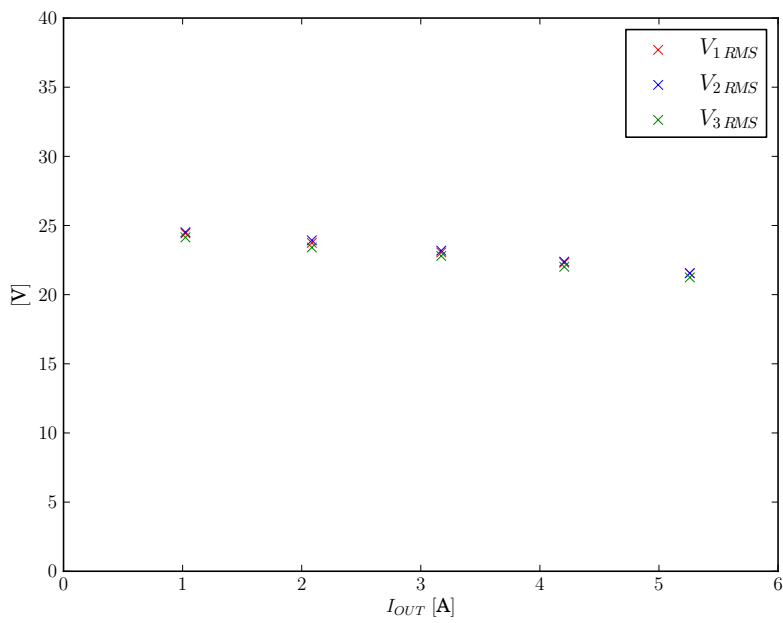Slika 50: Bez filtra, $I_{OUT} = 5\,\text{A}$

