



PERSEO BEAM

NOISE MEASUREMENTS



AYRTON
Digital Lighting

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
20	34.6	33.5	33.9	35.4	35.0	35.1	35.2	36.6
25	31.9	30.1	30.9	31.6	35.1	35.7	36.3	35.5
31.5	32.2	29.8	28.0	27.8	31.6	30.0	27.7	28.4
40	22.5	22.1	23.2	20.8	22.0	22.5	24.6	22.2
50	25.2	26.4	25.9	25.8	24.9	26.3	27.5	26.6
63	16.8	14.5	16.1	16.0	21.8	16.7	22.3	18.1
80	17.2	14.2	15.8	16.3	20.5	20.6	21.3	18.4
100	29.9	28.8	29.3	27.7	28.7	28.0	27.2	27.4
125	42.9	42.6	42.9	40.9	40.2	40.8	39.2	39.2
160	20.5	17.9	21.6	18.5	27.7	24.2	25.8	26.9
200	25.4	20.3	25.1	19.9	28.4	27.0	27.4	27.6
250	27.5	22.6	27.4	22.0	41.0	40.1	40.7	39.7
315	32.5	30.5	35.9	30.4	43.5	43.1	43.3	42.9
400	30.5	28.6	29.8	27.2	48.0	47.4	47.2	45.6
500	34.9	35.9	35.6	34.1	44.8	44.0	44.0	41.4
630	36.6	32.6	36.6	33.9	38.8	37.2	37.3	37.2
800	33.7	32.0	32.7	30.9	38.4	36.4	38.2	36.8
1000	29.3	32.2	28.9	32.1	34.3	33.8	34.2	33.2
1250	31.8	32.8	30.4	30.6	30.5	31.1	29.9	30.7
1600	29.4	28.6	28.3	26.6	29.6	29.9	29.9	29.5
2000	29.3	24.7	27.3	23.7	27.1	26.8	26.8	26.2
2500	27.5	23.8	25.2	23.2	27.0	26.2	26.8	25.1
3150	29.5	29.3	29.8	29.5	30.5	29.4	29.9	29.7
4000	24.7	26.9	26.5	25.3	26.5	25.4	25.9	26.0
5000	16.8	15.2	17.0	15.7	20.6	18.3	18.7	19.3
6300	14.5	11.4	15.5	14.4	15.1	14.9	16.4	16.1
8000	11.2	9.0	14.1	13.9	13.2	12.1	14.9	14.7
10000	10.7	8.0	14.1	13.9	11.1	10.7	14.6	14.5
12500	10.6	7.8	14.4	14.2	9.4	8.9	14.6	14.5
16000	11.2	8.8	15.4	15.0	12.2	12.1	16.5	16.0
20000	26.3	23.3	26.6	21.5	29.9	29.9	31.9	29.9

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	46.7	45.9	46.6	45.1	52.4	51.8	52.0	50.7
A-weighted dB(A)	41.7	41.0	41.4	40.2	47.9	47.1	47.3	46.0
Average sound pressure level dB(A)	41.1				47.1			

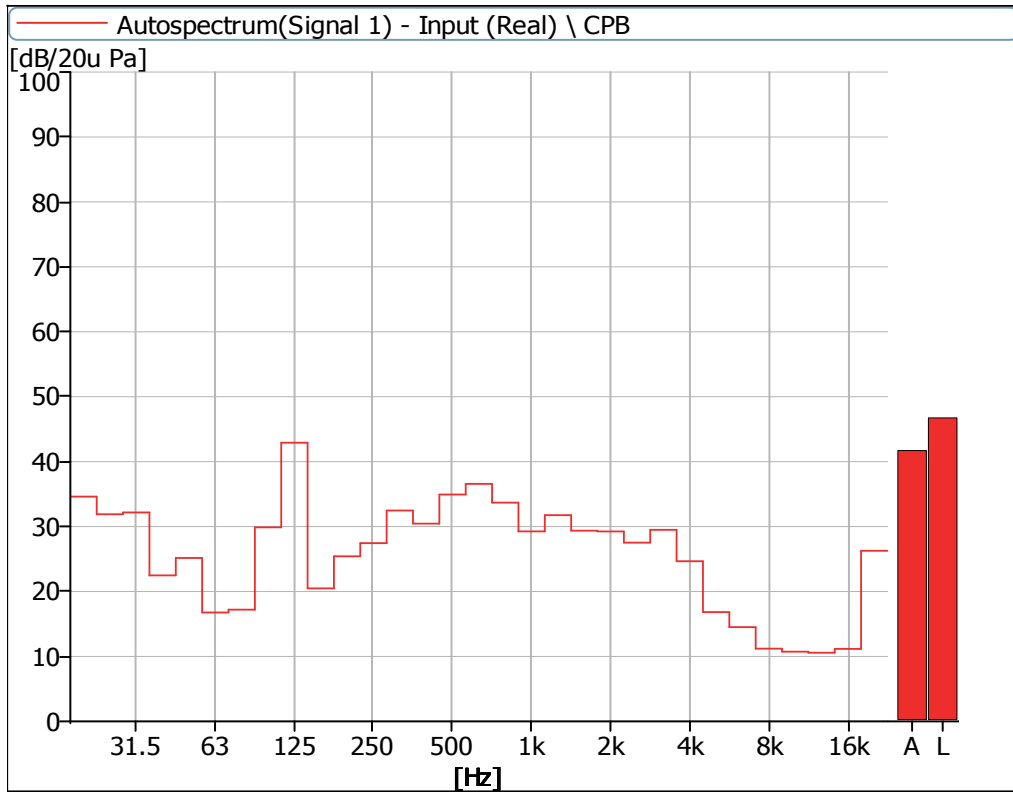


Figure 3 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 1)

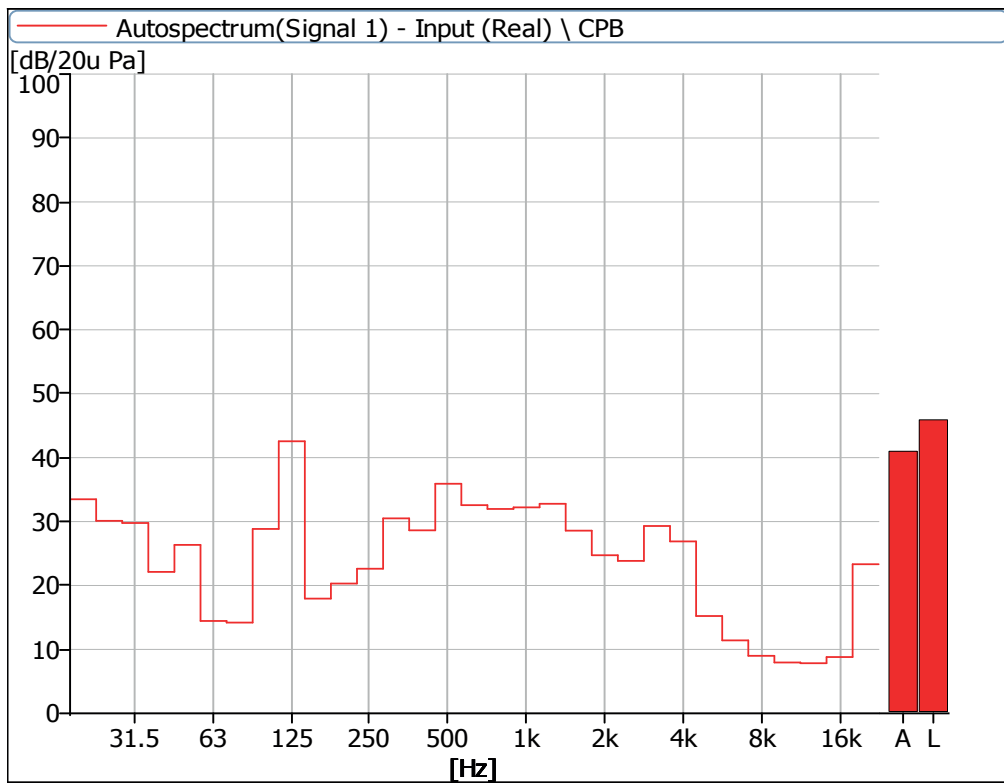


Figure 4 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 2)

