



HURACÁN WASH

NOISE MEASUREMENTS

AYRTON

1 Inspection instructions

This test was carried out in the semi-silencing room of Guangzhou Quality Supervision and Testing Institute (GQT). The indoor environmental noise was less than 5dB (A). The stage lamp was placed on the standard test table of the semi-silencing room.

When the stage lamp was turned on, the test microphone was 1m away from the four directions of the stage lamp to detect its sound pressure level.

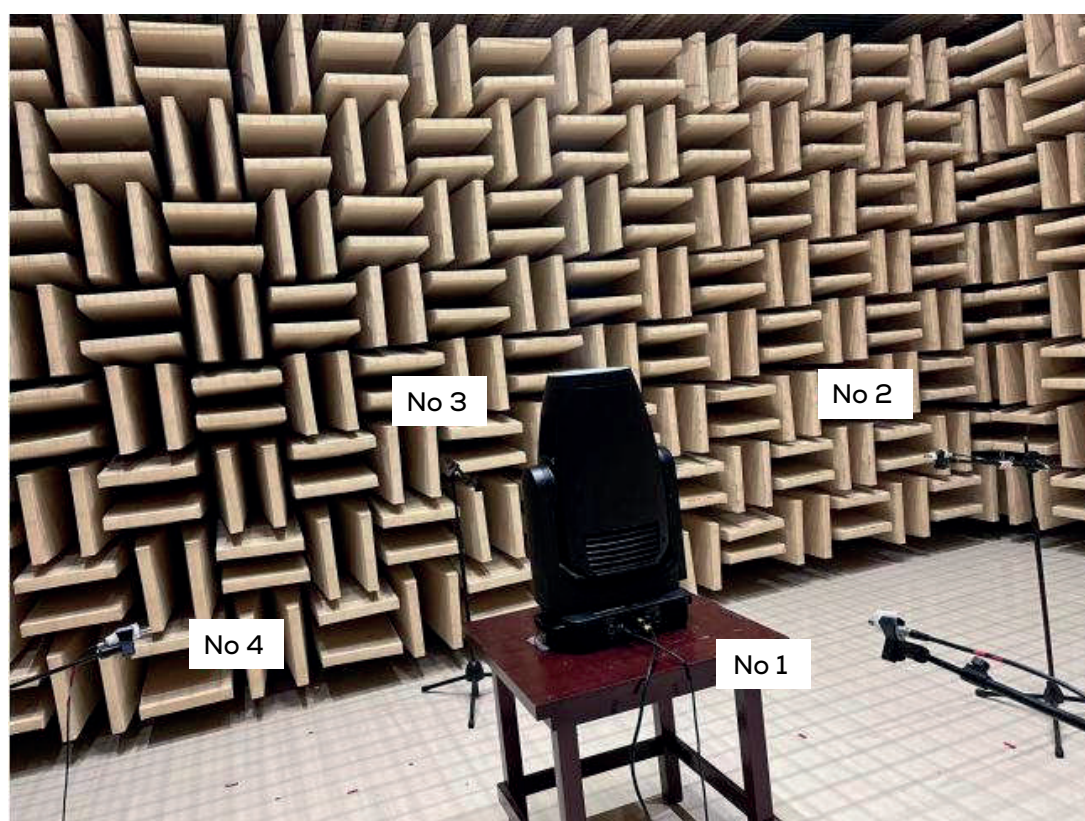


Figure 1 Test setup



Figure 2 Sample serial number information

2 Noise Detection Results of Stage Luminaires (The Auto mode)

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
63	17.27	23.79	20.26	20.23	18.07	18.80	19.38	19.83
80	17.72	22.63	19.00	20.15	21.82	22.36	21.62	22.57
100	20.95	24.32	22.98	23.01	25.93	28.19	27.03	26.65
125	18.49	23.61	17.74	23.19	28.55	31.32	30.34	30.97
160	28.76	32.59	27.44	30.82	35.05	36.49	34.33	36.84
200	29.49	33.80	29.29	33.50	39.82	42.61	39.96	42.18
250	33.80	37.06	35.09	38.65	40.51	41.57	40.65	41.04
315	33.83	38.78	36.20	40.55	41.23	41.15	41.82	41.33
400	33.35	36.45	32.92	36.59	42.56	43.82	43.47	44.28
500	40.36	39.97	39.67	40.15	39.19	39.45	38.89	40.22
630	39.46	39.33	39.63	38.33	37.20	37.34	37.40	37.36
800	33.33	34.29	32.95	32.15	36.34	35.99	35.47	36.58
1000	32.44	30.54	32.43	31.44	34.12	34.27	34.16	35.24
1250	28.65	33.42	29.48	33.84	31.45	32.31	30.90	32.30
1600	27.59	35.26	27.54	34.75	31.81	32.67	32.22	32.73
2000	28.44	32.11	28.27	32.30	30.38	31.10	30.57	31.06
2500	27.07	26.56	25.58	27.48	29.16	28.87	28.20	28.60
3150	22.58	23.49	21.50	27.27	27.65	26.88	25.84	26.23
4000	19.70	22.01	19.28	23.86	25.67	25.88	24.39	25.75
5000	22.81	20.47	19.85	23.57	24.72	24.11	23.03	26.34
6300	14.36	15.81	13.39	18.84	20.07	19.58	19.99	21.05
8000	11.63	13.56	10.93	19.31	16.64	16.28	16.12	17.31
10000	10.04	12.54	9.58	15.76	17.15	17.16	15.85	15.99
12500	11.82	13.78	11.05	19.06	21.34	20.62	19.24	19.73
16000	17.49	17.08	16.19	21.57	23.44	23.10	22.86	23.59
20000	37.94	36.67	36.46	39.23	43.35	43.30	43.09	43.70

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	46.5	52.6	46.5	48.4	50.4	51.1	50.6	51.3
A-weighted dB(A)	43.2	44.5	43.0	44.7	45.5	46.0	45.5	46.3
Average sound pressure level dB(A)	43.8				45.8			

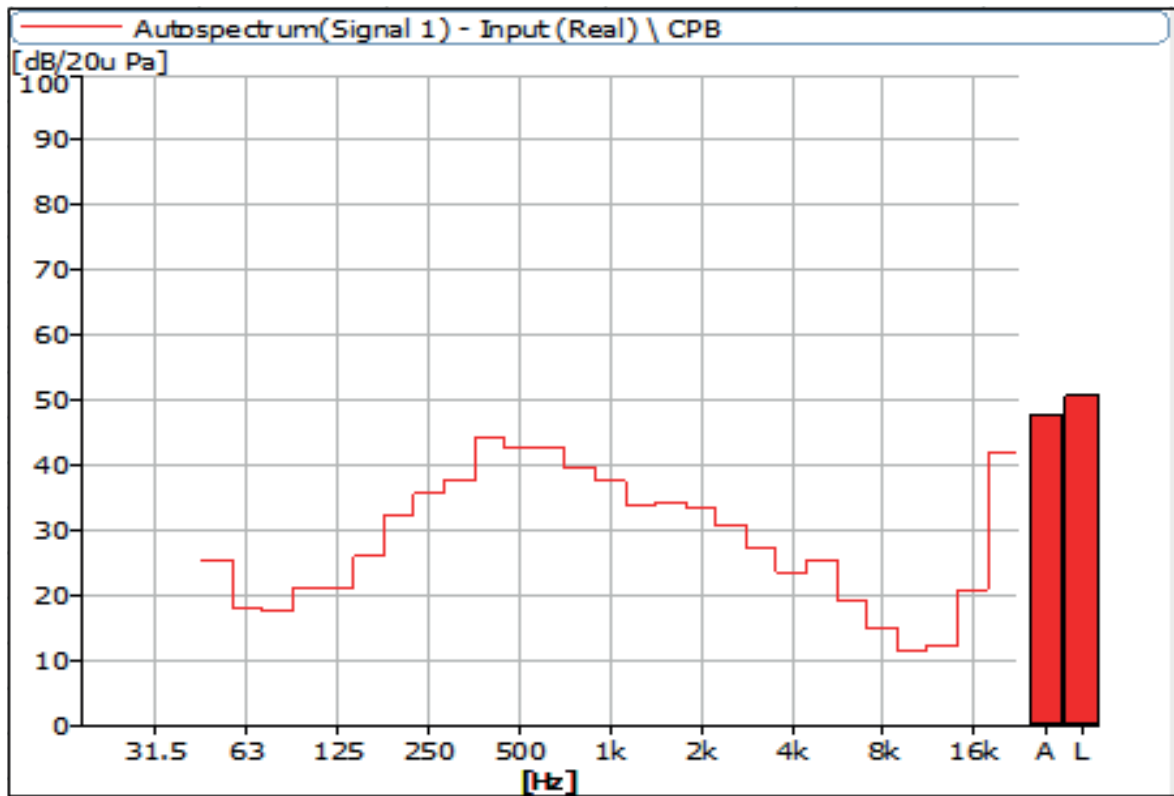


Figure 3 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 1)

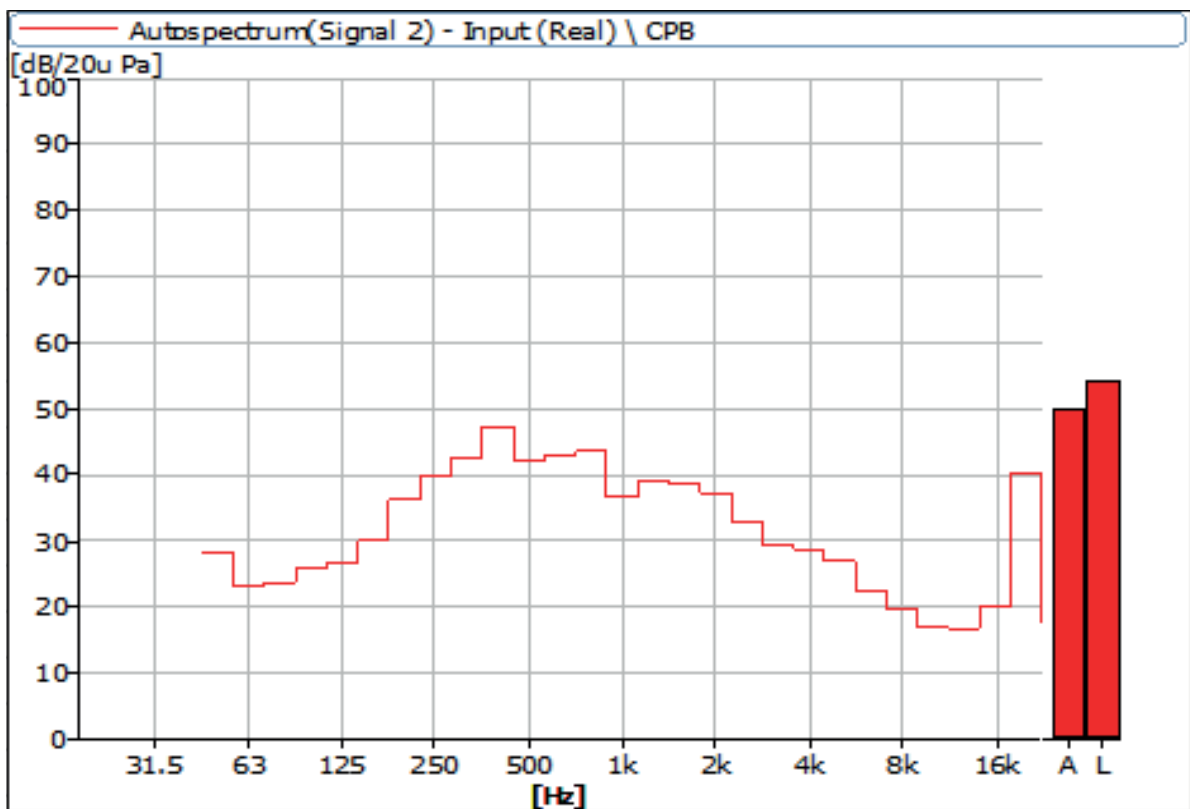


Figure 4 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 2)