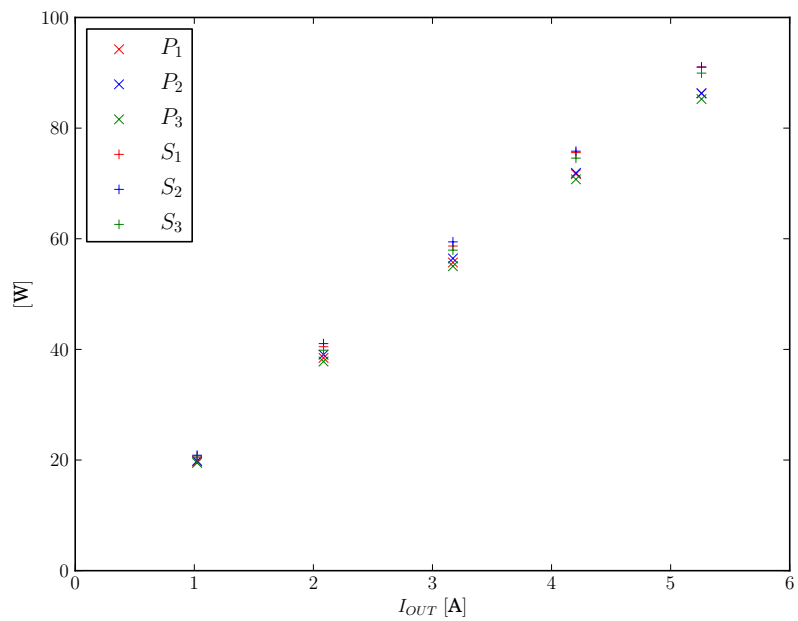Slika 51: N filter, $THD(i_k)(I_{OUT})$

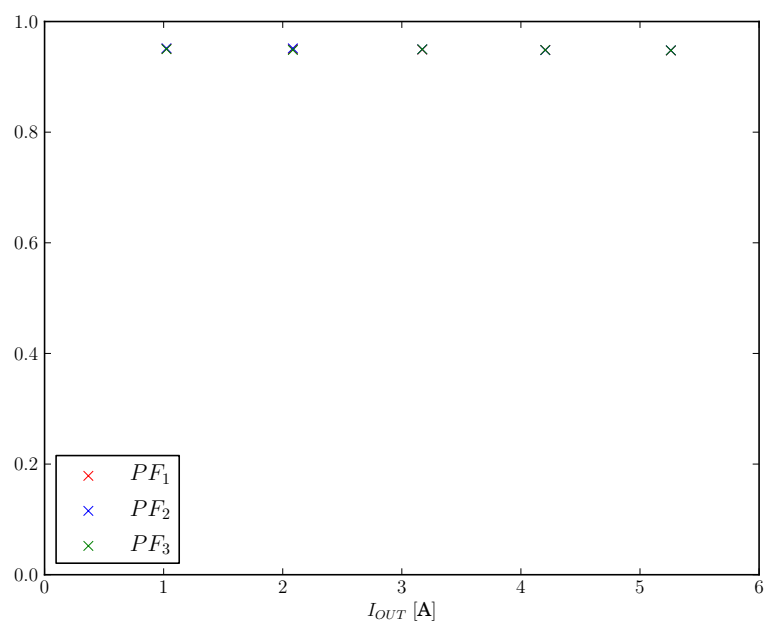Slika 52: N filter, $THD(v_k)(I_{OUT})$
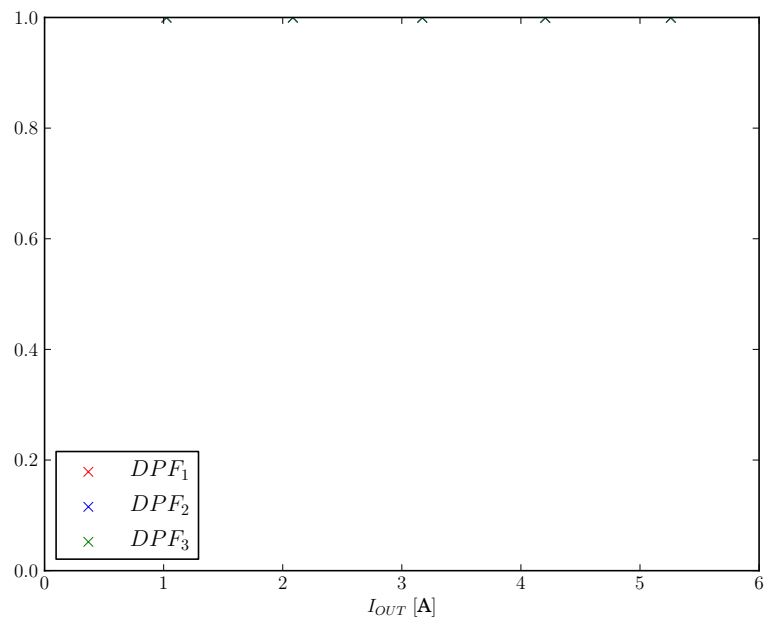
Slika 53: N filter, $I_{k,RMS}(I_{OUT})$

