

Supplementary material of the paper

Galić, J., Mladen, M., Gardašević, G., Petković, M., Malčić, B., Šajić, S.: A Study on Audio Signal Quality Assessment in Visible Light Communication

Table 2. Results obtained in complete darkness.

		THD [%]	SMPTE IMD [%]	SNR [dB]	SINAD [dB]
		<i>Mean ± Std. Dev.</i>			
DC Offset = 2.26 V	V = 5 mVp	2.24 ± 0.18	7.69 ± 0.24	9.8 ± 0.29	11.92 ± 0.13
	V = 10 mVp	3.53 ± 0.08	9.39 ± 0.32	18.38 ± 0.16	19.57 ± 0.12
	V = 15 mVp	5.2 ± 0.04	13.07 ± 0.54	21.87 ± 0.12	21.71 ± 0.13
DC Offset = 2.30 V	V = 5 mVp	2.04 ± 0.11	5.89 ± 0.19	16.26 ± 0.22	18.18 ± 0.19
	V = 10 mVp	3.73 ± 0.06	9.18 ± 0.23	22.72 ± 0.27	23.19 ± 0.09
	V = 15 mVp	5.56 ± 0.02	13.49 ± 0.34	26.16 ± 0.17	23.73 ± 0.07
DC Offset = 2.34 V	V = 5 mVp	1.31 ± 0.04	4.2 ± 0.19	21.04 ± 0.37	23.11 ± 0.2
	V = 10 mVp	2.46 ± 0.03	4.84 ± 0.11	26.75 ± 0.19	27.71 ± 0.18
	V = 15 mVp	3.46 ± 0.02	6.78 ± 0.14	30.27 ± 0.15	28.29 ± 0.22

0 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.46	2.03	2.33	2.49	2.11	2.2	2	2.34	2.41	2.07
SMPTE IMD [%]	7.84	7.23	7.49	7.79	7.95	7.71	7.49	7.95	7.59	7.89
SNR [dB]	9.86	9.41	9.99	9.94	9.3	10.06	9.95	9.66	9.59	10.22
SINAD [dB]	11.78	11.82	11.81	11.89	11.78	12.08	12.05	12.09	11.86	12.07

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.95	2.15	2.13	2.14	1.86	1.93	2.1	1.95	2.16	2.02
SMPTE IMD [%]	5.94	6.12	5.96	5.56	6.02	5.73	5.88	5.98	6.09	5.59
SNR [dB]	16.25	16.25	16.46	16.63	16.13	15.97	16.04	16.14	16.57	16.17
SINAD [dB]	17.92	18.18	18.12	18.31	18.41	18.29	17.82	18.36	18.13	18.3

V = 5 mVp DC Offset = 2.34 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.29	1.34	1.32	1.31	1.34	1.36	1.25	1.33	1.23	1.28
SMPTE IMD [%]	4.02	4.31	4.09	4.39	3.89	4.52	4.3	4.15	4.09	4.25
SNR [dB]	21.08	21.86	21.2	21.08	20.8	21.03	21.05	20.78	21.11	20.43
SINAD [dB]	22.92	22.99	23.07	23.15	23	23.14	23.05	23.22	22.96	23.61

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.56	3.49	3.66	3.5	3.58	3.6	3.52	3.54	3.5	3.37
SMPTE IMD [%]	8.97	9.77	9.15	9.67	9.71	9.35	9.83	9.1	9.06	9.23
SNR [dB]	18.44	18.63	18.26	18.61	18.07	18.32	18.35	18.34	18.33	18.42
SINAD [dB]	19.57	19.34	19.58	19.71	19.72	19.55	19.59	19.43	19.51	19.66

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.72	3.66	3.84	3.72	3.77	3.73	3.69	3.69	3.79	3.69
SMPTE IMD [%]	8.89	9.33	9.2	9.71	9.01	9.28	9.05	9.21	9.12	8.98
SNR [dB]	23.08	22.78	22.61	22.63	22.93	22.59	23.15	22.67	22.35	22.4
SINAD [dB]	23.32	23.08	23.21	23.12	23.33	23.23	23.05	23.22	23.14	23.18

V = 10 mVp DC Offset = 2.34 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.47	2.44	2.48	2.49	2.44	2.51	2.51	2.42	2.43	2.43
SMPTE IMD [%]	4.75	4.84	4.75	4.86	4.99	4.71	5.01	4.84	4.94	4.75
SNR [dB]	27	26.97	26.62	26.78	26.48	27	26.59	26.72	26.8	26.53
SINAD [dB]	27.83	27.47	27.65	28.01	27.79	27.91	27.49	27.58	27.6	27.74

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	5.21	5.22	5.16	5.15	5.27	5.23	5.16	5.25	5.21	5.17
SMPTE IMD [%]	13.83	12.59	12.73	12.93	13.71	12.54	13.18	12.78	13.84	12.53
SNR [dB]	22.05	21.93	21.7	22.04	21.74	21.76	21.9	21.81	21.98	21.83
SINAD [dB]	21.54	21.65	21.51	21.76	21.68	21.62	21.77	21.93	21.74	21.85