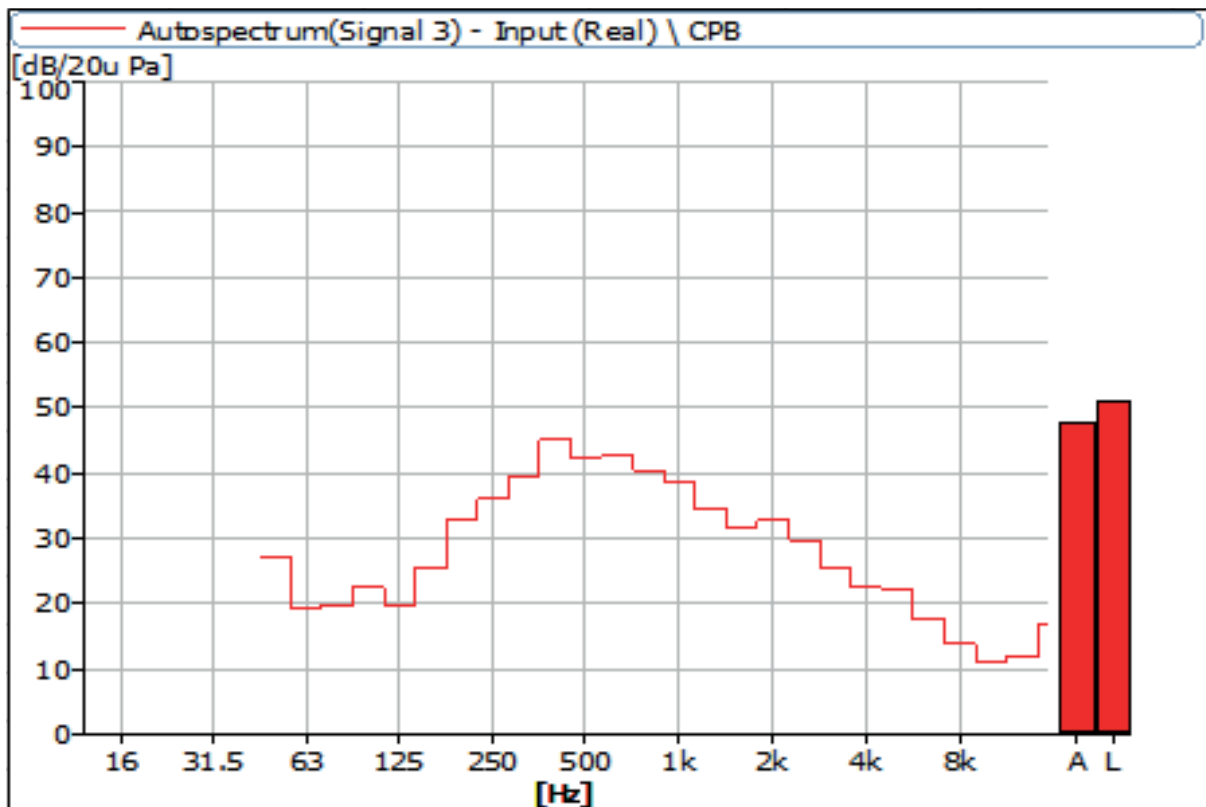


Figure 5 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 3)

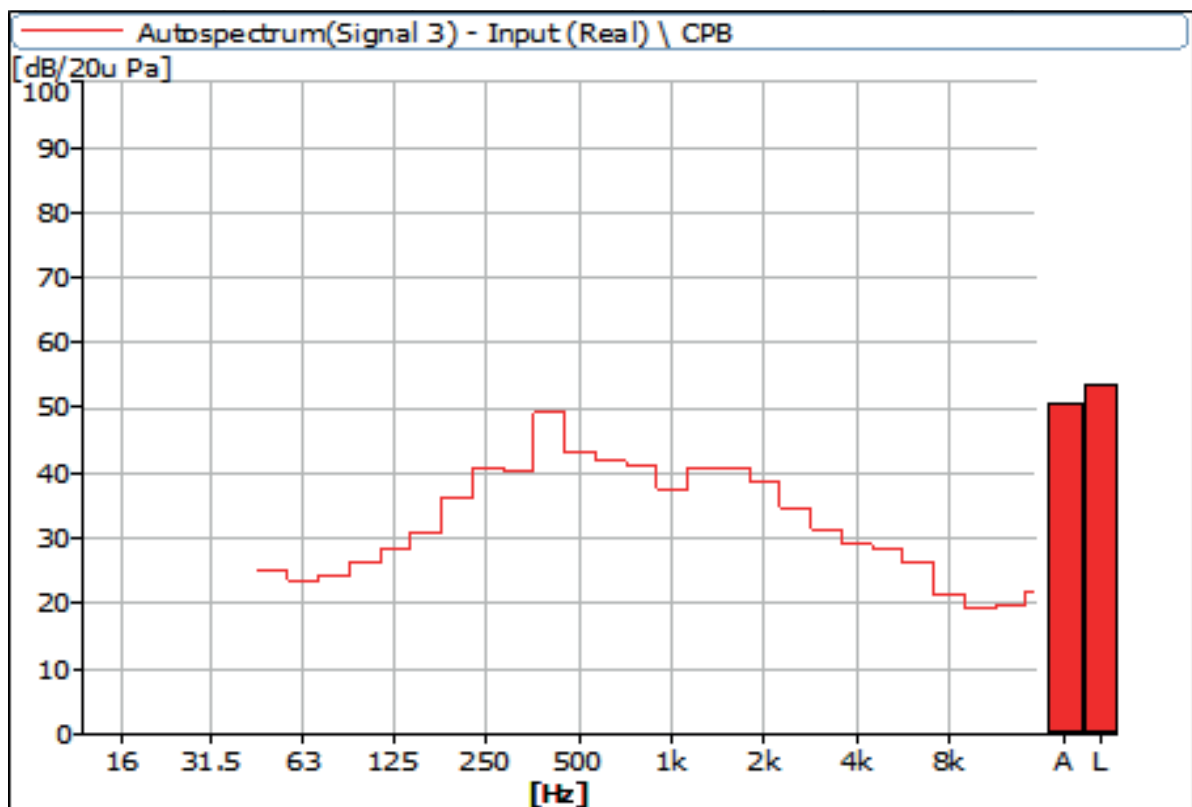


Figure 6 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 4)

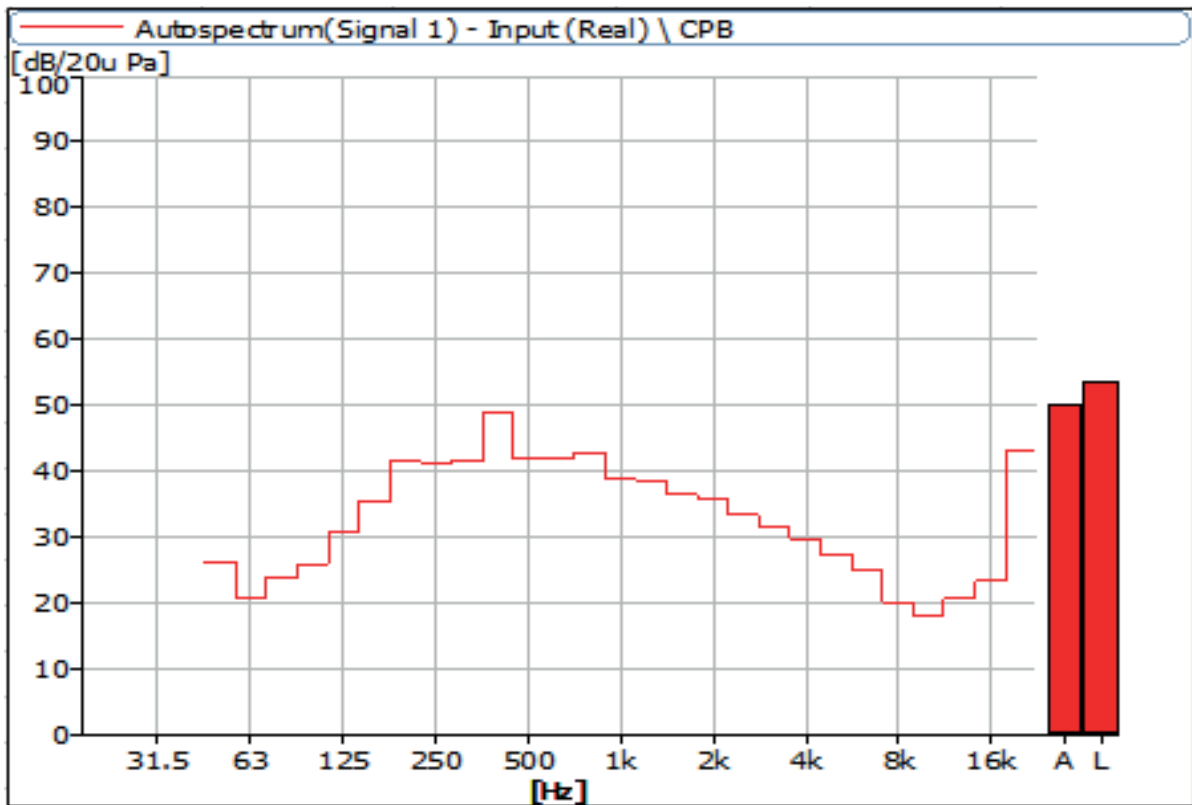


Figure 7 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 1)

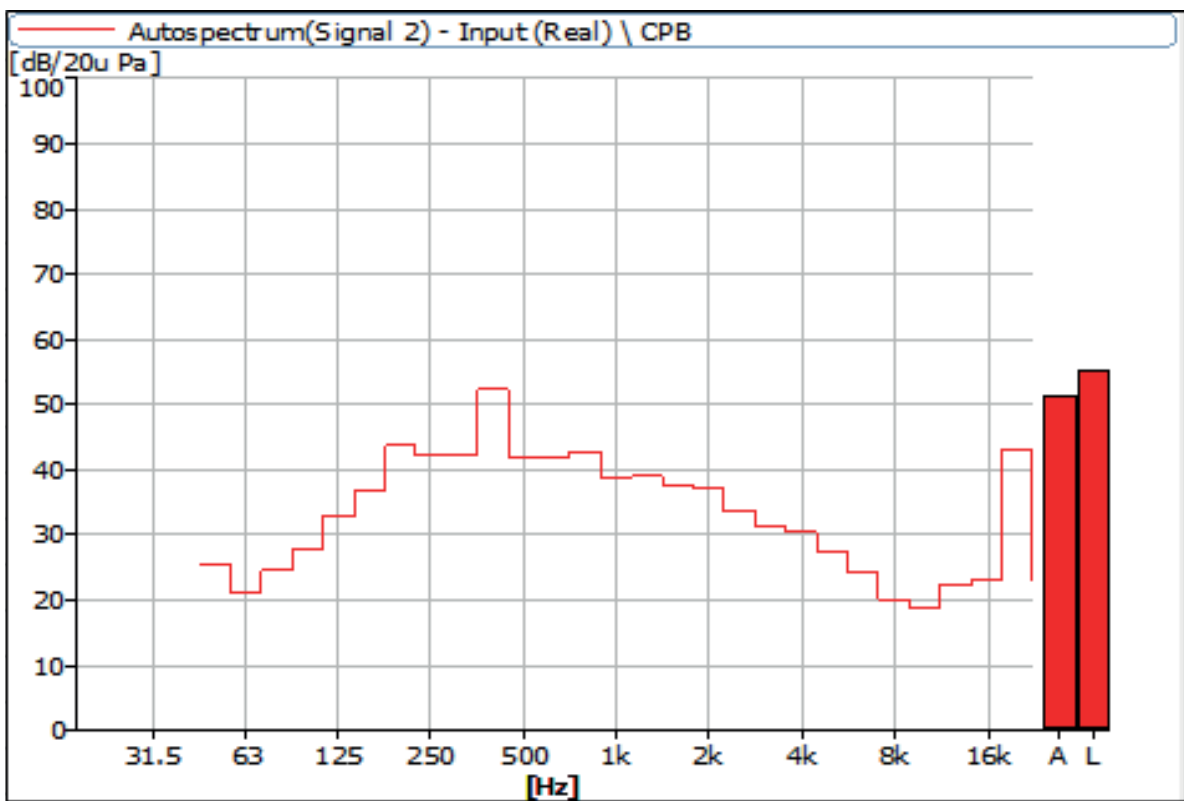


Figure 8 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 2)

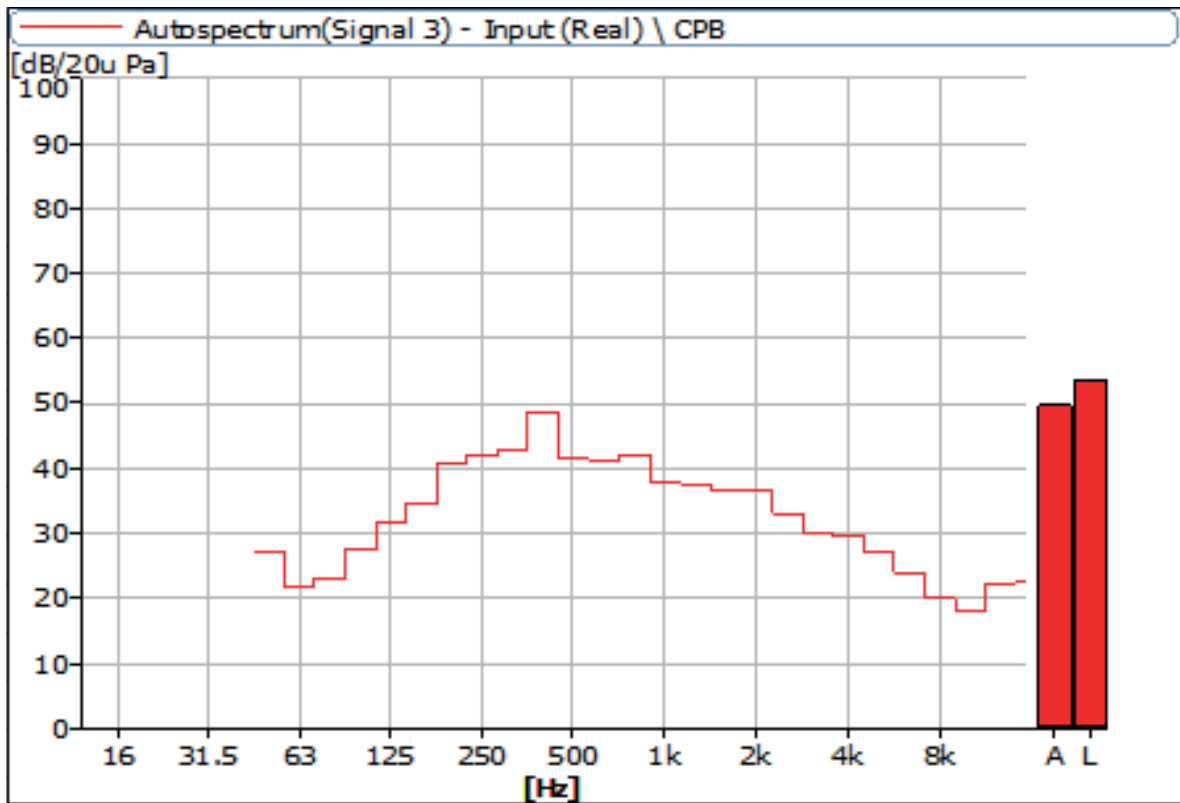


Figure 9 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 3)