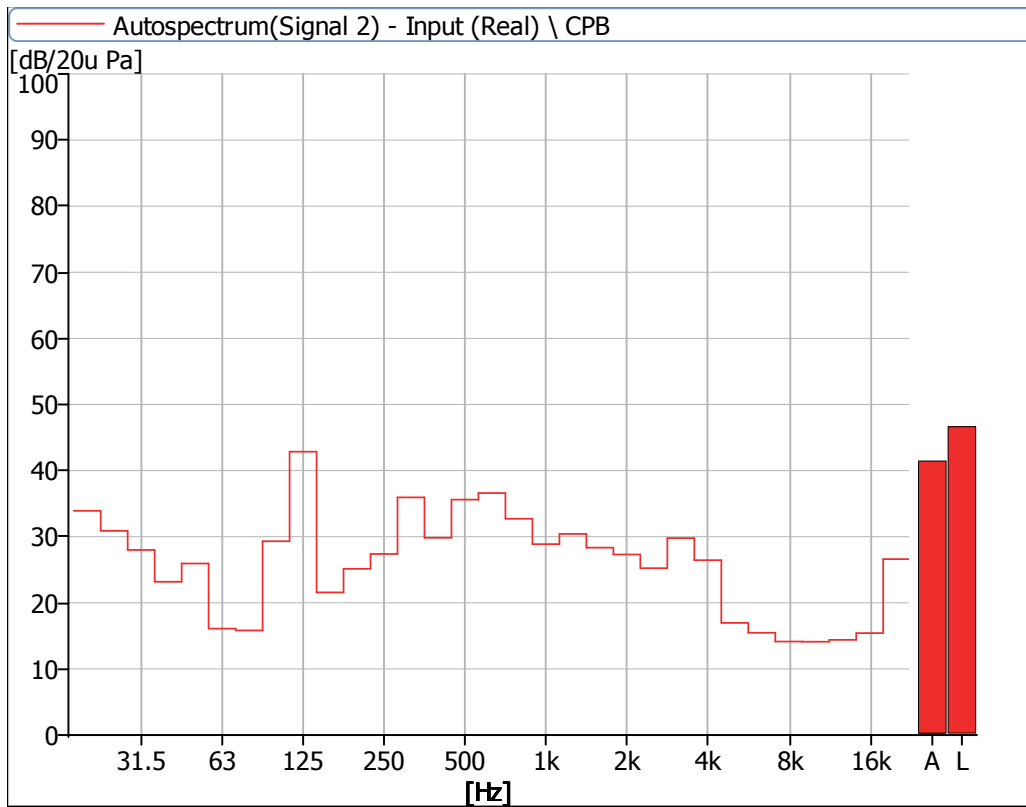


Figure 5 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 3)

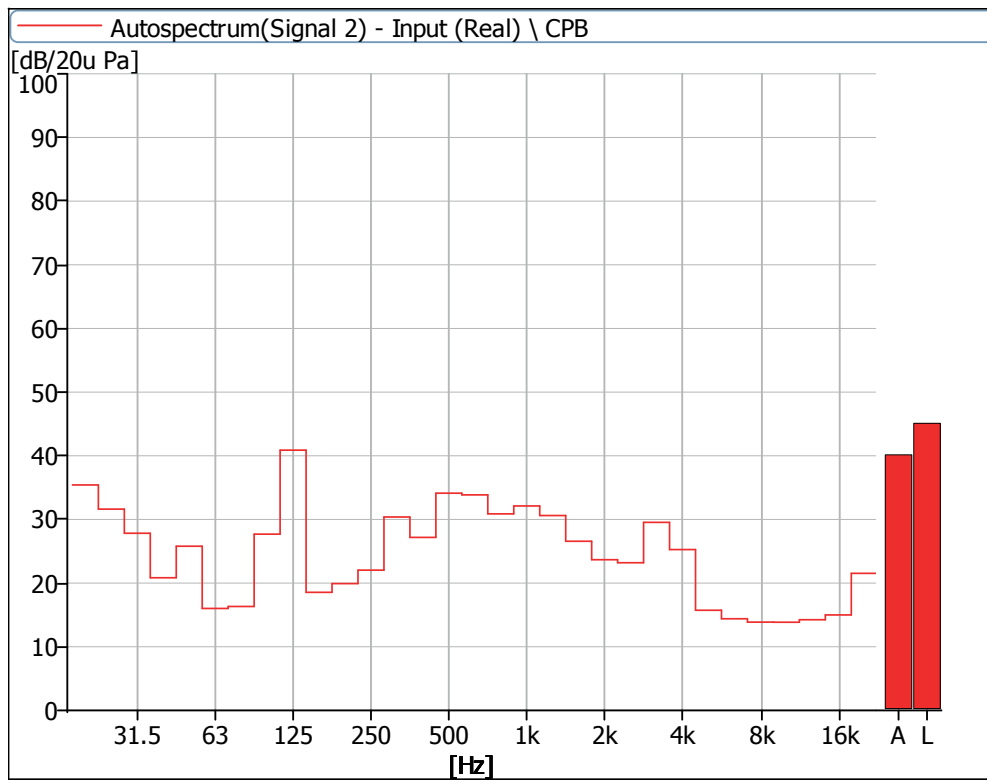


Figure 6 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 4)

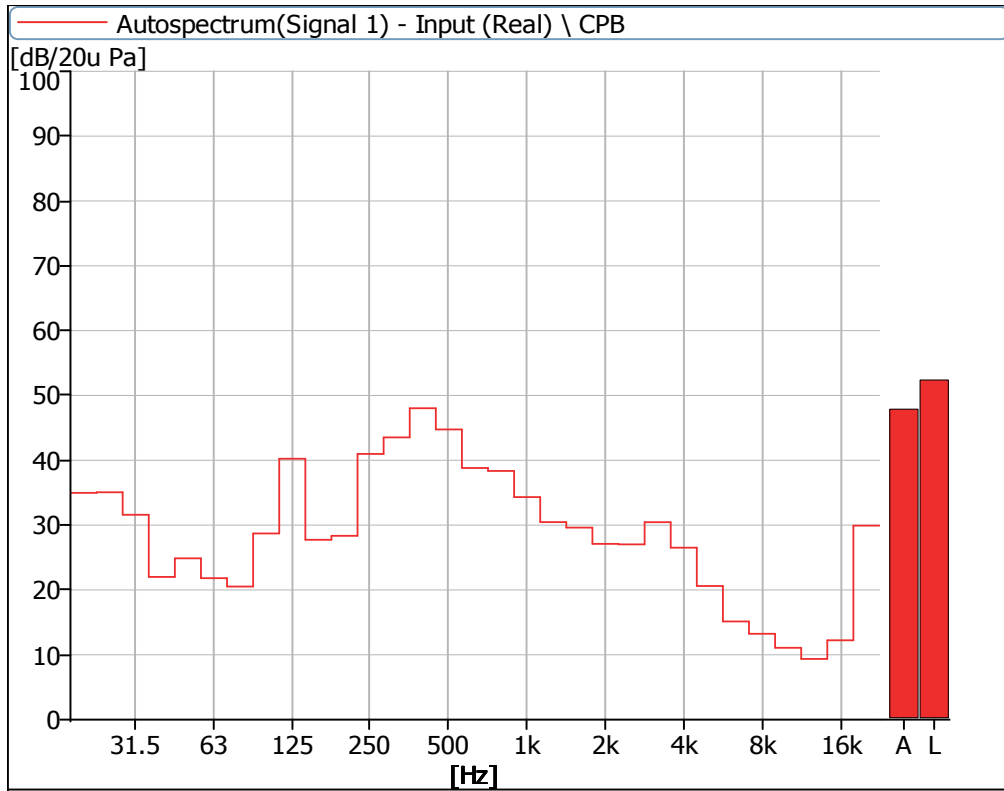


Figure 7 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 1)