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	5.53	5.55	5.59	5.56	5.59	5.55	5.57	5.55	5.58	5.55
SMPTE IMD [%]	13.24	13.02	13.62	13.34	13.7	13.23	14.18	13.79	13.46	13.36
SNR [dB]	26.05	26.25	26.38	26.11	26.07	26.36	25.85	26.17	26.05	26.29
SINAD [dB]	23.62	23.7	23.65	23.72	23.83	23.68	23.83	23.79	23.75	23.76

V = 15 mVp DC Offset = 2.34 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.47	3.47	3.47	3.47	3.48	3.46	3.42	3.44	3.43	3.45
SMPTE IMD [%]	6.64	6.58	6.75	6.62	6.88	6.71	6.91	6.83	6.99	6.89
SNR [dB]	30.14	30.32	30.27	30.29	30.09	30.5	30.45	30.	30.37	30.04
SINAD [dB]	28.42	28.71	28.52	28.43	28.07	28.28	28.04	28.19	28.04	28.22

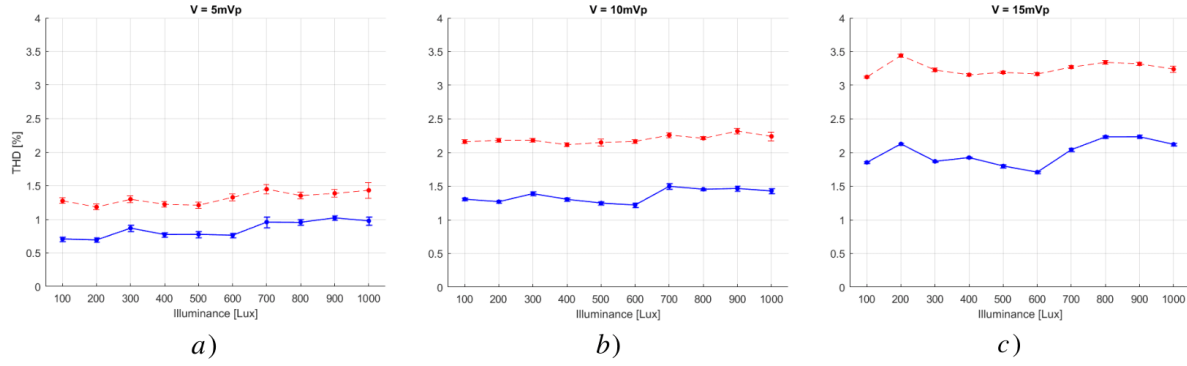


Figure 6. The THD parameter as a function of illuminance, in case when the input voltage is a) 5 mVp, b) 10 mVp, c) 15 mVp. The dashed line represents the case of an offset voltage value of 2.26 V, while the solid line represents the case of an offset voltage value of 2.30 V.

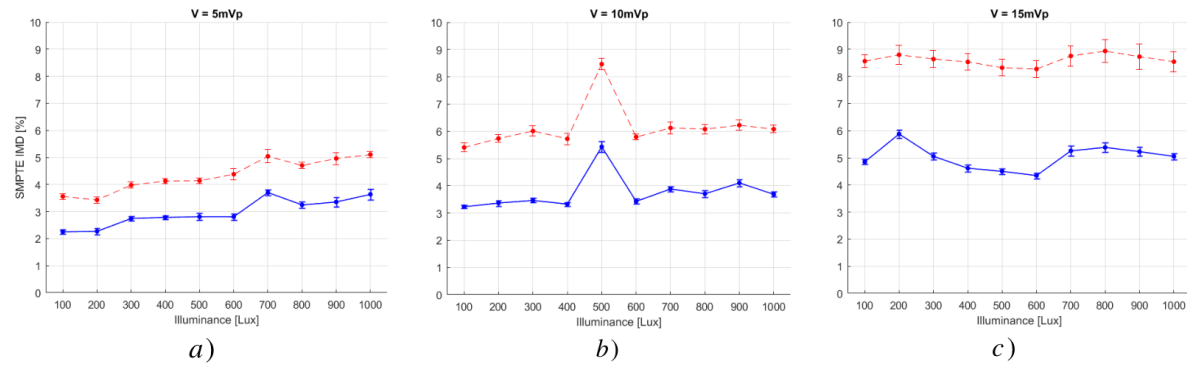


Figure 7. The SMPTE IMD parameter as a function of illuminance, in case when the input voltage is a) 5 mVp, b) 10 mVp, c) 15 mVp. The dashed line represents the case of an offset voltage value of 2.26 V, while the solid line represents the case of an offset voltage value of 2.30 V.