Figure 10 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 4)

3 Noise Detection Results of Stage Luminaires (The Stage mode)

Frequency (Hz)	Sound Pressure Level in Stage Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
63	18.02	23.32	19.39	23.56	20.90	21.32	21.90	21.70
80	17.70	23.74	19.69	24.25	23.89	24.63	23.12	23.84
100	21.12	25.80	22.39	26.18	25.97	27.84	27.58	26.56
125	21.00	26.49	19.80	28.38	30.63	32.89	31.76	33.27
160	26.05	30.05	25.49	31.04	35.36	36.78	34.68	37.37
200	32.51	36.29	32.77	36.35	41.55	43.68	40.98	43.69
250	35.77	39.79	35.96	40.97	41.31	42.16	42.14	42.08
315	37.72	42.43	39.38	40.40	41.60	42.16	42.74	41.35
400	44.23	47.20	45.12	49.35	48.97	52.28	48.72	51.52
500	42.79	42.13	42.34	43.29	41.97	42.08	41.54	42.92
630	42.77	43.09	42.77	41.90	41.84	41.95	41.41	41.89
800	39.63	43.56	40.41	41.08	42.83	42.82	42.15	42.39
1000	37.57	36.70	38.47	37.55	38.72	38.59	38.04	38.99
1250	34.03	39.05	34.43	41.00	38.42	38.98	37.59	38.97
1600	34.21	38.83	31.46	40.88	36.44	37.59	36.52	37.67
2000	33.34	37.32	32.79	38.54	35.89	37.09	36.84	37.03
2500	30.74	32.81	29.74	34.77	33.33	33.63	33.17	33.82
3150	27.29	29.27	25.42	31.48	31.71	31.18	30.19	30.66
4000	23.52	28.80	22.40	29.09	29.68	30.43	29.63	29.43
5000	25.44	26.97	21.96	28.32	27.29	27.48	27.12	28.85
6300	19.33	22.24	17.58	26.44	24.86	24.27	23.97	25.32
8000	14.99	19.91	13.86	21.54	20.20	20.08	20.12	20.21
10000	11.54	16.86	11.18	19.19	18.12	18.89	18.04	18.54
12500	12.41	16.76	11.85	19.81	20.78	22.39	22.38	19.50
16000	20.88	19.95	16.77	21.97	23.30	23.27	22.60	23.55
20000	42.04	40.33	37.07	39.60	43.01	43.25	42.16	43.34

Frequency (Hz)	Sound Pressure Level in Stage Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	50.8	54.1	50.8	53.5	53.6	55.3	53.4	55.0
A-weighted dB(A)	47.7	49.9	47.7	50.7	50.0	51.4	49.7	51.1
Average sound pressure level dB(A)	49.0				50.6			

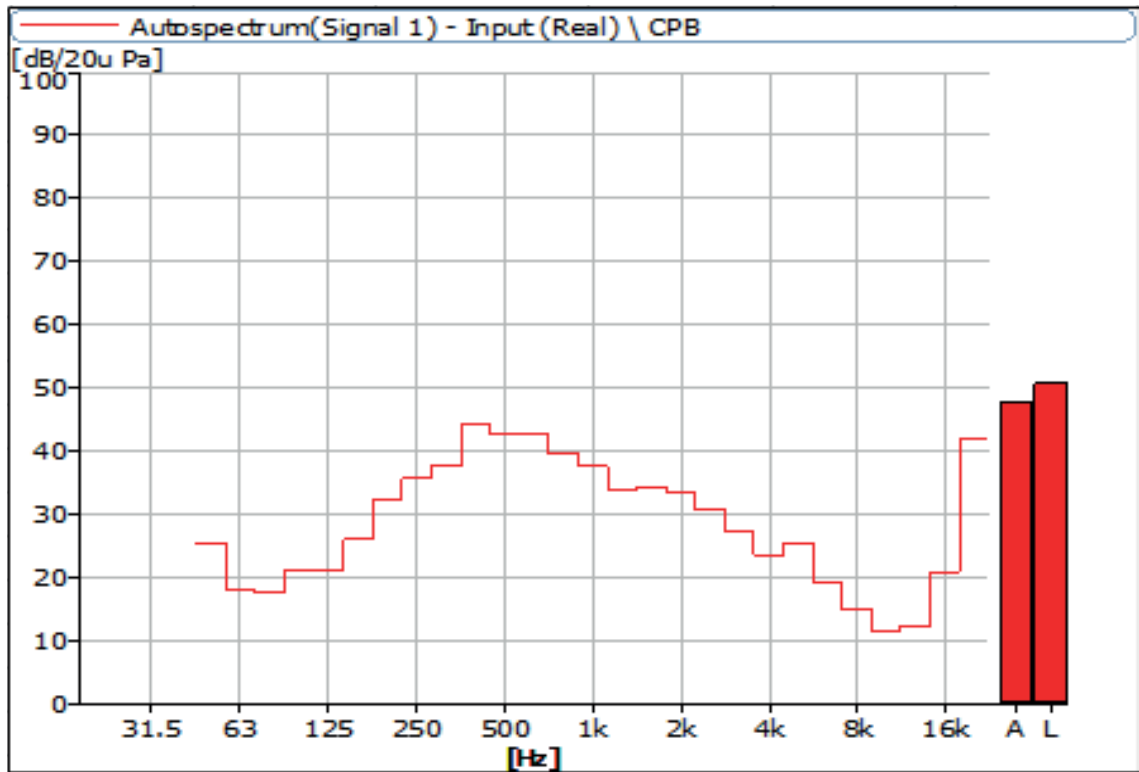


Figure 11 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 1)

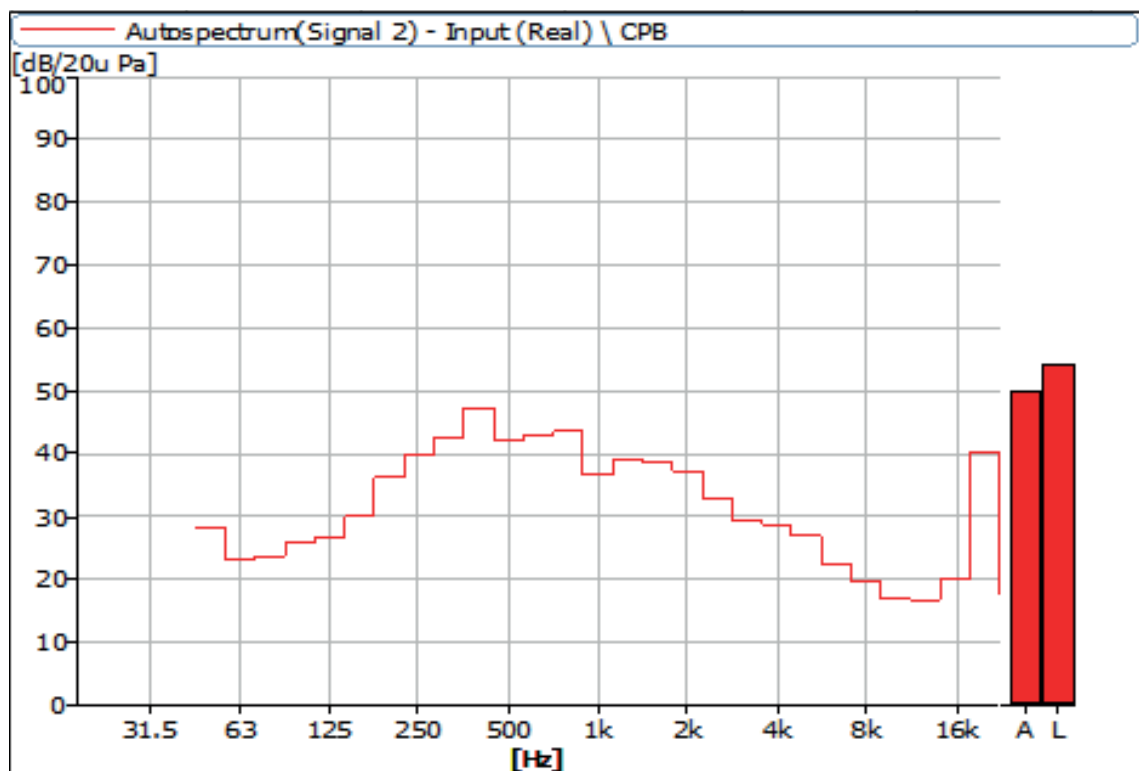


Figure 12 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 2)

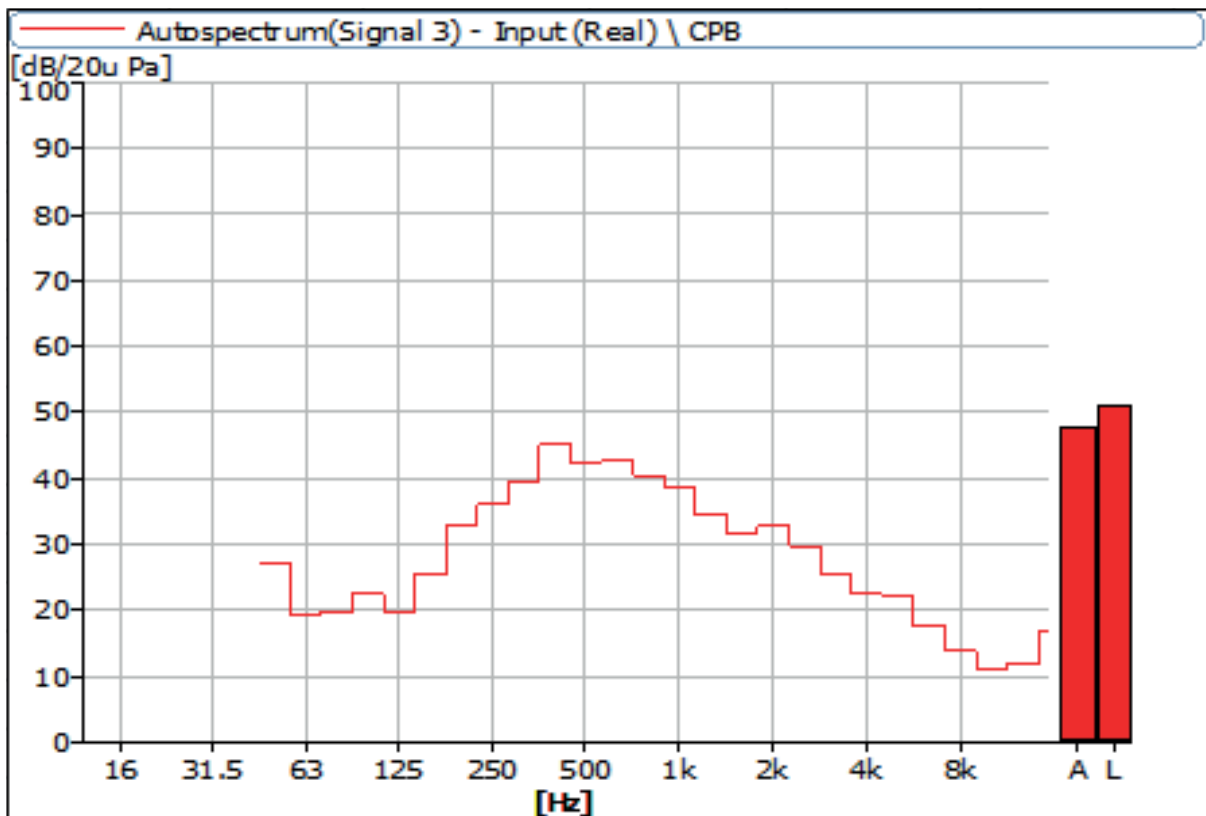


Figure 13 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 3)