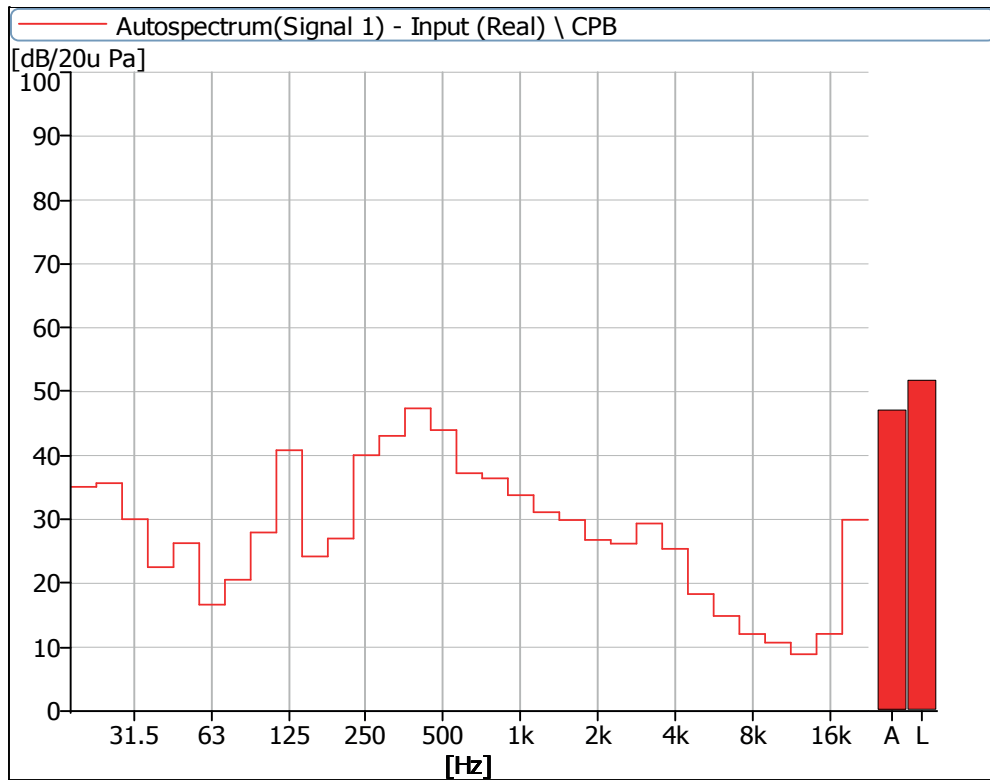


Figure 8 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 2)

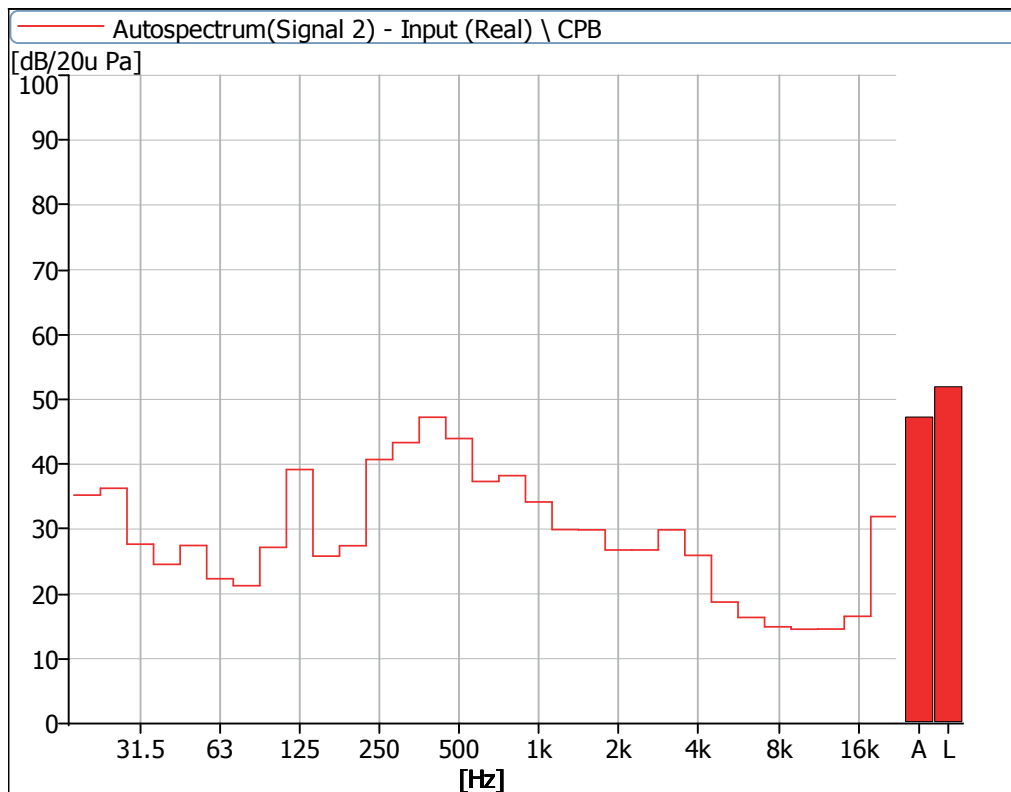


Figure 9 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 3)