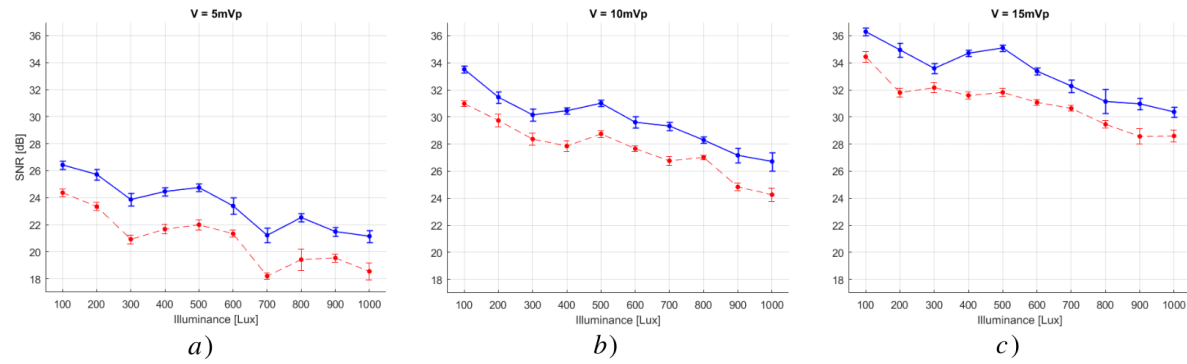


Figure 8. The SNR parameter as a function of illuminance, in case when the input voltage is a) 5 mVp, b) 10 mVp, c) 15 mVp. The dashed line represents the case of an offset voltage value of 2.26 V, while the solid line represents the case of an offset voltage value of 2.30 V.

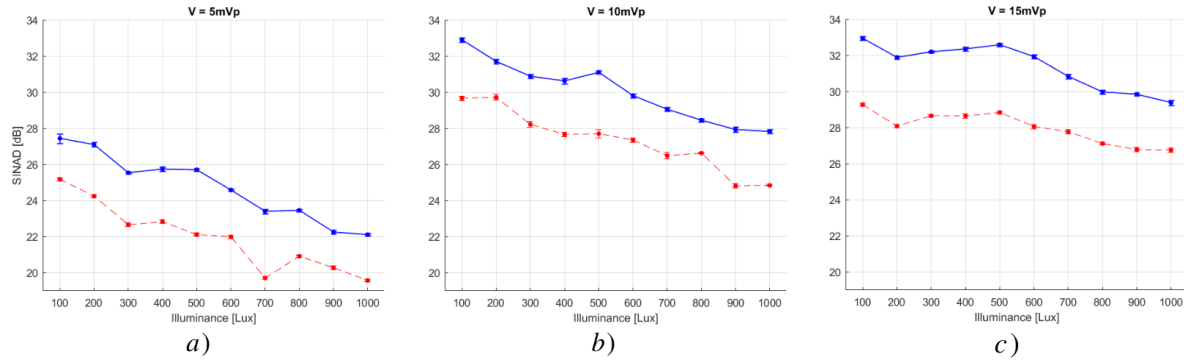


Figure 9. The SINAD parameter as a function of illuminance, in case when the input voltage is a) 5 mVp, b) 10 mVp, c) 15 mVp. The dashed line represents the case of an offset voltage value of 2.26 V, while the solid line represents the case of an offset voltage value of 2.30 V.

100 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.27	1.24	1.27	1.34	1.24	1.2	1.31	1.29	1.32	1.28
SMPTE IMD [%]	3.44	3.49	3.48	3.68	3.51	3.64	3.56	3.41	3.73	3.62
SNR [dB]	23.96	24.53	24.46	24.66	24.45	24.47	23.74	24.43	24.58	24.42
SINAD [dB]	25.13	25.26	25.11	25.13	25.04	25.26	25.18	25.33	25.07	25.21

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	0.69	0.66	0.74	0.71	0.66	0.71	0.71	0.72	0.76	0.72
SMPTE IMD [%]	2.31	2.23	2.13	2.25	2.23	2.31	2.17	2.42	2.19	2.27
SNR [dB]	26.45	27.13	26.5	26.14	26.02	26.56	26.28	26.48	26.23	26.42
SINAD [dB]	27.32	27.22	27.55	27.09	27.33	27.15	27.78	27.45	27.84	27.68

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.17	2.18	2.15	2.22	2.14	2.17	2.15	2.11	2.17	2.15
SMPTE IMD [%]	5.36	5.56	5.51	5.16	5.49	5.33	5.15	5.64	5.3	5.56
SNR [dB]	30.9	31.17	31.2	30.68	31.02	31.12	30.88	31.17	31.04	30.57
SINAD [dB]	29.67	29.72	29.47	29.65	29.62	29.59	29.81	29.54	29.73	29.85

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.33	1.31	1.29	1.3	1.32	1.31	1.31	1.32	1.28	1.31
SMPTE IMD [%]	3.18	3.17	3.25	3.16	3.24	3.19	3.35	3.27	3.24	3.23
SNR [dB]	33.52	33.33	33.72	33.32	33.84	32.98	33.77	33.8	33.33	33.58
SINAD [dB]	32.77	32.92	32.91	32.86	32.7	32.98	33.16	32.84	32.81	33.03

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.11	3.12	3.11	3.13	3.14	3.12	3.14	3.12	3.1	3.14
SMPTE IMD [%]	8.33	8.74	8.47	8.73	8.3	8.8	8.74	8.4	8.86	8.25
SNR [dB]	34.9	34.82	34.21	34.77	34.53	33.98	33.94	34.39	34	34.9
SINAD [dB]	29.22	29.27	29.26	29.14	29.36	29.39	29.37	29.2	29.16	29.28