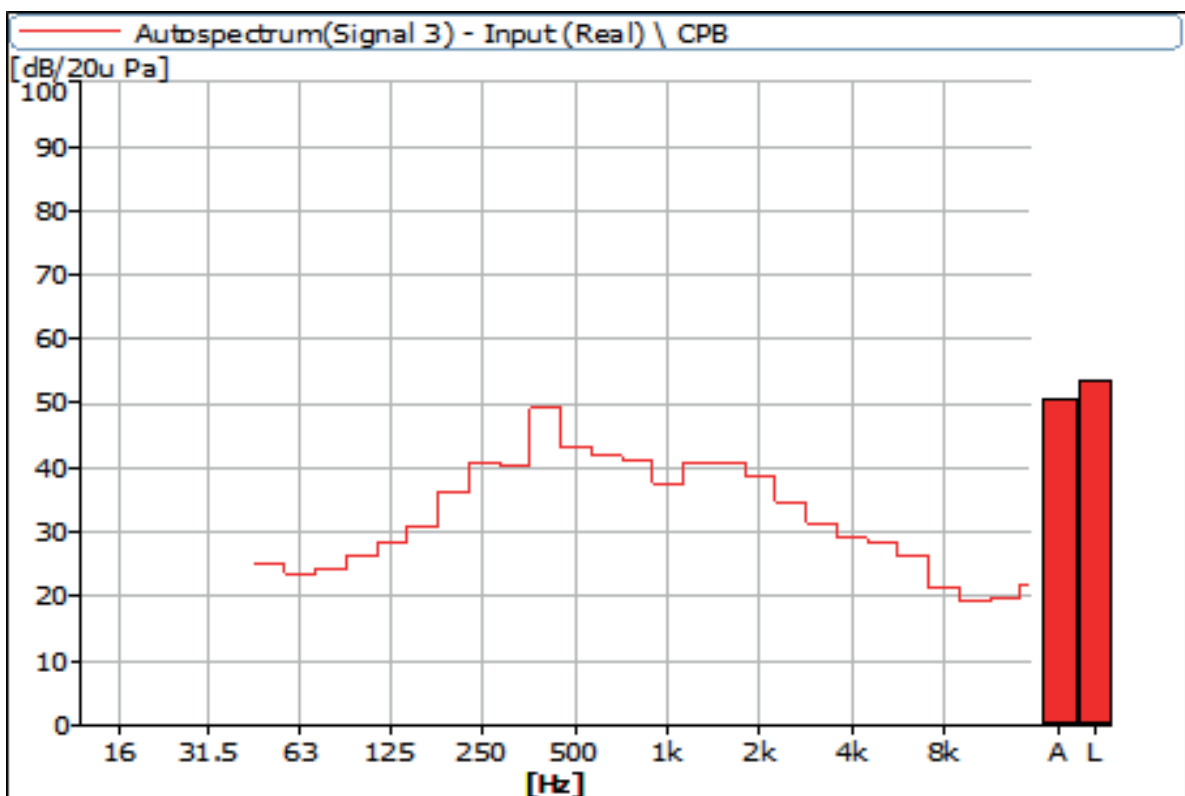


Figure 14 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 4)

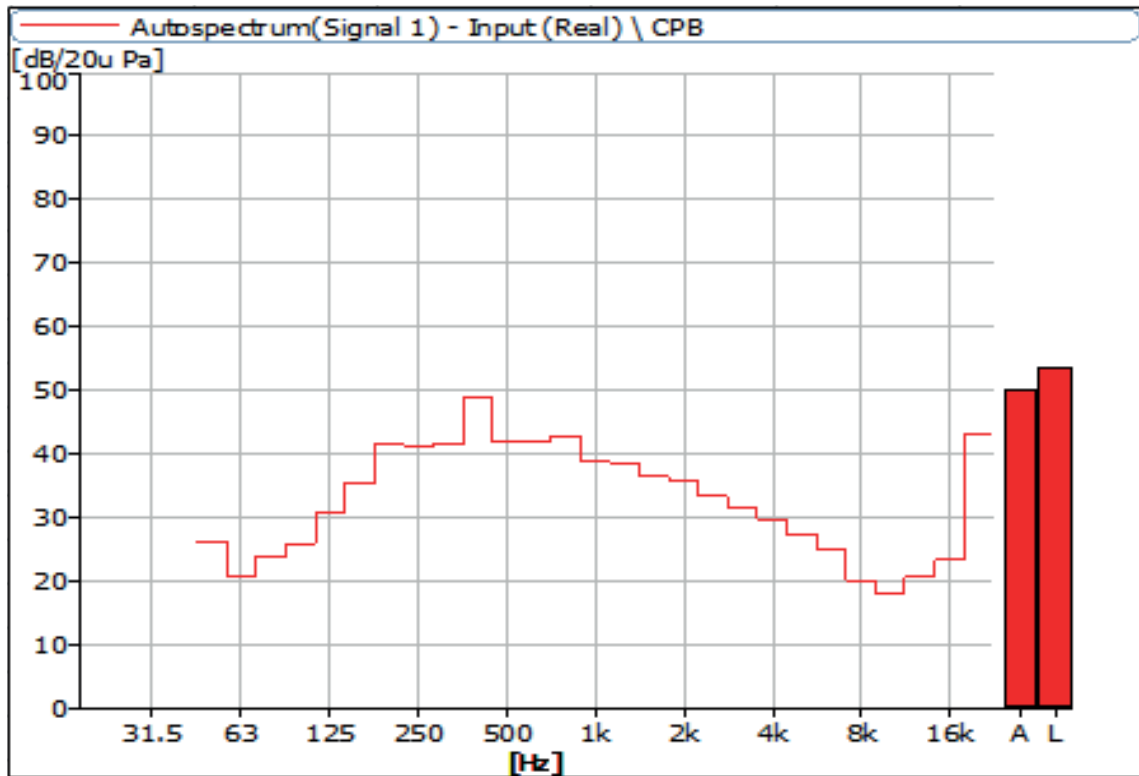


Figure 15 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 1)

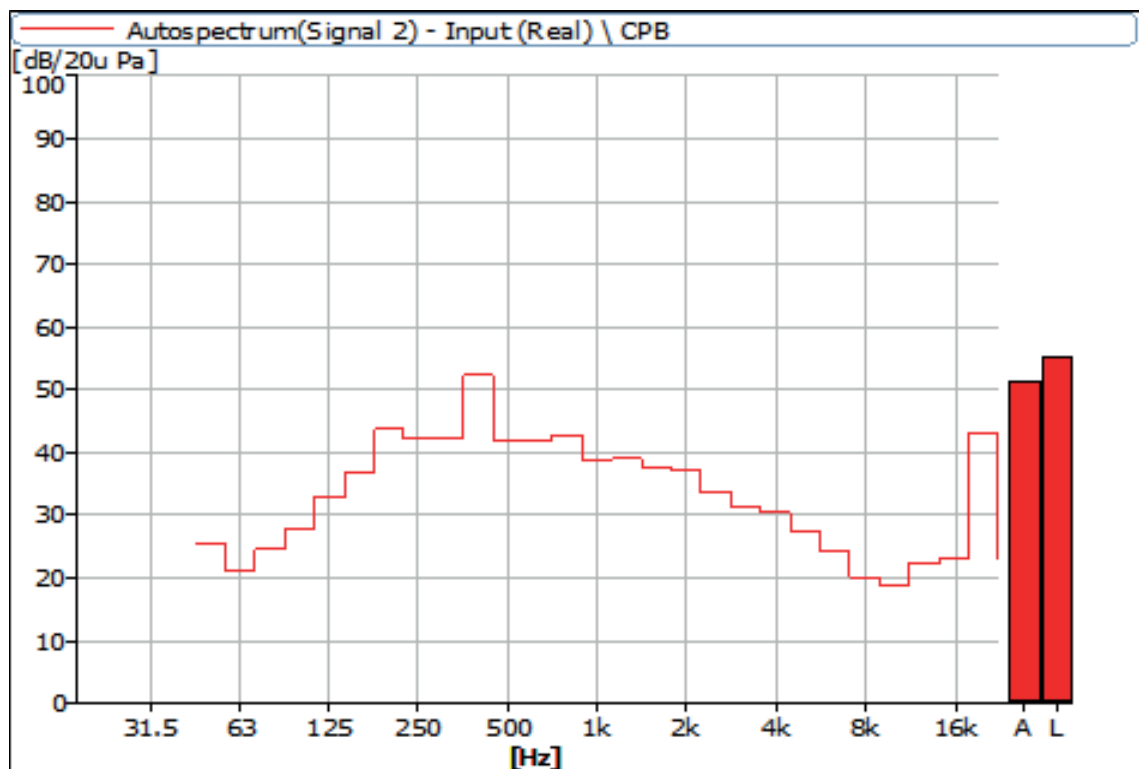


Figure 16 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 2)

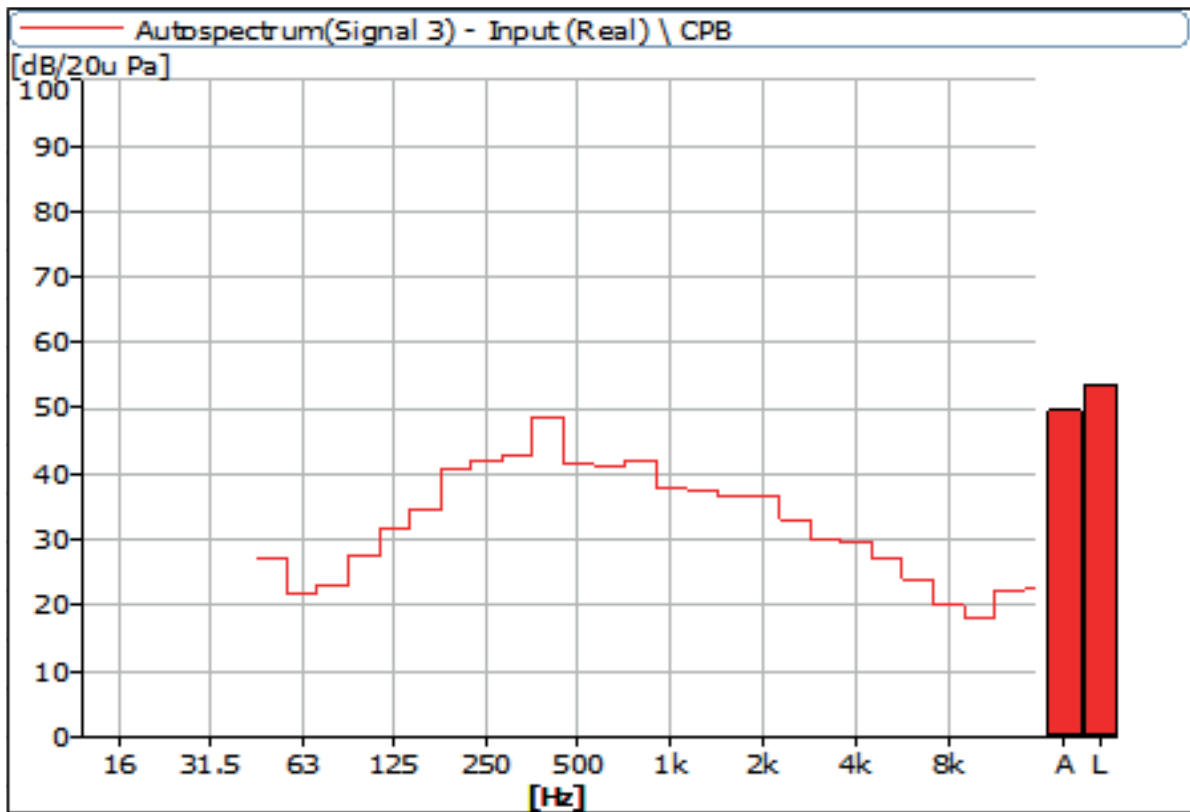


Figure 17 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 3)

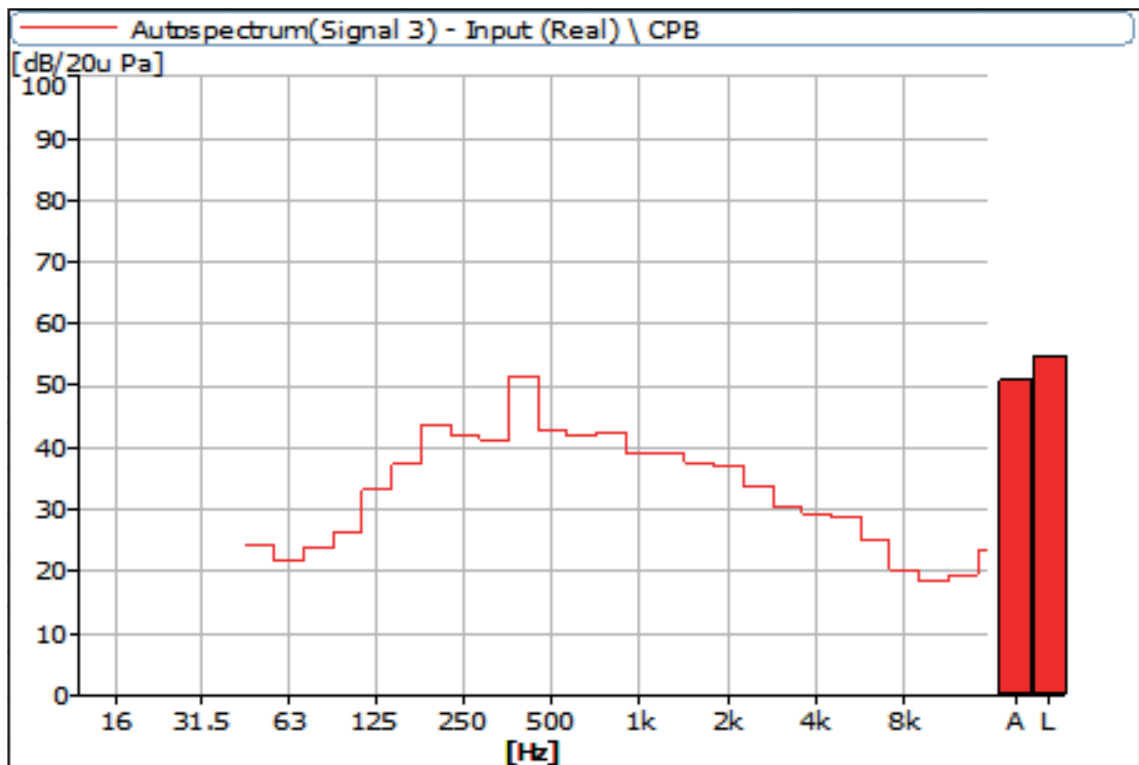


Figure 18 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 4)