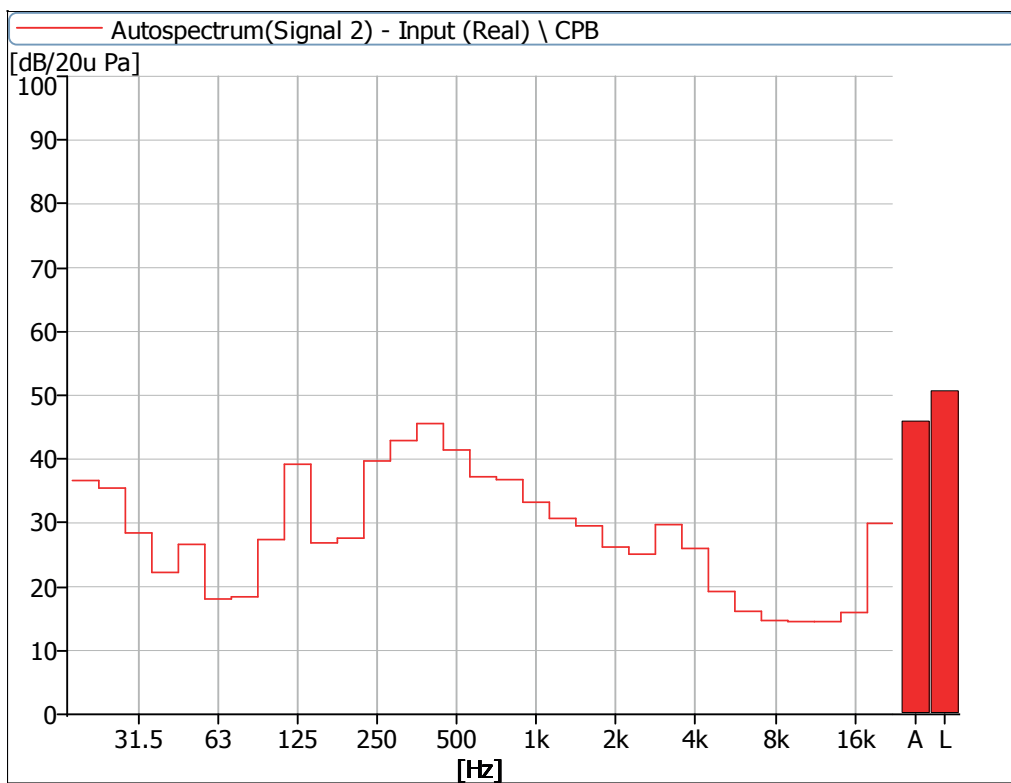


Figure 10 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 4)

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
20	35.5	33.0	34.6	35.0	36.2	35.2	36.1	36.5
25	33.0	29.7	31.6	31.0	34.6	34.9	35.8	34.5
31.5	32.4	29.5	27.9	27.4	31.8	30.2	27.8	27.6
40	21.5	22.6	22.0	21.3	22.2	22.8	23.6	21.2
50	23.3	27.6	26.2	26.9	25.4	25.7	26.8	26.9
63	16.9	14.4	16.0	15.7	20.9	16.5	20.2	17.9
80	17.9	14.2	16.2	15.5	19.6	19.6	20.8	18.6
100	27.7	16.9	25.7	20.6	26.9	25.2	24.9	25.5
125	38.9	20.5	37.4	20.4	35.6	36.9	34.3	34.7
160	19.8	15.8	20.9	17.4	28.1	23.2	25.8	25.9
200	25.4	20.8	24.8	20.1	27.8	26.9	27.3	27.7
250	29.0	22.0	27.5	21.6	41.3	41.7	41.2	41.1
315	32.6	28.3	29.8	28.6	43.8	44.3	43.7	43.8
400	35.1	31.4	32.9	29.8	47.8	47.5	47.3	45.9
500	36.5	36.1	34.9	34.0	44.6	43.5	44.0	41.2
630	36.2	32.7	36.3	32.1	38.4	36.7	37.1	37.1
800	36.1	32.9	35.7	32.3	39.4	38.0	38.9	37.9
1000	30.3	33.8	28.7	32.4	34.4	33.6	34.4	33.3
1250	31.8	31.7	30.1	31.5	31.0	32.3	30.7	32.5
1600	31.8	28.7	29.9	28.5	31.0	30.7	31.1	30.5
2000	28.5	25.3	29.5	22.8	28.3	28.2	28.2	28.1
2500	26.9	24.8	26.8	24.3	28.0	27.3	27.6	26.5
3150	30.8	31.1	29.7	30.1	31.5	30.6	30.8	30.6
4000	27.6	26.8	25.4	26.5	27.5	26.8	27.0	27.3
5000	18.0	15.2	18.1	16.8	20.1	19.9	19.2	21.1
6300	14.5	11.9	16.8	14.9	16.0	16.7	16.7	17.7
8000	11.2	9.4	14.7	14.0	13.2	13.3	15.1	15.6
10000	9.4	8.0	14.7	13.8	11.0	11.0	14.4	14.8
12500	8.5	7.9	15.0	14.2	9.4	9.0	14.6	14.6
16000	9.3	8.5	15.5	15.0	12.6	12.1	16.5	15.9
20000	21.6	21.1	23.1	22.0	30.8	30.0	31.8	29.8

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	46.4	43.6	45.1	43.2	52.3	52.0	51.8	51.0
A-weighted dB(A)	42.7	41.4	41.8	40.5	48.0	47.4	47.5	46.5
Average sound pressure level dB(A)	41.7				47.4			

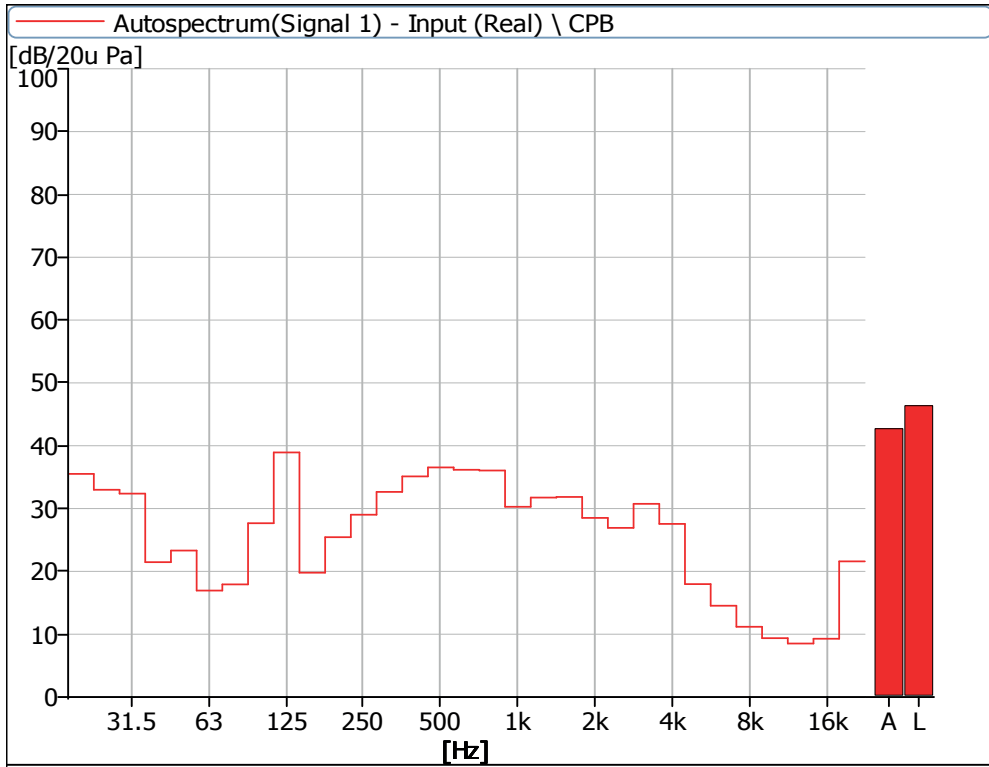


Figure 11 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 1)