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.88	1.86	1.85	1.86	1.86	1.85	1.86	1.84	1.82	1.86
SMPTE IMD [%]	4.71	4.84	5.01	4.75	4.92	4.8	4.79	4.94	4.85	4.89
SNR [dB]	36.39	36.54	36.26	35.62	36.46	36.32	36.45	36.16	36.55	36.21
SINAD [dB]	32.99	32.72	32.83	32.94	32.95	32.93	32.96	32.98	33.07	33.06

200 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.14	1.16	1.28	1.19	1.19	1.21	1.21	1.16	1.13	1.17
SMPTE IMD [%]	3.24	3.55	3.57	3.43	3.49	3.26	3.43	3.44	3.52	3.36
SNR [dB]	23.41	23.79	22.84	23.58	23.46	23.19	22.85	23.41	23.58	23.31
SINAD [dB]	24.23	24.19	24.32	24.27	24.05	24.27	24.31	24.24	24.29	24.23

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	0.72	0.67	0.71	0.71	0.66	0.69	0.65	0.69	0.76	0.68
SMPTE IMD [%]	2.32	2.32	2.19	2.13	2.29	2.23	2.44	2.17	2.14	2.44
SNR [dB]	25.12	25.76	25.24	26.08	25.66	25.58	25.79	25.46	26.16	26.38
SINAD [dB]	27.07	27.21	27.12	27.13	27.27	26.89	26.96	27.03	27.08	27.23

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.16	2.18	2.15	2.17	2.24	2.18	2.19	2.19	2.18	2.18
SMPTE IMD [%]	5.57	5.61	5.94	5.62	5.9	5.67	5.97	5.66	5.76	5.65
SNR [dB]	30.11	30.24	30.15	29.3	30.4	29.47	29.94	29.13	29.43	29.14
SINAD [dB]	29.71	29.66	29.45	29.44	29.85	29.81	29.94	29.74	29.77	29.72

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.25	1.27	1.23	1.28	1.26	1.27	1.29	1.31	1.28	1.26
SMPTE IMD [%]	3.27	3.29	3.43	3.43	3.56	3.26	3.37	3.47	3.31	3.25
SNR [dB]	31.88	31.46	30.95	30.8	31.78	31.76	31.62	31.67	30.85	31.77
SINAD [dB]	31.52	31.92	31.62	31.76	31.82	31.73	31.68	31.75	31.57	31.66

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.44	3.47	3.45	3.46	3.41	3.42	3.47	3.44	3.45	3.41
SMPTE IMD [%]	8.63	8.76	8.58	9.1	9.66	8.55	8.79	8.91	8.43	8.56
SNR [dB]	32.22	31.94	31.14	31.8	31.64	31.9	31.57	31.79	32.23	31.69
SINAD [dB]	28.11	28.12	28.26	28.15	28.08	27.97	28.04	27.94	27.99	28.14

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.13	2.15	2.12	2.14	2.11	2.14	2.13	2.11	2.13	2.13
SMPTE IMD [%]	5.75	5.87	6.11	5.65	5.8	6.02	5.68	5.78	6.02	6.03
SNR [dB]	35.25	34.73	35.25	35.06	34.09	34.69	34.16	35.5	35.27	35.49
SINAD [dB]	31.91	31.79	31.82	31.84	31.99	31.91	31.93	32	31.74	31.91

300 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.29	1.3	1.28	1.23	1.34	1.36	1.35	1.35	1.25	1.24
SMPTE IMD [%]	3.94	3.85	3.97	4.04	4.13	4.12	3.85	3.82	4.05	4.01
SNR [dB]	20.98	20.52	21.2	20.84	20.79	21.64	20.82	20.52	20.97	20.92
SINAD [dB]	22.73	22.64	22.76	22.64	22.53	22.47	22.65	22.77	22.64	22.78

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	0.83	0.91	0.85	0.81	0.9	0.82	0.94	0.91	0.9	0.82
SMPTE IMD [%]	2.91	2.69	2.7	2.75	2.65	2.77	2.74	2.63	2.79	2.81
SNR [dB]	24.24	23.88	23.63	24.96	23.78	23.75	23.67	23.8	23.25	23.67
SINAD [dB]	25.54	25.53	25.56	25.46	25.62	25.52	25.54	25.51	25.55	25.55

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.21	2.18	2.15	2.16	2.22	2.12	2.17	2.21	2.19	2.21
SMPTE IMD [%]	6.05	6.18	6.2	5.91	5.65	5.76	6.11	5.95	6.08	6.19
SNR [dB]	28.14	28.15	28.16	27.76	28.4	29.16	28.11	28.12	28.84	28.75
SINAD [dB]	28.15	28.16	28.37	28.26	28.11	27.98	28.12	28.19	28.26	28.53

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.42	1.39	1.41	1.43	1.35	1.36	1.38	1.39	1.42	1.35
SMPTE IMD [%]	3.37	3.38	3.59	3.47	3.53	3.49	3.49	3.32	3.49	3.47
SNR [dB]	30.71	30.65	29.67	30.47	30.08	29.93	30.56	29.57	29.59	30.27
SINAD [dB]	30.88	30.96	30.67	30.73	30.94	30.94	30.81	30.99	30.92	30.97