4 Noise Detection Results of Stage Luminaires (The Silence mode)

Frequency (Hz)	Sound Pressure Level in Silence Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
63	14.79	16.73	17.92	16.67	16.97	18.18	19.26	18.42
80	15.17	17.95	17.55	17.47	22.31	22.46	21.28	22.37
100	20.63	25.32	22.29	21.77	25.57	27.30	26.74	26.88
125	13.92	19.61	14.07	19.34	29.38	31.73	30.47	31.72
160	20.93	24.29	20.77	27.29	35.20	36.41	34.83	36.92
200	25.99	29.52	26.43	28.31	43.32	45.50	41.90	44.61
250	25.59	27.73	25.61	27.57	40.71	41.86	40.52	40.73
315	25.22	26.74	25.78	27.40	40.09	40.17	40.72	39.33
400	24.90	27.96	24.76	27.79	43.96	46.42	44.48	45.43
500	30.20	31.92	30.41	31.97	36.28	37.27	35.90	38.69
630	25.54	26.94	25.97	26.08	29.23	30.49	28.99	30.92
800	21.44	21.95	21.44	21.40	34.74	32.71	33.76	32.92
1000	24.55	22.45	24.04	22.65	31.10	30.73	31.52	31.96
1250	23.87	30.19	23.09	26.78	29.61	31.48	31.13	30.63
1600	20.80	29.13	21.71	25.60	27.48	28.77	26.94	28.28
2000	20.00	27.58	21.18	22.04	27.28	27.49	26.11	27.26
2500	22.48	24.67	27.83	20.49	27.71	27.99	26.33	27.62
3150	17.61	17.20	16.13	19.05	26.81	25.36	23.96	24.60
4000	14.64	13.77	13.68	13.63	23.57	24.57	21.56	21.29
5000	14.54	13.05	12.64	14.09	21.05	22.01	20.91	22.38
6300	11.50	11.01	10.49	11.67	18.69	18.99	18.01	20.81
8000	9.17	11.29	9.18	10.77	15.07	15.00	13.82	16.32
10000	9.58	12.35	9.05	13.19	14.96	15.90	15.48	16.53
12500	10.37	12.93	10.40	16.33	19.68	20.90	20.99	19.21
16000	18.75	19.15	17.34	19.51	22.50	23.15	22.75	23.24
20000	39.88	39.92	38.21	36.54	42.51	43.46	42.84	43.33

Frequency (Hz)	Sound Pressure Level in Silence Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	42.4	43.5	42.5	42.1	50.3	51.8	50.4	51.3
A-weighted dB(A)	35.7	38.4	35.8	36.0	44.4	45.6	44.3	45.2
Average sound pressure level dB(A)	36.5				44.9			

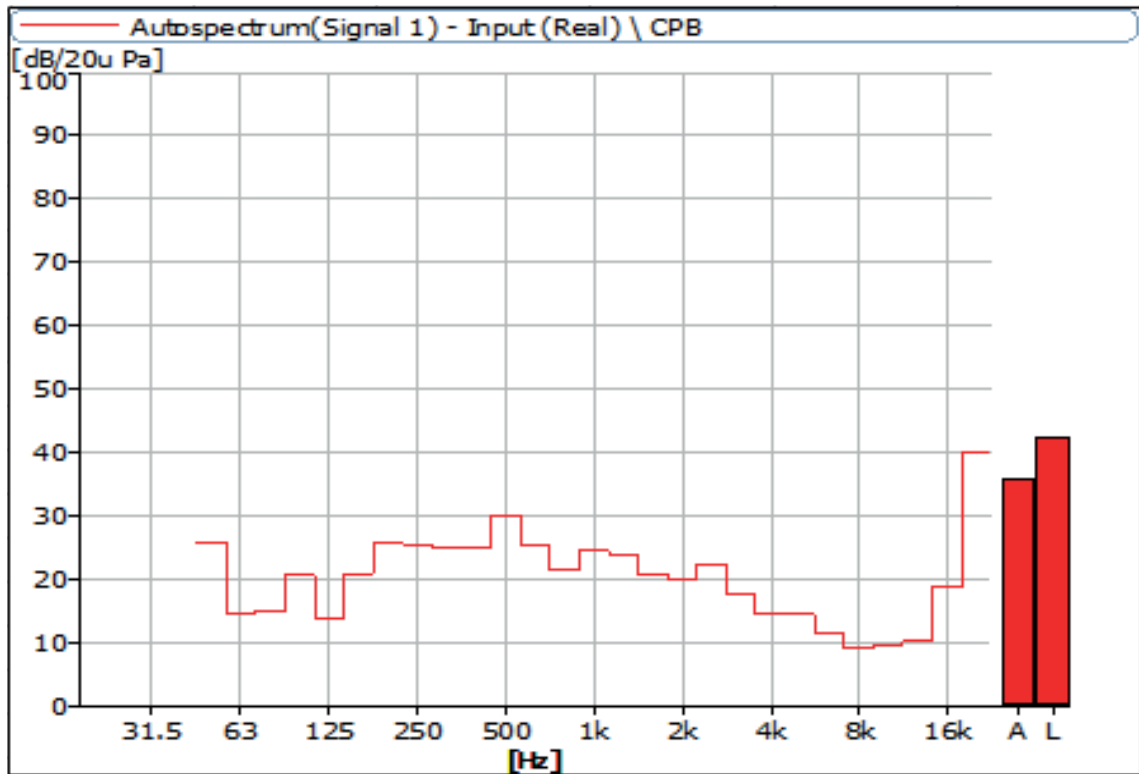


Figure 19 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 1)

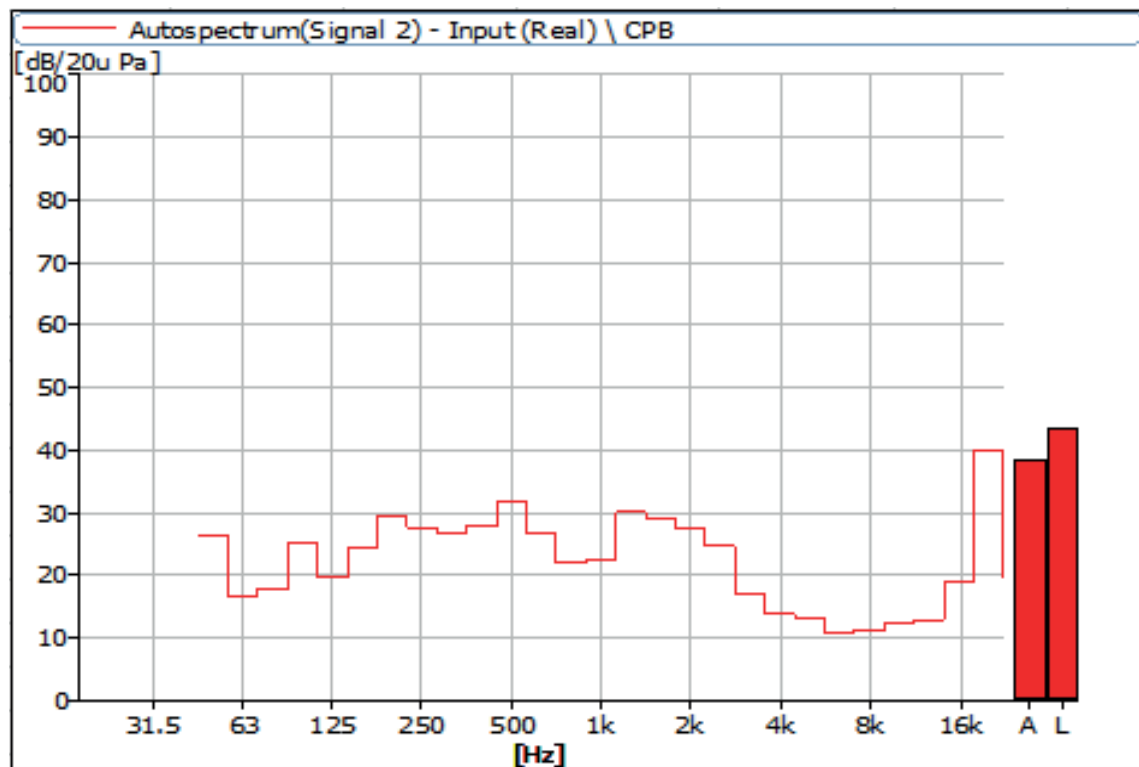


Figure 20 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 2)

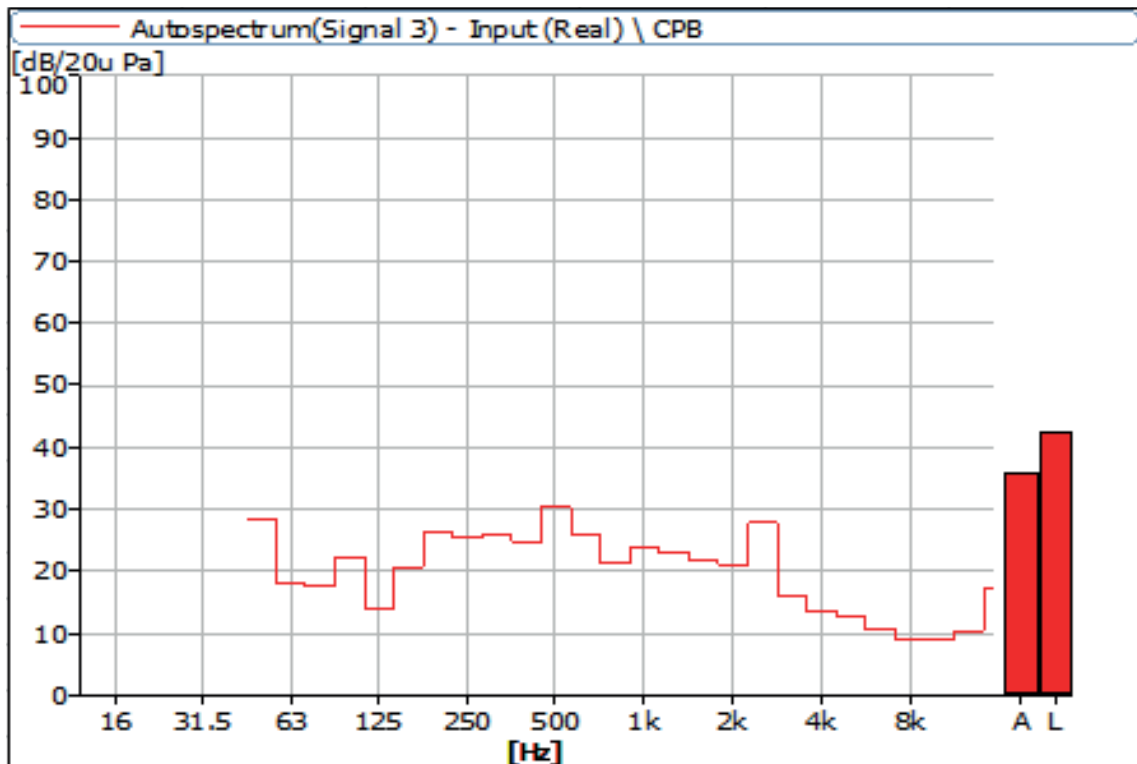


Figure 21 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 3)