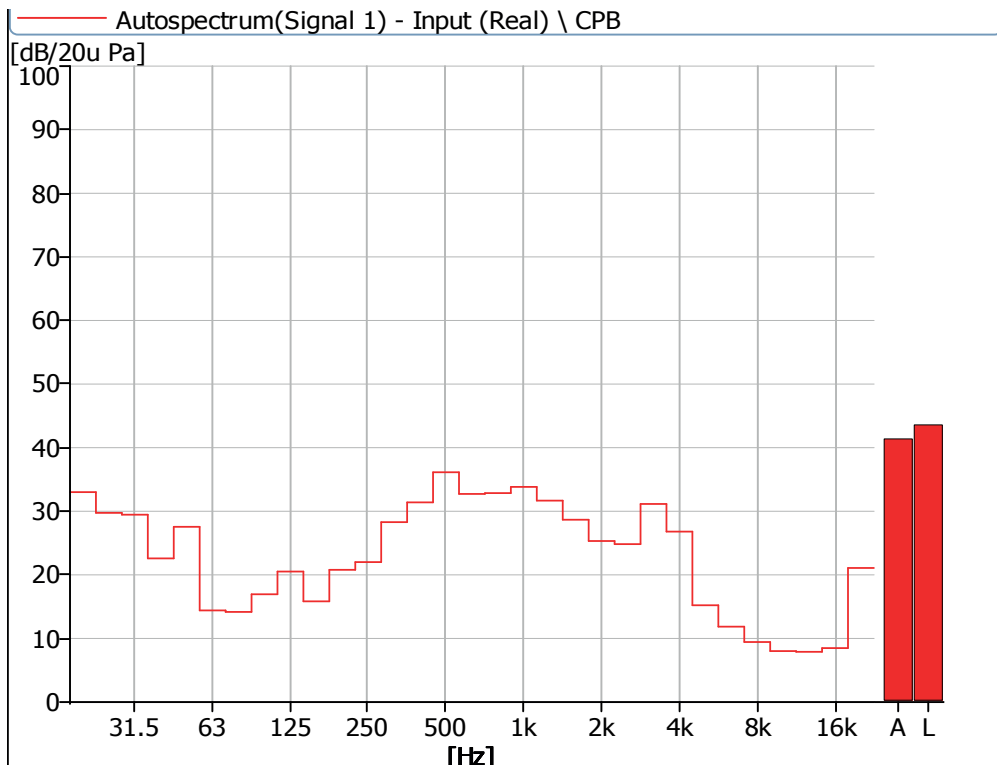


Figure 12 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 2)

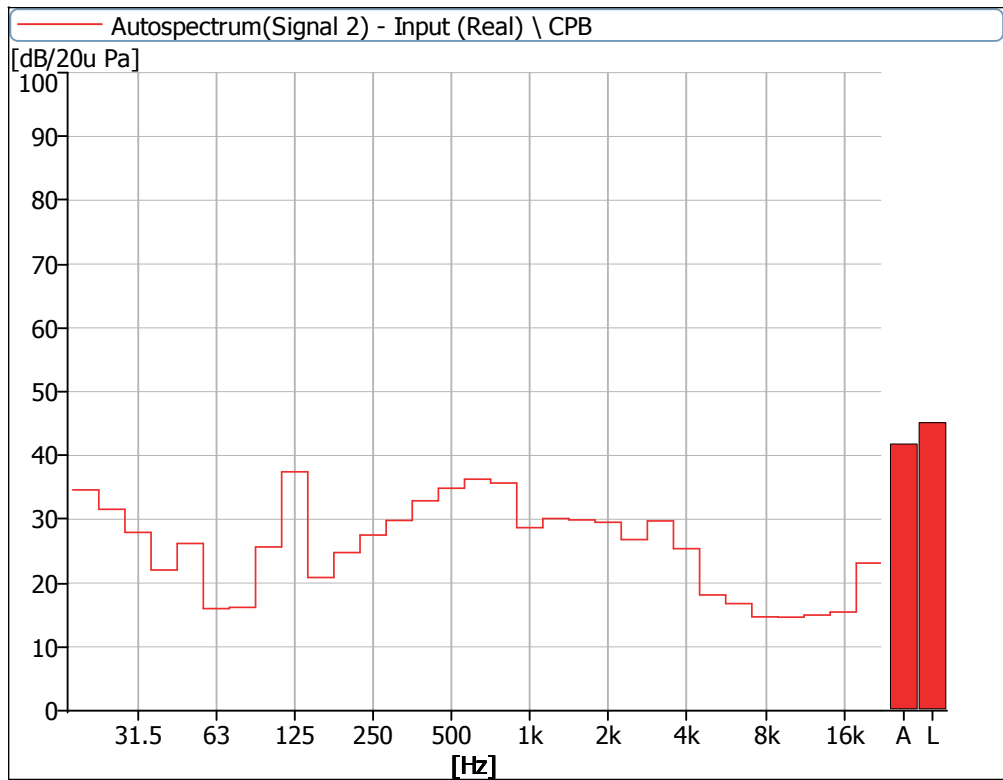


Figure 13 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 3)

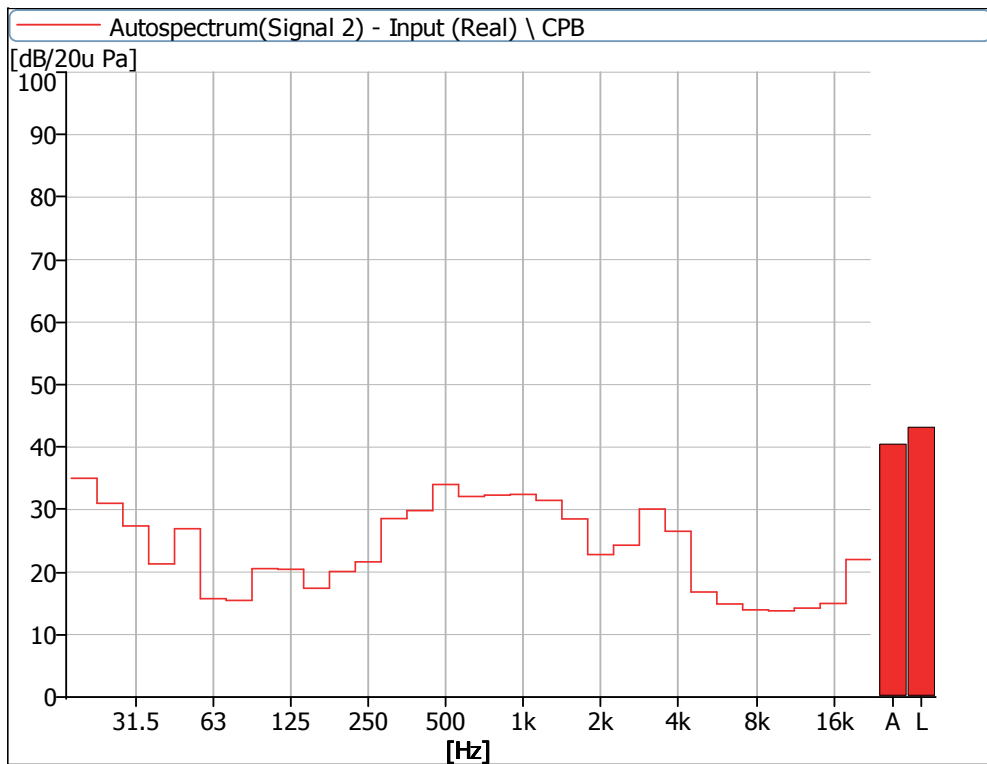


Figure 14 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 4)