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.23	3.23	3.19	3.23	3.23	3.26	3.2	3.27	3.19	3.23
SMPTE IMD [%]	8.33	8.37	8.32	8.34	9.07	8.9	8.81	9.14	8.47	8.66
SNR [dB]	32.36	32.51	32.29	31.8	31.91	32.1	32.63	32.28	32.49	31.35
SINAD [dB]	28.58	28.76	28.7	28.61	28.63	28.53	28.7	28.57	28.68	28.73

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.87	1.88	1.87	1.86	1.87	1.87	1.88	1.85	1.88	1.87
SMPTE IMD [%]	5.07	5.31	4.89	4.99	5.01	5.04	4.98	5.21	4.89	5.15
SNR [dB]	33.62	33.43	32.94	33.25	33.84	33.15	34.16	34	33.67	33.8
SINAD [dB]	32.19	32.18	32.15	32.17	32.23	32.21	32.28	32.08	32.2	32.27

400 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.2	1.16	1.24	1.27	1.22	1.25	1.15	1.25	1.29	1.21
SMPTE IMD [%]	4.17	4.09	4.01	4.27	4.06	4.23	4.13	4.18	4.12	4.02
SNR [dB]	2.49	21.67	21.78	21.41	21.85	22.3	21.98	21.81	21.2	21.22
SINAD [dB]	22.96	22.86	22.67	22.8	22.78	22.87	22.85	22.93	22.65	22.87

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	0.75	0.81	0.75	0.78	0.76	0.79	0.72	0.82	0.81	0.75
SMPTE IMD [%]	2.67	2.72	2.83	2.81	2.78	2.85	2.9	2.78	2.71	2.81
SNR [dB]	24.63	24.67	24.17	24.35	24.3	24.76	24.56	23.9	24.84	24.44
SINAD [dB]	25.81	25.74	25.79	25.76	25.9	25.87	25.8	25.59	25.57	25.64

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.11	2.15	2.09	2.14	2.09	2.11	2.14	2.15	2.09	2.09
SMPTE IMD [%]	5.57	5.63	5.98	5.64	5.7	5.95	5.85	5.33	5.61	5.97
SNR [dB]	28.4	27.7	28.23	28.27	27.17	27.56	28.11	27.66	27.9	27.44
SINAD [dB]	27.72	27.59	27.64	27.84	27.63	27.55	27.76	27.71	27.68	27.43

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.3	1.3	1.28	1.28	1.32	1.31	1.32	1.32	1.34	1.28
SMPTE IMD [%]	3.25	3.35	3.23	3.34	3.39	3.35	3.41	3.23	3.39	3.31
SNR [dB]	30.45	30.87	30.55	30.35	30.28	30.1	30.33	30.43	30.76	30.45
SINAD [dB]	30.52	30.51	30.57	30.43	30.52	30.53	30.77	30.8	30.84	30.73

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.16	3.15	3.16	3.16	3.15	3.15	3.16	3.18	3.11	3.18
SMPTE IMD [%]	8.32	8.33	8.81	8.86	8.42	8.74	8.81	8.03	8.21	8.82
SNR [dB]	31.23	31.69	31.48	31.53	31.62	31.35	32.11	31.47	31.76	31.59
SINAD [dB]	28.61	28.65	28.66	28.55	28.72	28.82	28.77	28.55	28.37	28.72

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.92	1.94	1.91	1.92	1.93	1.92	1.93	1.94	1.94	1.91
SMPTE IMD [%]	4.74	4.41	4.6	4.52	4.72	4.46	4.59	4.77	4.61	4.73
SNR [dB]	34.69	34.73	34.74	34.9	34.2	35	34.57	34.66	34.93	34.64
SINAD [dB]	32.51	32.41	32.26	32.3	32.29	32.27	32.15	32.38	32.44	32.53

500 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.22	1.19	1.19	1.24	1.25	1.15	1.29	1.25	1.13	1.2
SMPTE IMD [%]	4.01	4.19	4.04	4.16	4.18	4.28	4.05	4.26	4.03	4.19
SNR [dB]	22.31	22.32	22.06	22.17	21.67	22.19	22.22	21.12	22.13	21.76
SINAD [dB]	22.07	22.02	22.1	22.03	22.16	22.07	22.19	22.08	22.15	22.29

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	0.8	0.76	0.74	0.76	0.72	0.77	0.81	0.85	0.71	0.84
SMPTE IMD [%]	2.91	2.66	2.65	2.81	2.82	2.72	2.85	2.78	3.09	2.79
SNR [dB]	24.93	24.47	24.6	24.5	24.27	24.96	24.98	24.99	24.84	24.97
SINAD [dB]	25.65	25.6	25.82	25.67	25.62	25.77	25.73	25.69	25.71	25.79

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.21	2.15	2.12	2.16	2.18	2.13	2.22	2.13	2.15	2.05
SMPTE IMD [%]	8.81	8.46	8.42	8.57	8.64	8.18	8.31	8.44	8.15	8.67
SNR [dB]	28.45	28.71	29.01	28.77	28.42	29.17	28.65	29.05	28.65	28.57
SINAD [dB]	27.17	27.86	27.47	27.9	27.86	27.64	27.69	27.79	27.61	27.97