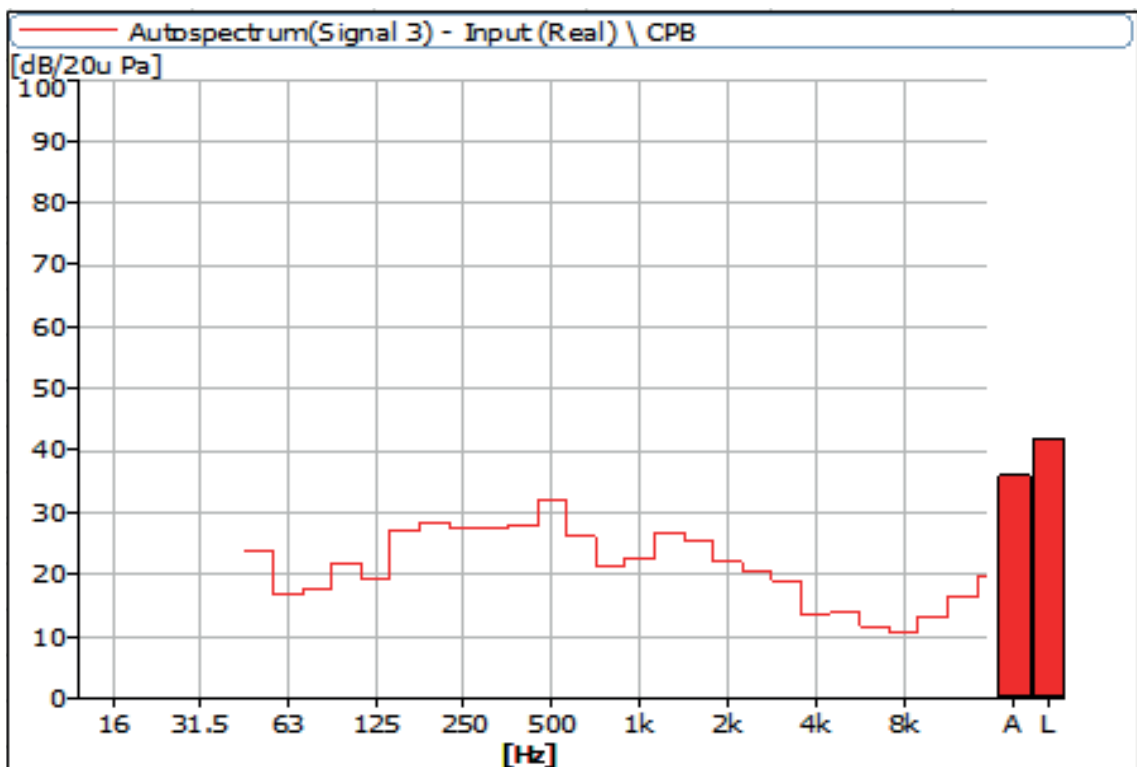


Figure 22 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 4)

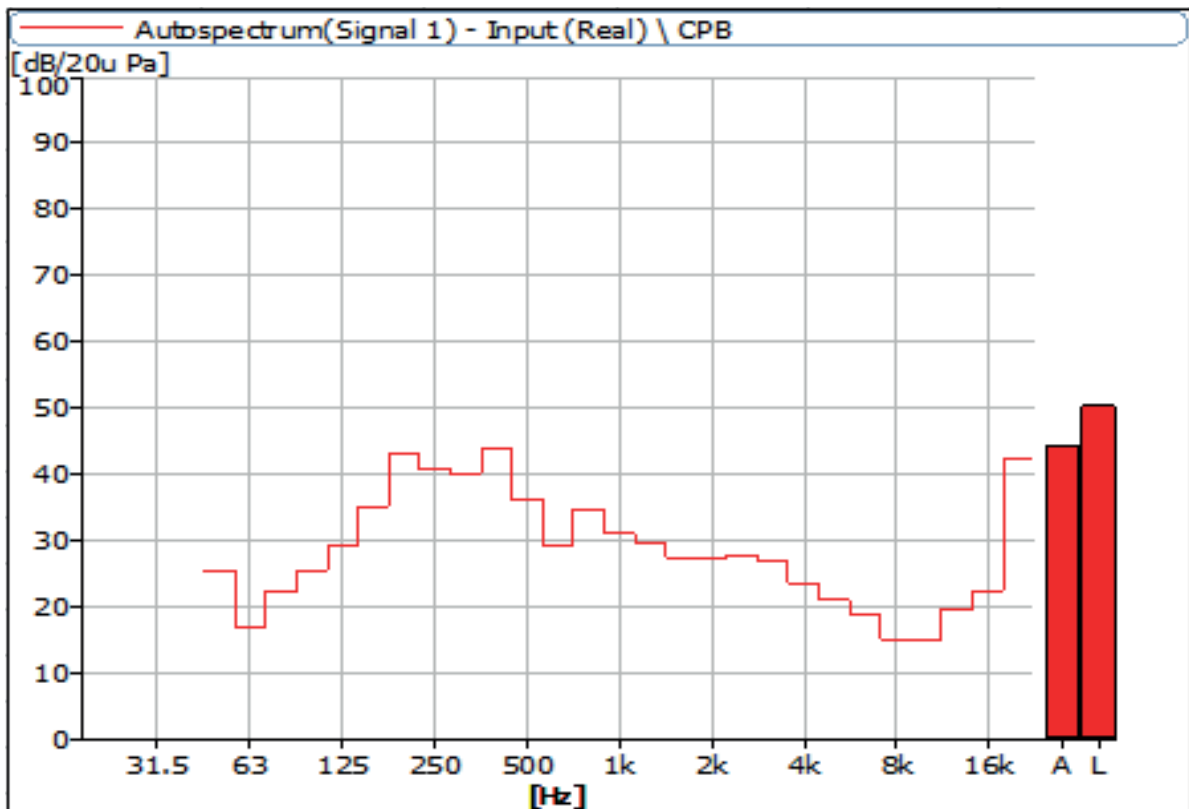


Figure 23 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 1)

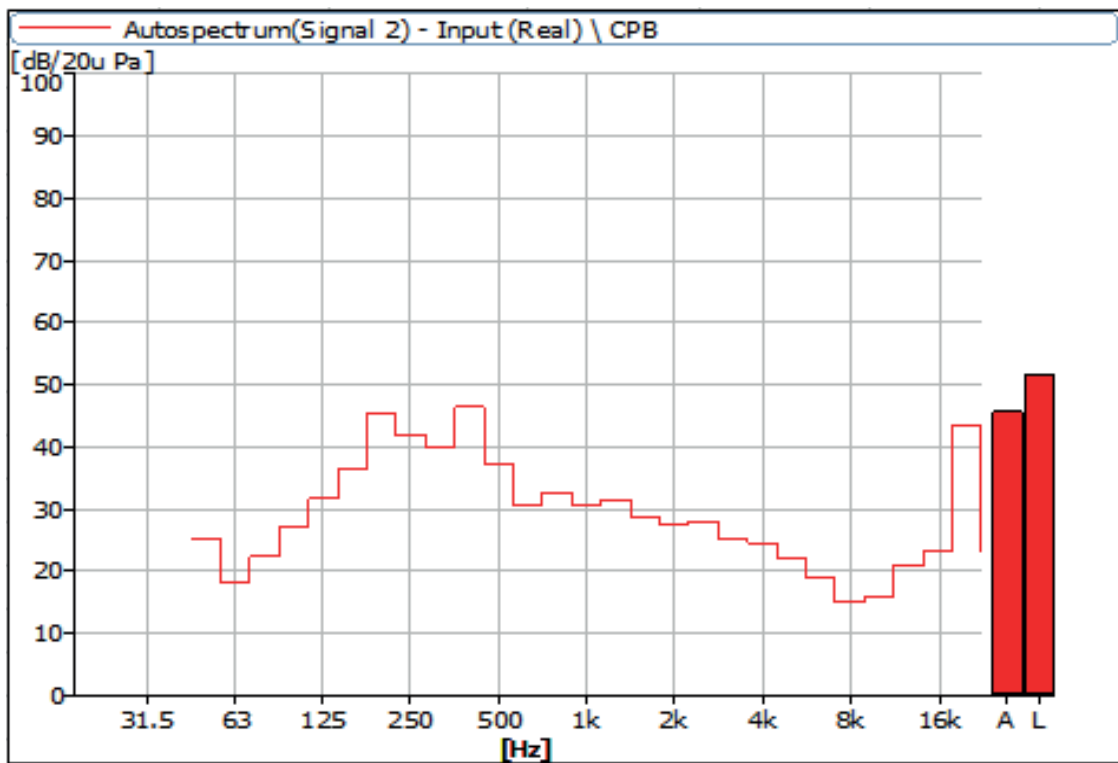


Figure 24 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 2)

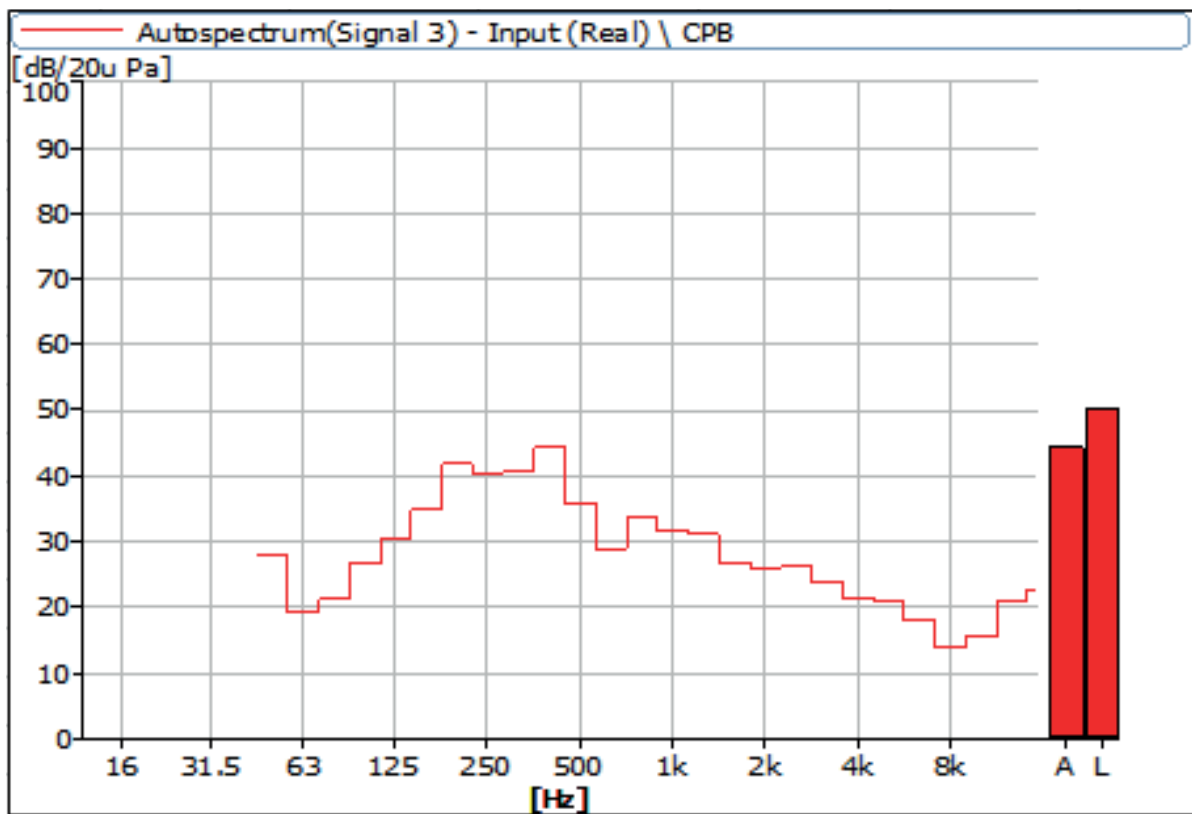


Figure 25 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 3)

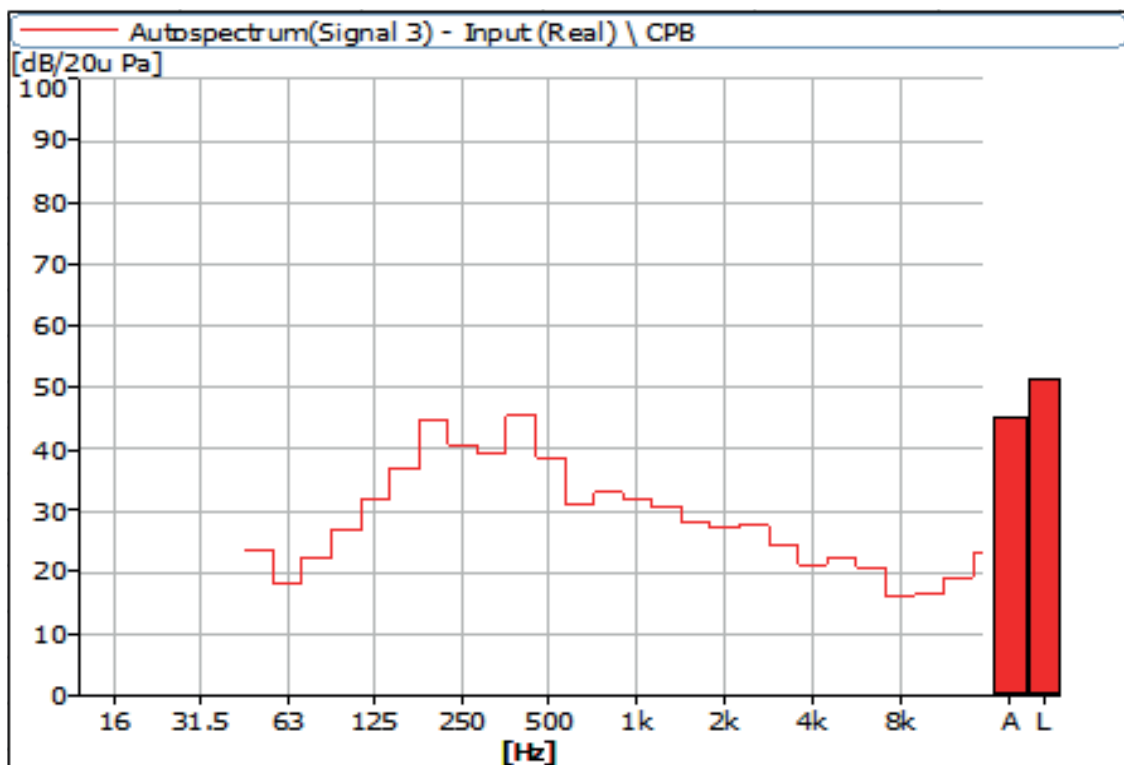


Figure 26 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 4)