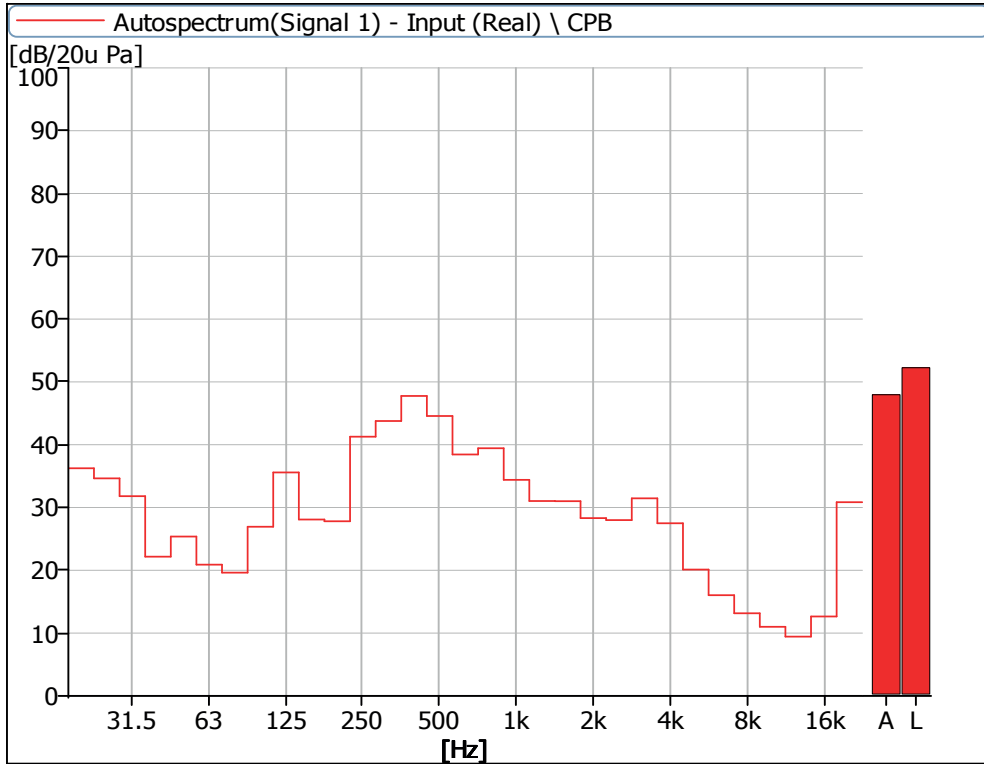


Figure 15 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 1)

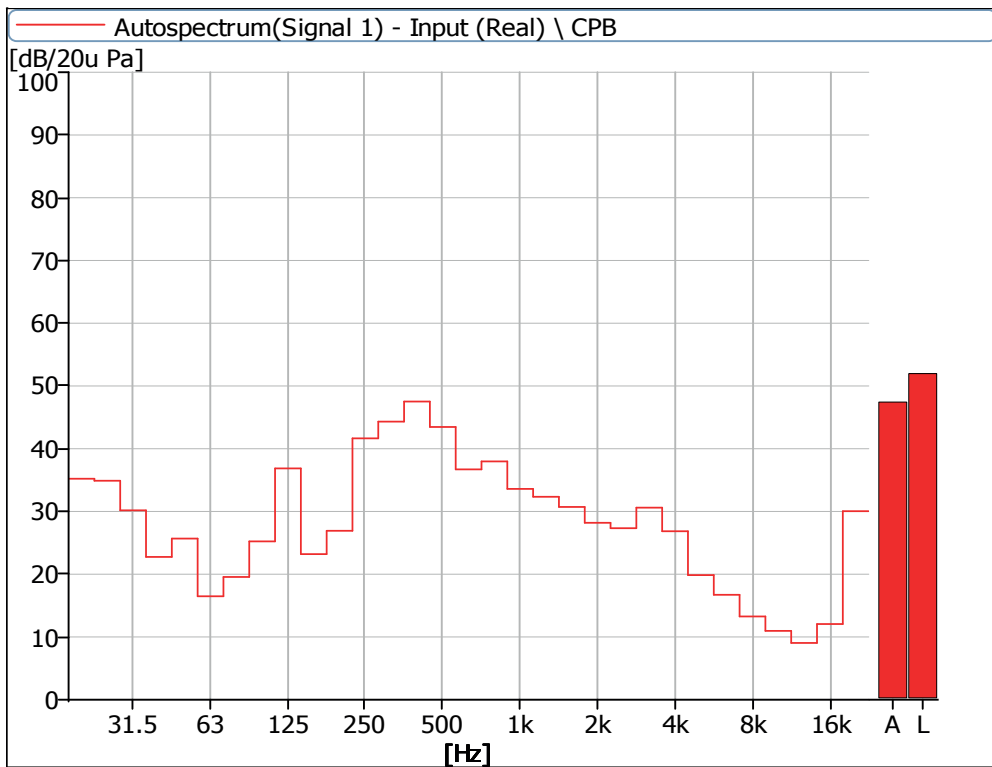


Figure 16 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 2)

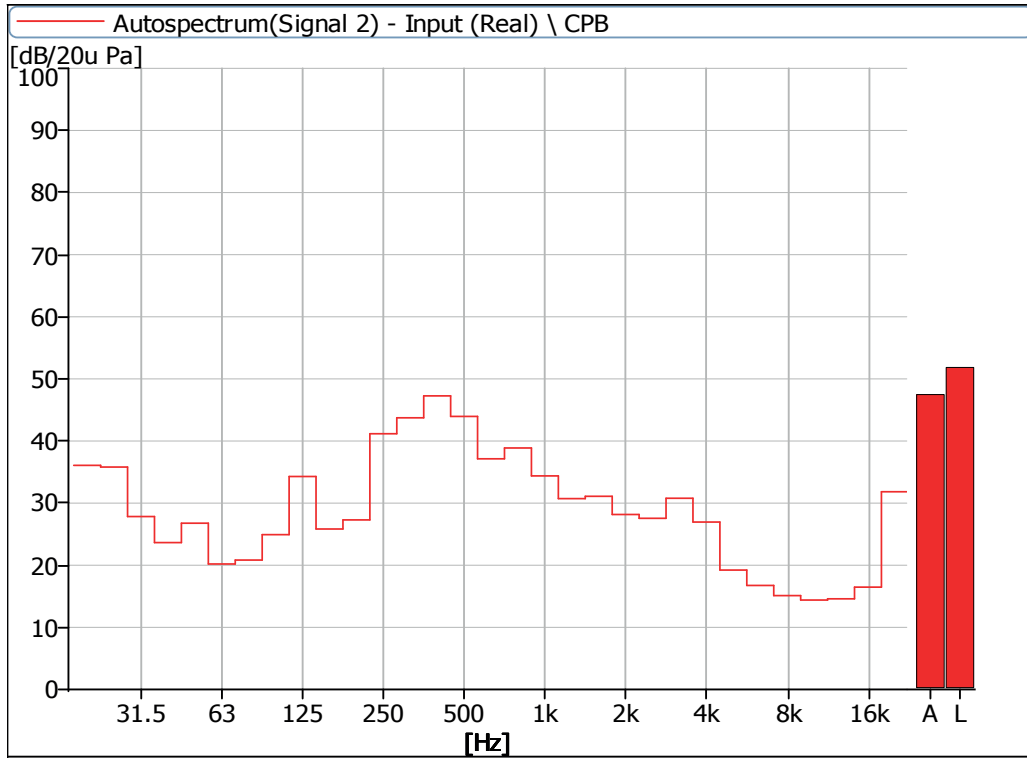


Figure 17 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 3)