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.24	1.21	1.27	1.23	1.24	1.27	1.27	1.28	1.25	1.24
SMPTE IMD [%]	5.38	5.48	5.63	5.06	5.5	5.26	5.56	5.27	5.38	5.77
SNR [dB]	30.82	30.94	31.21	31.15	30.8	31.24	31.18	31.1	31.12	30.55
SINAD [dB]	31.1	31.14	31.18	31.05	30.94	31.07	31.21	31.02	31.06	31.23

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.19	3.17	3.15	3.2	3.21	3.22	3.2	3.19	3.2	3.18
SMPTE IMD [%]	8.25	8.76	8.13	8.64	8.22	8.04	7.98	8.77	8.36	8.06
SNR [dB]	31.54	31.45	32.23	32.03	32.09	32.11	31.64	31.83	31.75	31.4
SINAD [dB]	28.74	28.9	28.91	28.78	28.84	28.81	28.73	28.9	28.91	28.85

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.81	1.83	1.78	1.84	1.82	1.78	1.79	1.78	1.8	1.78
SMPTE IMD [%]	4.5	4.65	4.39	4.39	4.48	4.5	4.38	4.63	4.44	4.64
SNR [dB]	35.02	34.89	35.35	35.39	34.83	35.33	34.94	34.77	35.17	35.26
SINAD [dB]	32.63	32.48	32.72	32.57	32.63	32.64	32.53	32.56	32.44	32.64

600 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.31	1.3	1.33	1.29	1.39	1.37	1.4	1.27	1.27	1.35
SMPTE IMD [%]	4.14	4.49	4.64	4.39	4.49	4.38	4	4.69	4.3	4.25
SNR [dB]	21.18	21.59	21.67	20.91	21.35	21.6	21.12	21.5	21.25	21.16
SINAD [dB]	21.83	21.97	22.01	22.07	21.95	22.09	22.1	22.04	21.9	21.94

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	0.73	0.79	0.75	0.79	0.81	0.71	0.74	0.77	0.78	0.77
SMPTE IMD [%]	2.61	2.93	2.76	2.81	2.99	2.77	2.92	2.78	2.69	2.81
SNR [dB]	22.26	23.88	23.73	23.52	23.71	22.85	22.56	23.61	24.08	23.73
SINAD [dB]	24.54	24.59	24.62	24.59	24.58	24.61	24.6	24.51	24.57	24.65

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.16	2.17	2.13	2.16	2.18	2.18	2.23	2.17	2.13	2.15
SMPTE IMD [%]	5.75	5.88	5.93	5.64	5.66	5.94	5.71	5.81	5.84	5.73
SNR [dB]	27.54	28	27.61	27.44	27.51	27.92	27.7	27.79	27.54	27.45
SINAD [dB]	27.34	27.45	27.32	27.2	27.35	27.2	27.27	27.32	27.4	27.64

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.23	1.27	1.23	1.19	1.26	1.23	1.17	1.21	1.22	1.2
SMPTE IMD [%]	3.49	3.5	3.31	3.45	3.3	3.48	3.34	3.44	3.37	3.58
SNR [dB]	29.49	28.73	29.85	29.85	29.46	30.16	29.93	29.16	29.83	29.59
SINAD [dB]	29.67	29.74	29.77	29.88	29.82	29.87	29.98	29.93	29.68	29.76

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.17	3.18	3.13	3.16	3.15	3.21	3.2	3.13	3.16	3.18
SMPTE IMD [%]	8.13	8.48	8.63	8.36	8.51	8.33	7.69	8.52	7.79	8.29
SNR [dB]	31.43	31.26	30.89	30.88	31	31.29	30.85	31.03	30.97	31.12
SINAD [dB]	27.92	27.91	27.99	28.13	28.14	28.28	28.17	27.97	27.98	28.06

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.71	1.71	1.7	1.73	1.7	1.73	1.71	1.71	1.71	1.68
SMPTE IMD [%]	4.49	4.27	4.22	4.37	4.27	4.49	4.48	4.26	4.33	4.25
SNR [dB]	33.03	33.25	33.62	33.45	32.87	33.66	33.27	33.5	33.64	33.53
SINAD [dB]	31.87	31.9	31.75	31.99	31.91	31.76	32.05	31.96	31.99	32.1

700 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.38	1.46	1.49	1.31	1.43	1.42	1.48	1.56	1.5	1.47
SMPTE IMD [%]	4.91	4.78	5.08	5	5.21	4.94	4.7	4.97	5.33	5.49
SNR [dB]	18.26	18.71	18.02	18.18	17.75	18.12	18.37	18.07	18.24	18.21
SINAD [dB]	19.69	19.65	19.65	19.64	19.73	19.77	19.66	19.67	19.84	19.79

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	0.97	1	0.94	1.01	0.8	0.85	0.99	10.2	1.04	0.97
SMPTE IMD [%]	3.64	3.61	3.86	3.76	3.8	3.71	3.52	3.8	3.72	3.6
SNR [dB]	21.93	21.91	20.59	20.9	21.93	20.85	21.19	21.31	20.83	20.76
SINAD [dB]	23.15	23.43	23.48	23.42	23.34	23.35	23.41	23.38	23.58	23.53