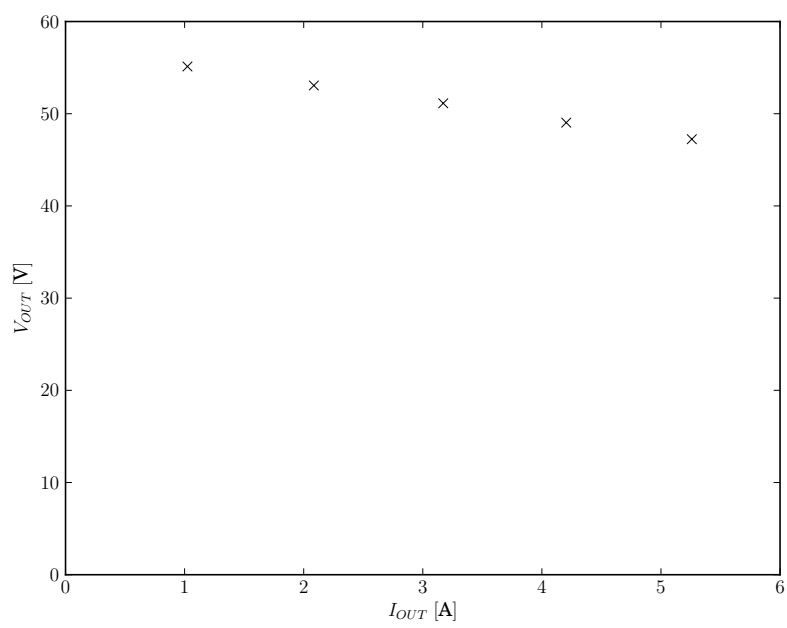Slika 54: N filter, $V_{k,RMS}(I_{OUT})$

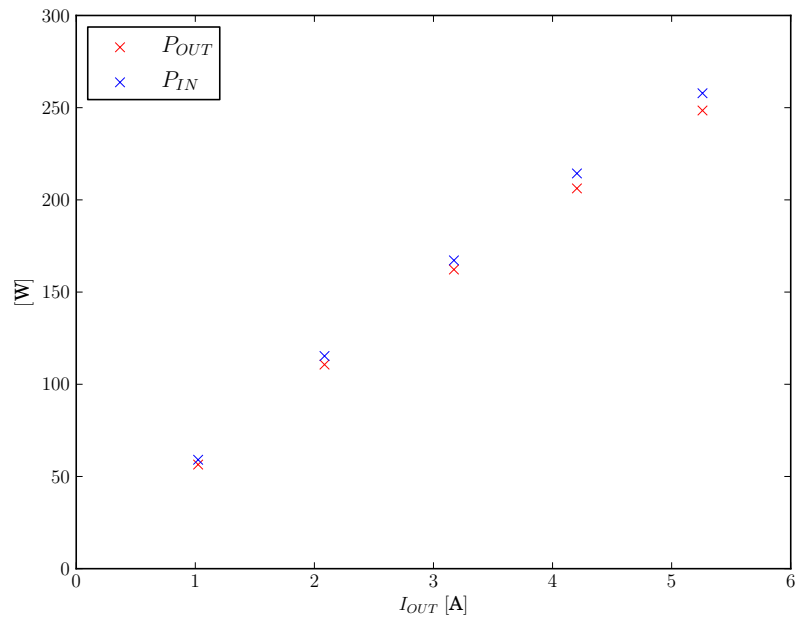Slika 55: N filter, $P_k(I_{OUT})$, $S_k(I_{OUT})$

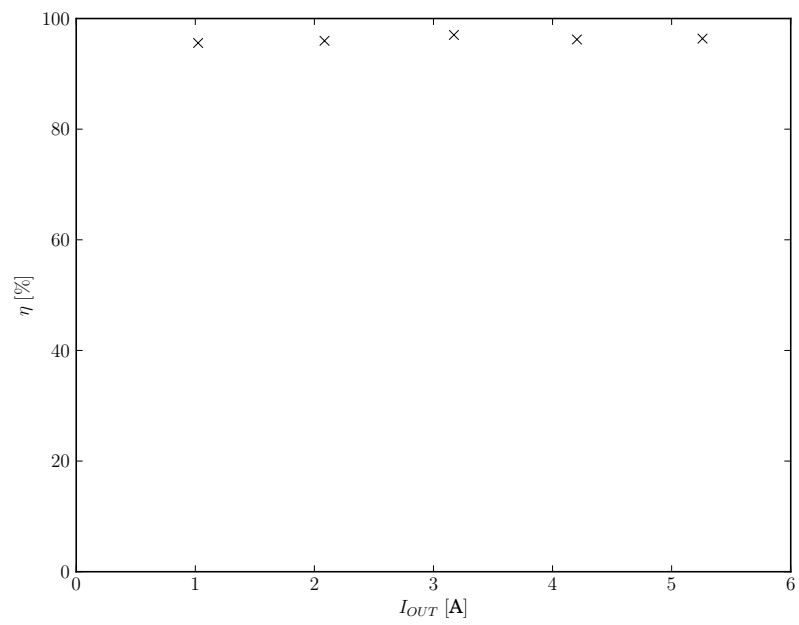

Slika 56: N filter, $PF_k(I_{OUT})$

Slika 57: L filter, $PF_k(I_{OUT})$

Slika 58: L filter, $V_{OUT}(I_{OUT})$

Slika 59: L filter, $P(I_{OUT})$

Slika 60: L filter, $\eta(I_{OUT})$