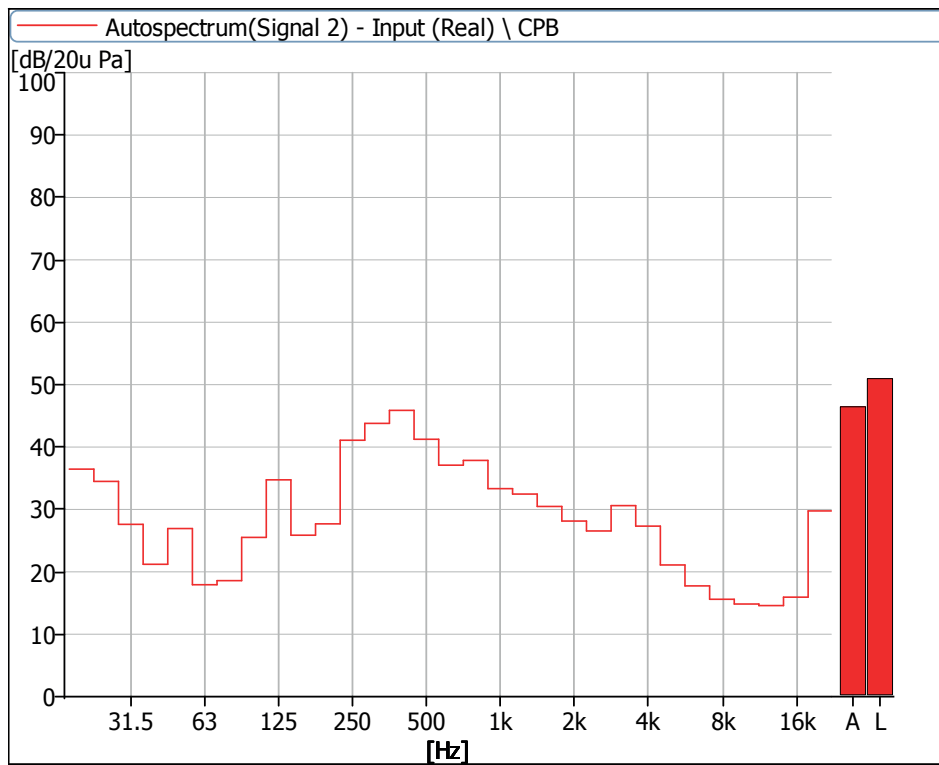


Figure 18 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 4)

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
20	38.5	34.5	35.4	39.0	35.4	35.2	35.9	36.5
25	33.3	31.3	31.5	32.2	35.7	38.2	37.1	37.7
31.5	30.8	28.8	27.2	27.8	31.6	29.7	27.3	27.5
40	25.2	26.2	26.4	23.8	22.0	23.5	23.3	22.1
50	25.2	26.9	26.2	25.5	24.5	25.7	27.2	26.1
63	15.9	13.9	15.5	15.2	20.5	16.8	20.6	17.8
80	20.5	14.7	16.8	17.5	20.0	21.9	21.6	19.3
100	24.1	17.3	21.0	21.8	25.8	22.3	24.4	24.1
125	17.3	12.8	15.5	13.4	21.9	21.1	21.3	22.3
160	16.8	12.9	18.7	16.6	26.7	22.5	24.6	25.0
200	22.9	15.7	21.5	16.1	27.2	25.6	25.9	26.8
250	25.4	18.4	24.7	17.9	42.2	41.6	42.2	41.2
315	22.6	19.1	21.7	17.1	44.5	44.3	44.7	44.1
400	26.5	26.9	25.7	23.8	48.0	47.1	47.6	45.4
500	29.1	29.7	28.2	26.8	44.6	43.6	43.4	41.1
630	25.2	22.7	24.7	21.6	37.6	35.7	36.3	36.5
800	24.7	24.7	25.6	24.6	38.9	37.1	38.3	36.8
1000	21.4	23.8	22.1	23.9	32.9	31.7	32.7	32.0
1250	31.5	29.2	29.9	29.3	29.0	28.5	28.0	28.8
1600	28.2	26.7	29.1	24.4	29.4	28.1	29.0	28.2
2000	20.8	19.7	23.8	17.7	23.8	23.1	23.7	23.1
2500	20.7	18.6	21.2	19.3	24.8	23.8	25.1	22.8
3150	25.4	27.8	24.3	26.3	26.9	26.5	26.1	26.5
4000	19.4	20.1	18.6	19.7	21.6	20.8	20.6	20.5
5000	10.8	10.4	13.9	13.5	17.9	16.9	16.1	18.4
6300	8.9	9.2	14.1	13.4	13.1	12.6	14.7	15.0
8000	8.6	8.6	14.6	13.4	11.7	11.1	14.4	14.5
10000	8.7	8.0	14.3	13.8	10.5	9.9	14.4	14.4
12500	8.3	7.9	14.6	14.3	9.0	8.6	14.5	14.5
16000	9.2	9.0	15.2	15.1	12.3	11.8	16.5	15.8
20000	23.1	24.4	22.0	24.8	30.8	30.0	32.1	29.8

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	42.5	40.5	41.0	42.0	52.3	51.6	52.0	50.7
A-weighted dB(A)	36.7	36.0	36.4	35.1	47.7	46.8	47.2	45.7
Average sound pressure level dB(A)	36.1				46.9			

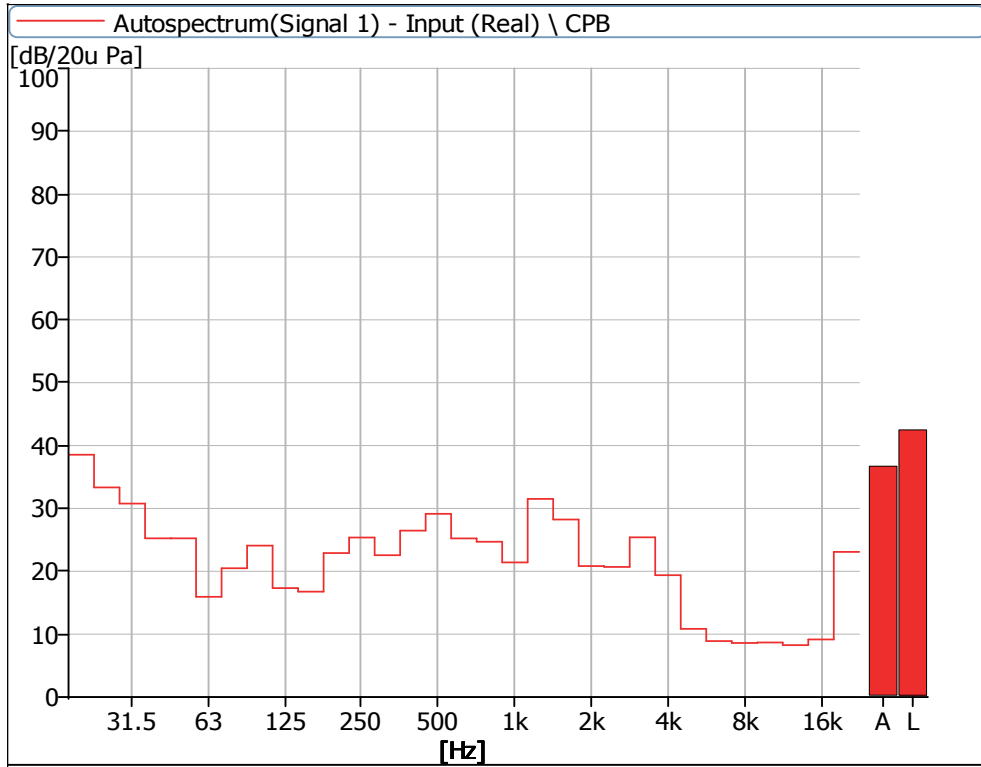


Figure 19 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 1)