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.33	2.22	2.24	2.29	2.25	2.27	2.27	2.29	2.21	2.22
SMPTE IMD [%]	6.01	6.43	6.27	5.88	5.98	6.2	6.3	6.41	5.75	5.98
SNR [dB]	26.4	26.99	26.13	27.11	26.49	26.9	26.98	26.64	27.14	26.8
SINAD [dB]	26.37	26.57	26.64	26.71	26.4	26.6	26.16	26.58	26.44	26.36

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.53	1.53	1.44	1.51	1.51	1.51	1.45	1.46	1.56	1.49
SMPTE IMD [%]	3.8	3.9	3.78	3.89	3.87	3.75	3.9	4.03	3.91	3.98
SNR [dB]	29.4	29.55	29.08	29.28	29.59	29.28	29.52	28.61	29.64	29.3
SINAD [dB]	29	29.06	29.03	29.13	28.99	28.89	28.98	29.11	29.19	29.16

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.26	3.26	3.26	3.31	3.28	3.25	3.27	3.29	3.28	3.25
SMPTE IMD [%]	8.59	8.37	9.21	8.3	8.35	8.82	8.87	9.22	8.57	9.24
SNR [dB]	30.67	30.79	31.04	30.8	30.5	30.61	30.52	30.6	30.51	30.27
SINAD [dB]	27.69	27.79	27.92	27.61	27.75	27.83	27.58	27.78	27.87	27.83

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.01	2.06	2.07	2.07	2.06	2.05	2	2.02	2.05	2.04
SMPTE IMD [%]	5.46	5.14	5.15	5.59	5.08	5.13	5.26	5.2	5.09	5.47
SNR [dB]	32.49	32.23	31.72	31.65	31.78	32.86	32.89	32.23	32.3	32.66
SINAD [dB]	30.93	30.96	30.61	30.82	30.94	30.93	30.75	30.73	30.76	30.87

800 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.41	1.31	1.42	1.3	1.4	1.31	1.29	1.41	1.33	1.35
SMPTE IMD [%]	4.73	4.53	4.74	4.94	4.67	4.72	4.64	4.68	4.58	4.79
SNR [dB]	19.68	17.86	18.46	18.88	20.05	20.26	20.03	19.86	19.87	19.23
SINAD [dB]	20.88	20.9	20.88	20.77	21.04	20.91	20.96	20.95	20.86	21.01

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	0.99	0.91	0.99	0.95	1	0.93	0.96	0.93	1.01	0.89
SMPTE IMD [%]	3.22	3.14	3.29	3.15	3.1	3.2	3.35	3.23	3.5	3.27
SNR [dB]	22.27	22.58	22.79	22.88	22.07	23.09	22.23	22.53	22.55	22.33
SINAD [dB]	23.4	23.44	23.53	23.44	23.42	23.49	23.37	23.52	23.43	23.56

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.23	2.19	2.2	2.18	2.2	2.21	2.24	2.23	2.21	2.24
SMPTE IMD [%]	6.11	6.31	6	6.18	6.17	6.06	5.84	6.26	5.75	6.09
SNR [dB]	26.86	26.92	26.82	27.18	27.09	27.32	26.95	27.18	26.81	26.98
SINAD [dB]	26.61	26.57	26.66	26.57	26.62	26.7	26.65	26.56	26.64	26.65

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.46	1.45	1.44	1.45	1.45	1.43	1.47	1.45	1.46	1.43
SMPTE IMD [%]	3.68	3.74	3.56	3.9	3.54	3.7	3.86	3.76	3.69	3.61
SNR [dB]	28.32	28.24	28.2	28.47	28.48	28.48	28.34	28.52	27.78	28.07
SINAD [dB]	28.46	28.36	28.42	28.43	28.5	28.36	28.44	28.49	28.62	28.39

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.35	3.32	3.38	3.33	3.36	3.35	3.36	3.33	3.33	3.29
SMPTE IMD [%]	8.52	8.75	8.3	9.38	9.41	8.79	8.69	8.75	9.48	9.28
SNR [dB]	28.91	29.64	29.7	29.7	29.18	29.66	29.42	29.54	29.31	29.48
SINAD [dB]	27.06	27.09	27.12	27.13	27.25	27.04	27.05	27.11	27.16	27.14

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.25	2.26	2.24	2.21	2.21	2.24	2.23	2.23	2.22	2.25
SMPTE IMD [%]	5.34	5.26	5.57	5.23	5.6	5.39	5.65	5.1	5.45	5.23
SNR [dB]	29.83	31.44	29.27	31.67	31.88	31.57	31.68	30.98	31.37	31.73
SINAD [dB]	29.91	29.92	29.94	29.97	30.05	30.06	29.91	29.88	30.16	29.91

900 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.43	1.44	1.38	1.41	1.41	1.44	1.26	1.32	1.37	1.41
SMPTE IMD [%]	4.95	4.82	4.99	4.73	5.22	5.16	5.08	4.61	4.79	5.27
SNR [dB]	19.74	19.65	19.41	19.56	19.67	19.44	19.93	18.89	19.81	19.27
SINAD [dB]	20.2	20.23	20.26	20.25	20.15	20.45	20.32	20.2	20.36	20.4