5 Noise Detection Results of Stage Luminaires (The Super Silence mode)

Frequency (Hz)	Sound Pressure Level in Super Silence Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
63	13.70	15.19	15.46	16.95	15.54	16.50	18.19	16.16
80	15.03	18.61	16.20	17.97	21.70	22.64	19.97	21.31
100	19.06	20.04	19.55	17.03	23.51	24.52	24.38	23.34
125	12.37	18.16	12.13	17.04	29.01	30.14	29.32	29.34
160	20.73	23.88	19.62	22.94	34.23	35.41	33.96	34.89
200	18.63	21.46	18.19	21.67	39.92	42.41	42.50	41.69
250	26.23	26.63	25.99	27.84	39.30	40.34	41.06	39.98
315	21.50	24.82	20.04	27.02	38.51	39.10	40.30	39.18
400	19.24	23.00	18.81	22.06	42.05	44.76	42.80	45.81
500	24.30	22.62	23.17	23.54	33.42	35.14	35.08	37.40
630	19.84	18.99	19.31	18.52	26.97	27.78	27.20	28.00
800	17.36	15.27	15.87	16.03	30.84	34.39	31.53	33.63
1000	18.20	14.01	15.67	15.31	27.80	30.78	29.43	30.55
1250	20.92	21.03	15.85	23.19	25.99	26.63	26.19	26.81
1600	18.31	15.79	12.79	17.70	24.39	23.21	24.01	23.51
2000	19.33	17.98	16.85	18.25	23.32	23.43	22.88	22.90
2500	22.54	23.16	29.02	25.85	24.74	25.08	24.88	24.93
3150	20.88	14.12	14.85	14.55	23.00	21.38	20.89	20.46
4000	21.78	14.95	15.46	12.04	20.94	19.48	20.08	19.71
5000	22.61	14.16	16.66	9.77	17.20	20.02	20.34	18.49
6300	23.50	14.70	16.35	9.16	16.17	16.69	15.11	17.41
8000	24.47	15.78	17.20	10.49	12.77	12.97	13.91	12.95
10000	25.45	16.66	18.10	12.07	13.73	14.67	13.91	13.91
12500	26.44	17.49	19.16	14.19	17.93	17.95	17.46	17.48
16000	27.79	20.14	21.80	20.30	22.29	22.73	23.19	23.28
20000	39.33	37.73	38.93	40.12	42.56	43.12	43.78	43.72

Frequency (Hz)	Sound Pressure Level in Super Silence Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	43.1	40.9	42.2	42.4	48.6	50.6	50.2	50.6
A-weighted dB(A)	35.8	33.0	34.6	34.6	42.1	44.0	43.3	44.5
Average sound pressure level dB(A)	34.5				43.5			

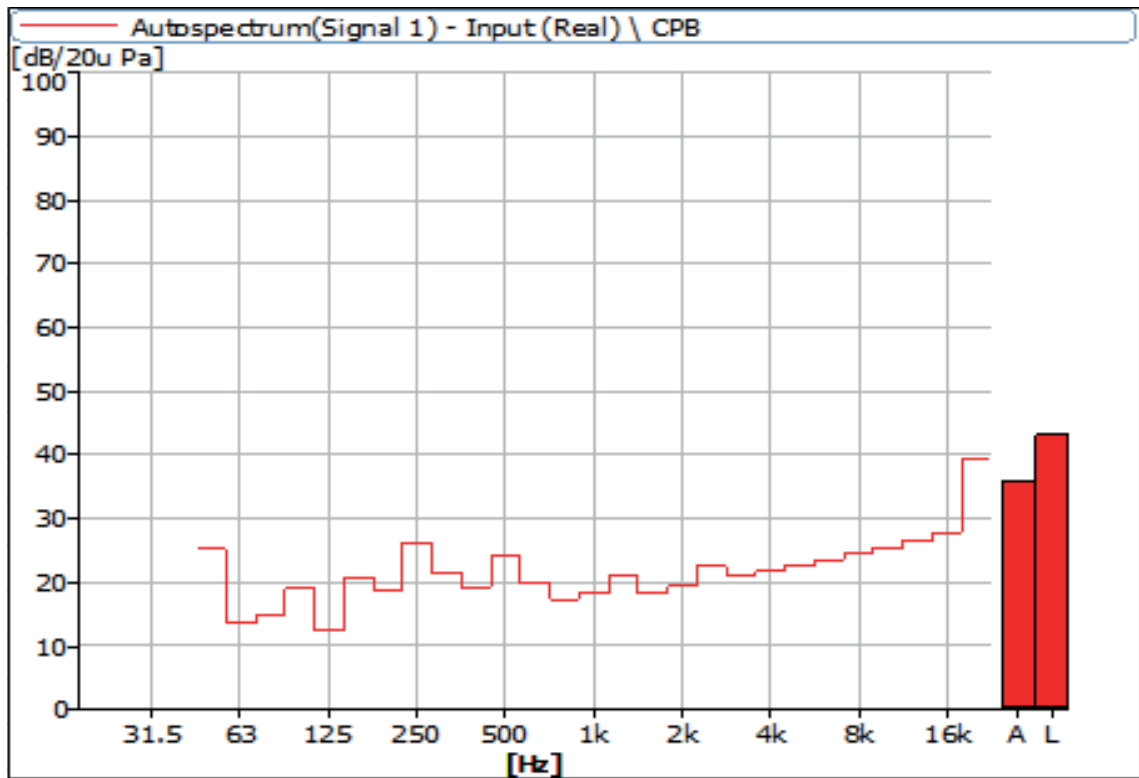


Figure 27 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 1)

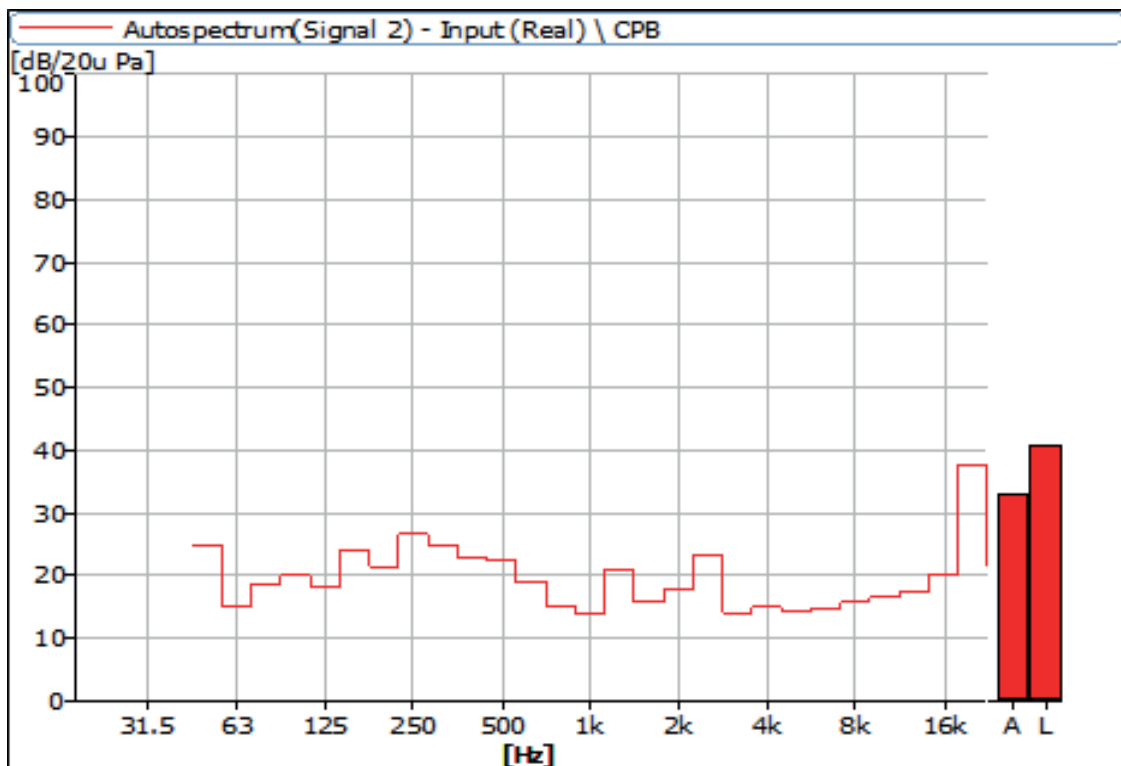


Figure 28 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 2)

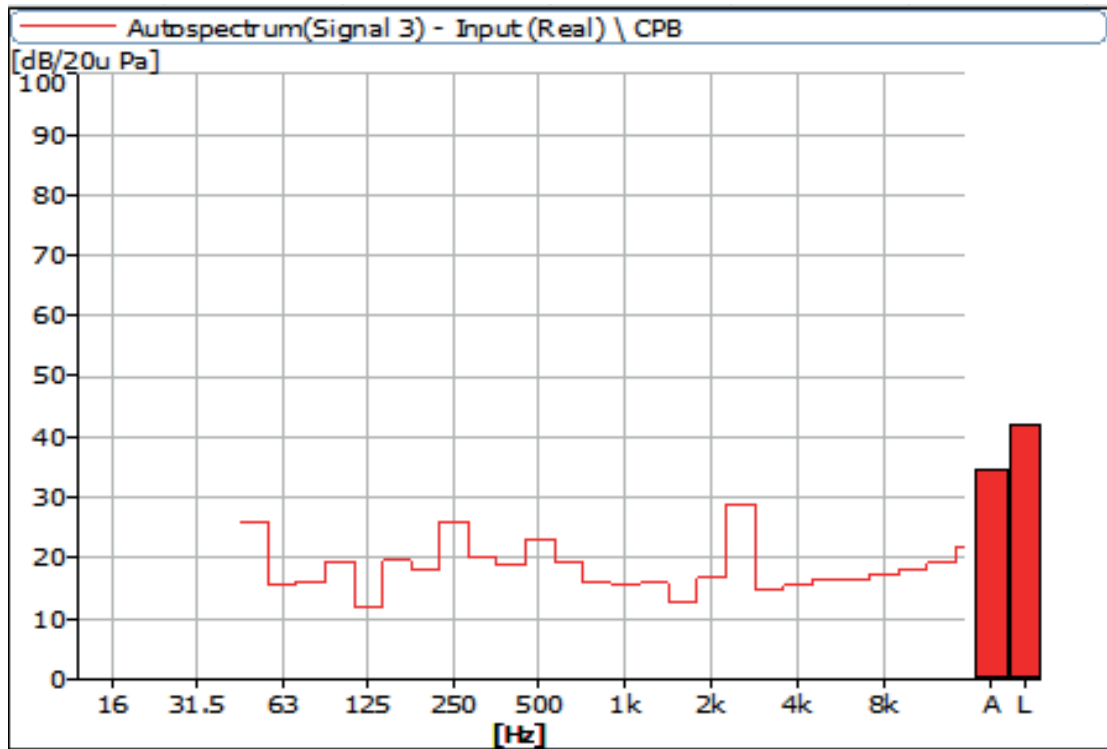


Figure 29 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 3)

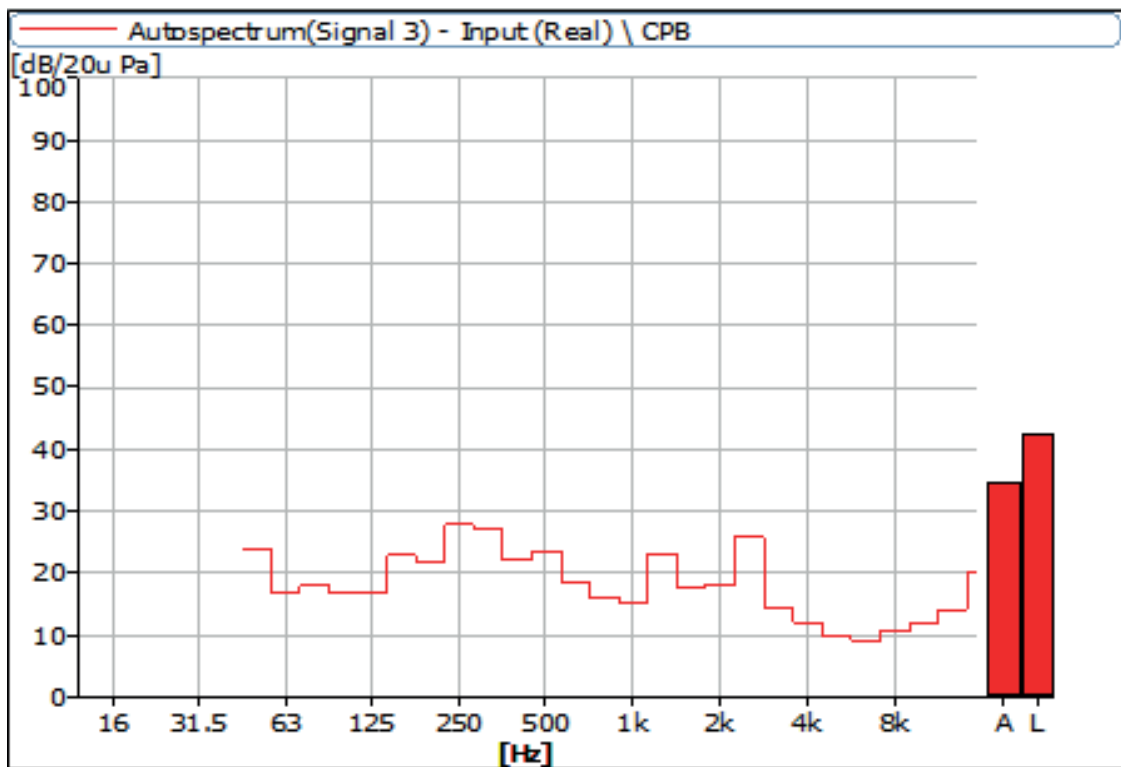


Figure 30 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 4)

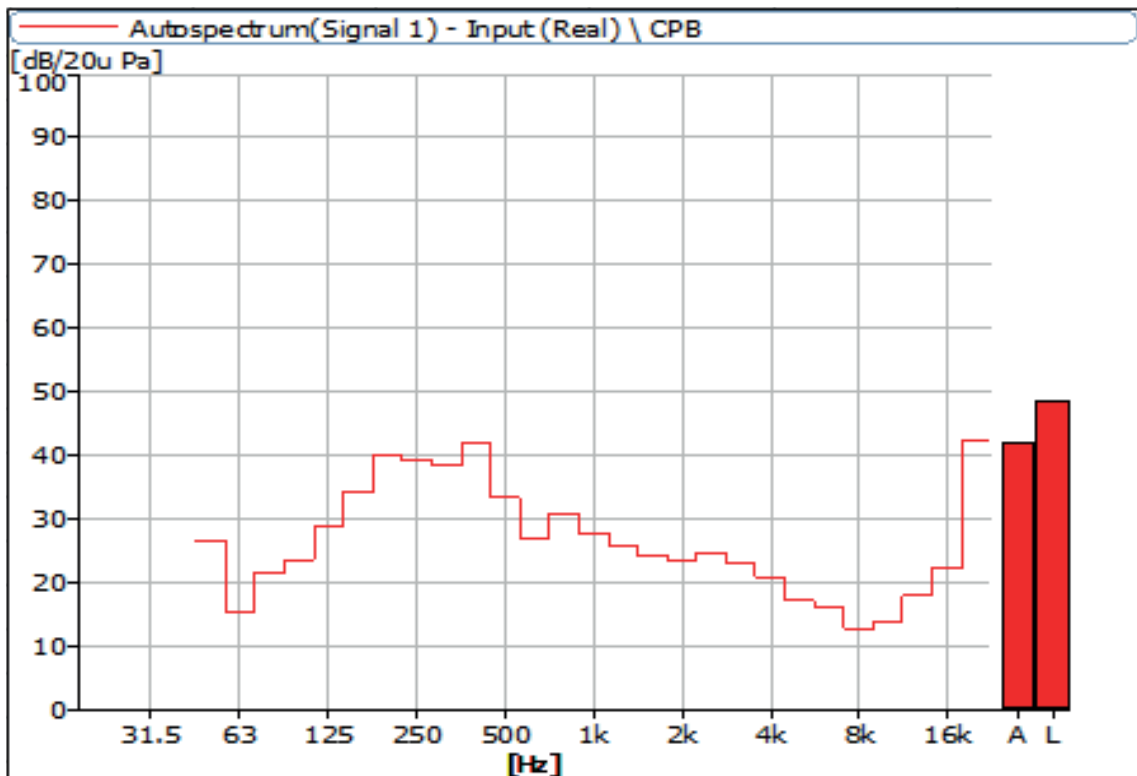


Figure 31 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 1)

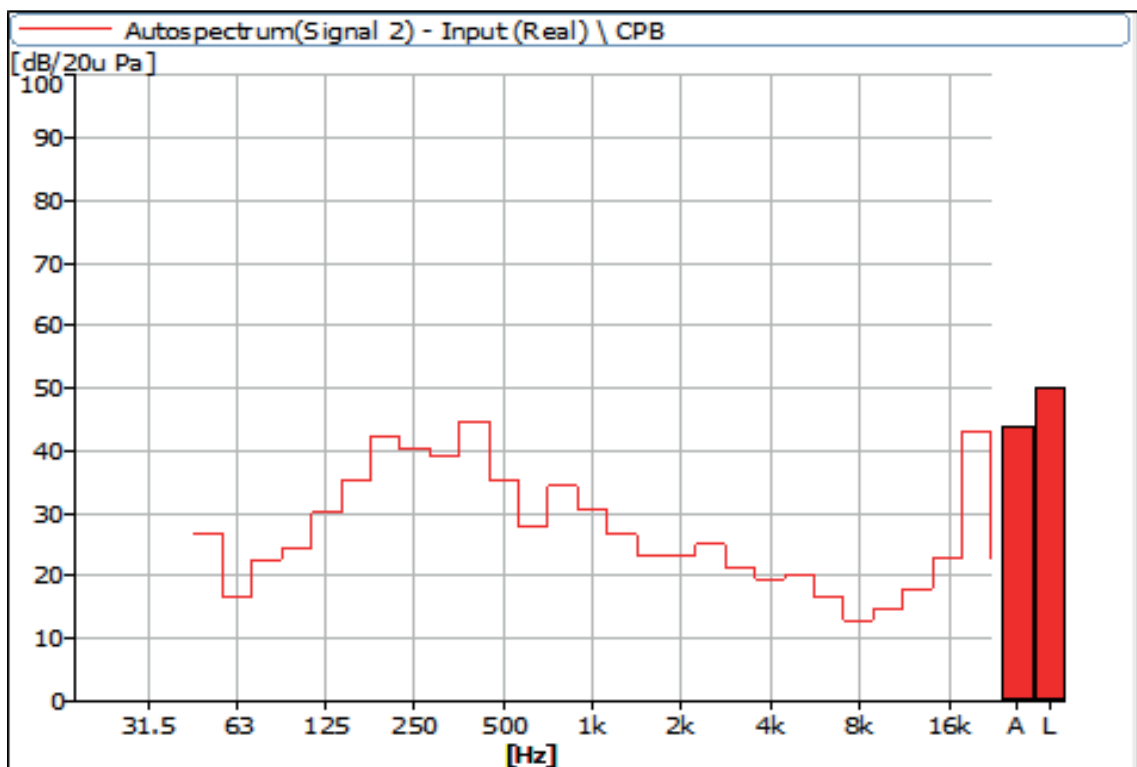


Figure 32 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 2)

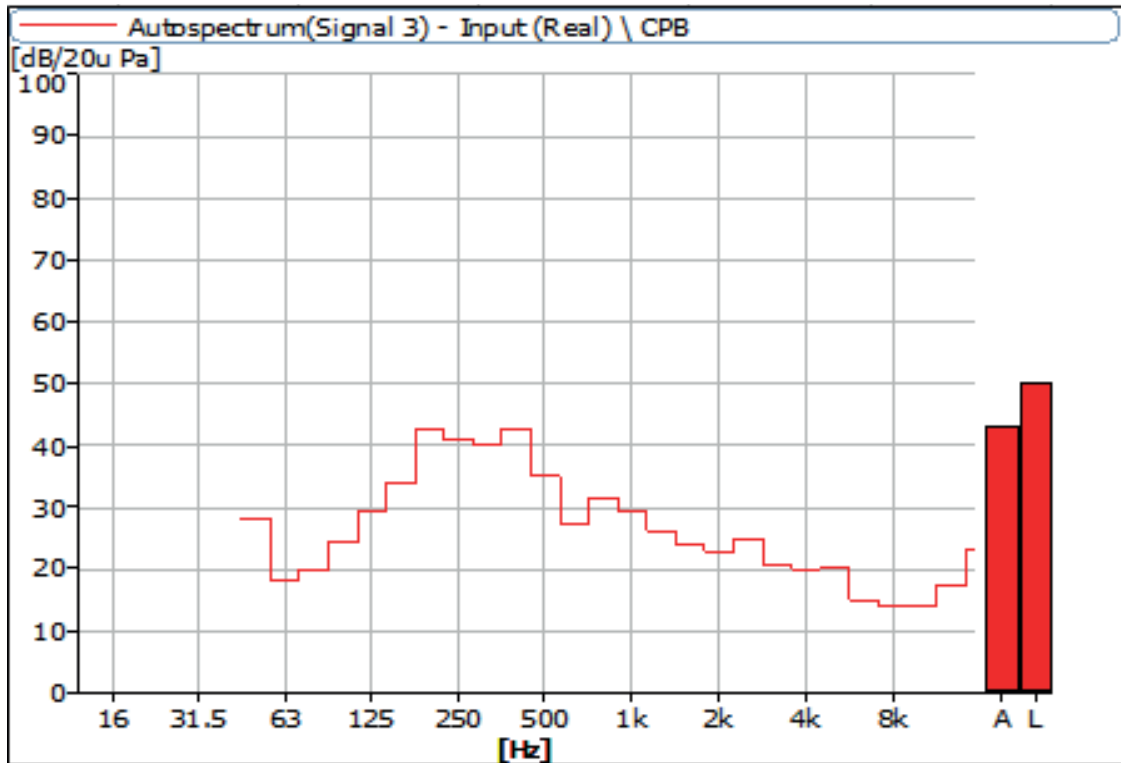


Figure 33 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 3)

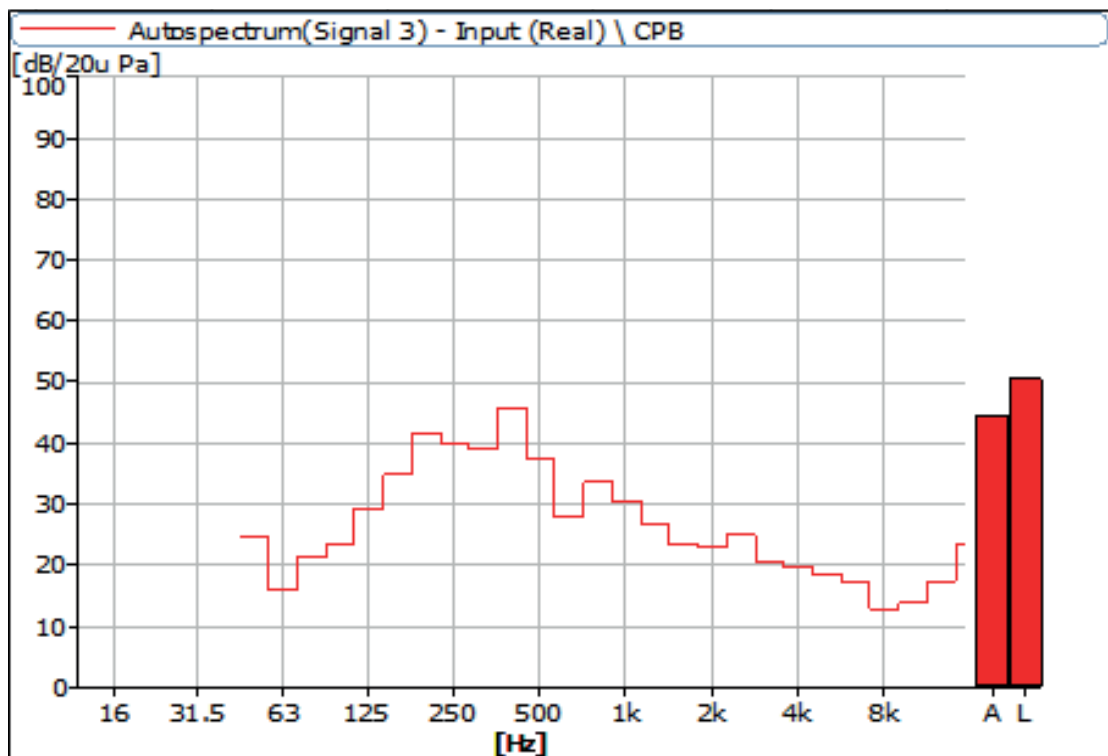


Figure 34 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 4)

Instrumentation

No	Equipment	Type	Number	Calibration Period
1	Anechoicrooms	-	R40010	2023-05-17
2	Noise Analyzer	3160-A-042	R40011-2	2023-06-05



AYRTON

Digital Lighting