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.04	1.02	1.02	0.98	1.09	0.96	1.03	1.04	1.02	1.03
SMPTE IMD [%]	3.11	3.19	3.43	3.67	3.48	3.28	3.4	3.44	3.37	3.16
SNR [dB]	21.89	21.23	21.82	21.72	21.03	21.71	21.35	21.04	21.71	21.42
SINAD [dB]	22.24	22.2	22.3	22.07	22.18	22.29	22.23	22.35	22.48	22.25

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.36	2.35	2.32	2.31	2.27	2.33	2.33	2.23	2.37	2.32
SMPTE IMD [%]	6.07	6.57	6.34	6.31	5.88	6.27	6.29	6.11	6.08	6.3
SNR [dB]	25.06	25.07	25.24	24.7	24.46	24.45	24.84	25.06	24.73	24.67
SINAD [dB]	24.66	24.77	24.75	24.75	24.63	24.7	24.97	24.86	24.96	24.99

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.46	1.46	1.45	1.45	1.48	1.54	1.46	1.47	1.49	1.4
SMPTE IMD [%]	4.07	4.05	4.06	4.2	4.32	4.09	4.12	3.95	4.26	3.91
SNR [dB]	26.55	27.38	27.81	27.96	27.12	27.39	26.13	26.77	27.13	27.38
SINAD [dB]	27.86	27.77	27.87	27.94	27.95	27.76	27.96	27.89	28.11	28.17

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.34	3.34	3.33	3.32	3.28	3.3	3.32	3.31	3.28	3.36
SMPTE IMD [%]	8.92	8.38	9.24	9.4	8.31	8.75	8.08	9.1	8.16	8.95
SNR [dB]	28.4	28.87	27.52	27.65	29	28.69	28.89	28.57	29	28.98
SINAD [dB]	26.72	26.59	26.73	26.86	26.93	26.64	26.89	26.72	26.96	26.77

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.25	2.21	2.22	2.26	2.26	2.21	2.23	2.27	2.22	2.22
SMPTE IMD [%]	5.09	5.02	5.26	5.42	5.22	5.37	5.05	5.3	5.46	5.07
SNR [dB]	31.51	31.43	30.29	31.19	30.79	30.93	30.58	31.25	30.44	31.25
SINAD [dB]	29.97	29.91	29.72	29.83	29.88	29.87	29.81	29.74	29.8	29.89

1000 Lux

V = 5 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.35	1.43	1.38	1.33	1.24	1.58	1.61	1.49	1.51	1.41
SMPTE IMD [%]	5.04	4.96	5.24	5.08	5.01	4.9	5.17	5.13	5.27	5.25
SNR [dB]	19.15	18.99	18.86	17.36	18.61	17.78	18.16	18.37	19.07	19.06
SINAD [dB]	19.7	19.52	19.61	19.63	19.55	19.59	19.53	19.45	19.57	19.6

V = 5 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.03	1.05	0.97	0.89	1.04	0.91	1.02	0.98	0.98	0.9
SMPTE IMD [%]	3.83	3.59	3.47	3.89	3.48	3.61	3.82	3.69	3.22	3.75
SNR [dB]	21.13	21.81	21.59	20.66	20.37	21.56	21.44	20.86	21.08	20.97
SINAD [dB]	21.96	22.1	22.11	22.19	22.19	22.16	22.12	22.11	22.04	22.13

V = 10 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.35	2.25	2.26	2.25	2.28	2.19	2.26	2.16	2.13	2.28
SMPTE IMD [%]	6.01	6.27	6.03	5.96	6.17	5.84	6.14	5.95	6.23	6.17
SNR [dB]	24.6	24.7	24.38	23.07	24.08	23.86	24.7	24.46	24.49	24.2
SINAD [dB]	24.84	24.83	24.94	24.88	24.77	24.83	24.75	24.8	24.89	24.88

V = 10 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	1.41	1.39	1.39	1.43	1.44	1.44	1.39	1.47	1.47	1.47
SMPTE IMD [%]	3.65	3.7	3.56	3.74	3.73	3.9	3.66	3.62	3.62	3.68
SNR [dB]	26.33	27.34	25.71	27.15	26.48	27.29	27.19	27.58	26.01	26
SINAD [dB]	27.81	27.95	27.96	27.94	27.85	27.73	27.69	27.8	27.73	27.77

V = 15 mVp DC Offset = 2.26 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	3.26	3.24	3.15	3.27	3.31	3.25	3.23	3.28	3.22	3.19
SMPTE IMD [%]	8.09	8.06	8.97	8.21	8.53	9.03	8.55	8.47	9.07	8.45
SNR [dB]	26.75	27.66	28.35	28.81	28.92	28.44	29	28.69	29.1	28.16
SINAD [dB]	26.77	26.67	26.87	26.57	26.7	26.94	26.86	26.83	26.76	26.59

V = 15 mVp DC Offset = 2.30 V	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
THD [%]	2.13	2.12	2.11	2.12	2.16	2.13	2.1	2.13	2.13	2.09
SMPTE IMD [%]	5.15	5.04	5.19	5.03	4.93	4.85	5.24	5.06	5	5.03
SNR [dB]	30.65	30.59	30.51	29.95	30.77	30.52	30.08	30.73	30.12	29.77
SINAD [dB]	29.41	29.61	29.45	29.43	29.49	29.39	29.17	29.18	29.34	29.35