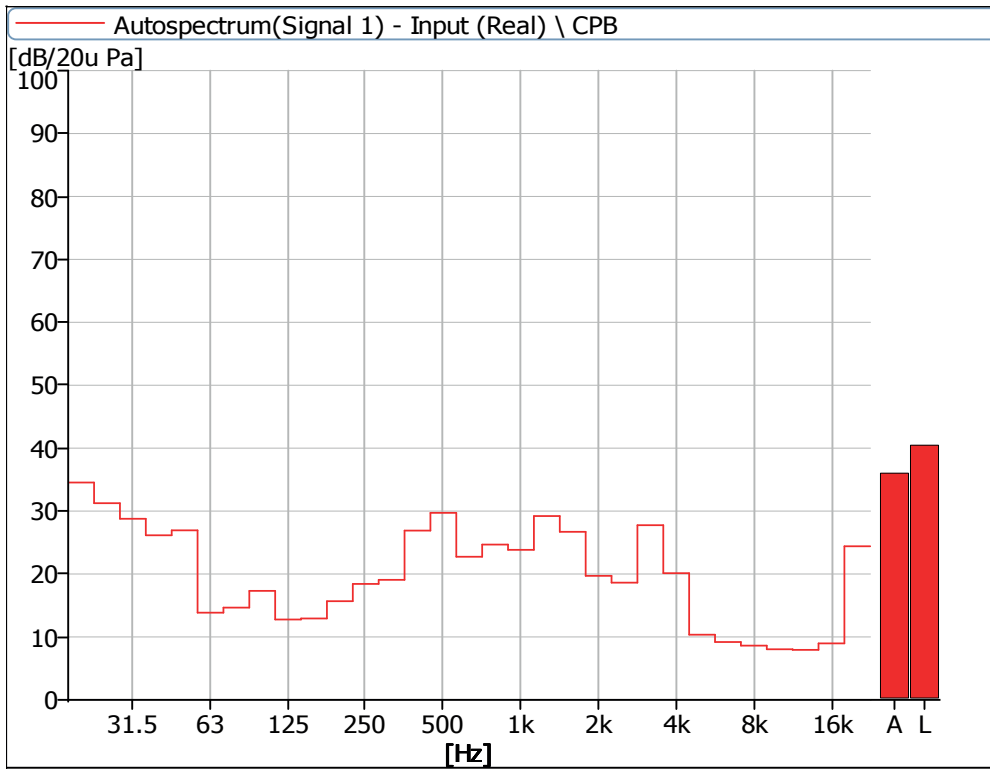


Figure 20 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 2)

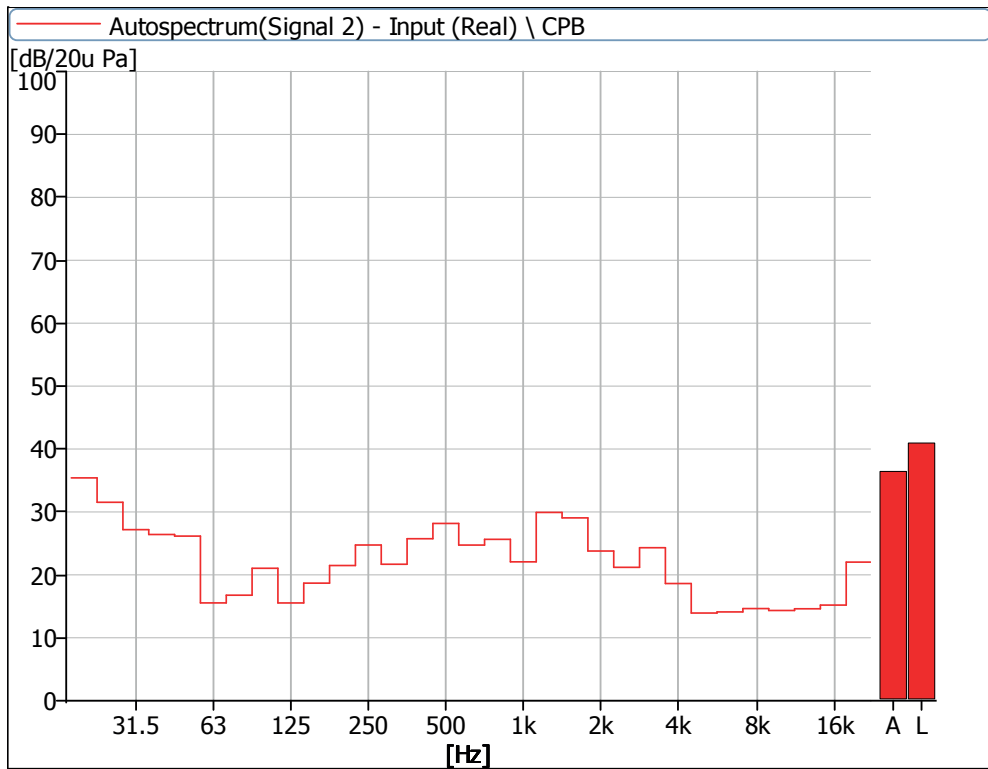


Figure 21 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 3)

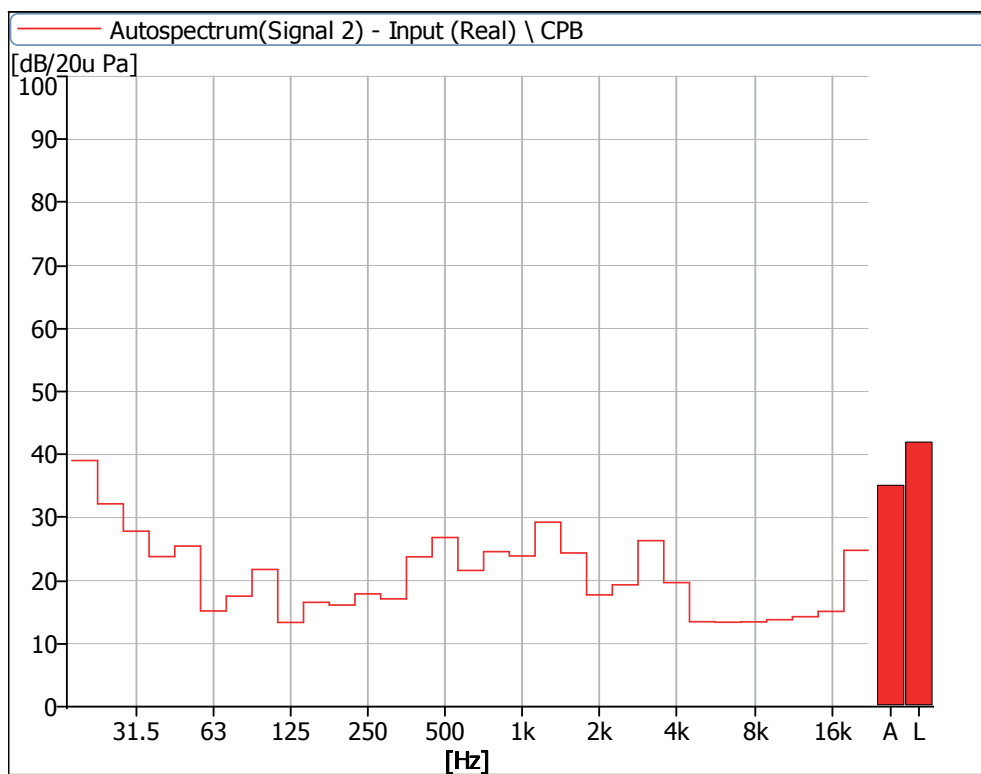


Figure 22 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 4)

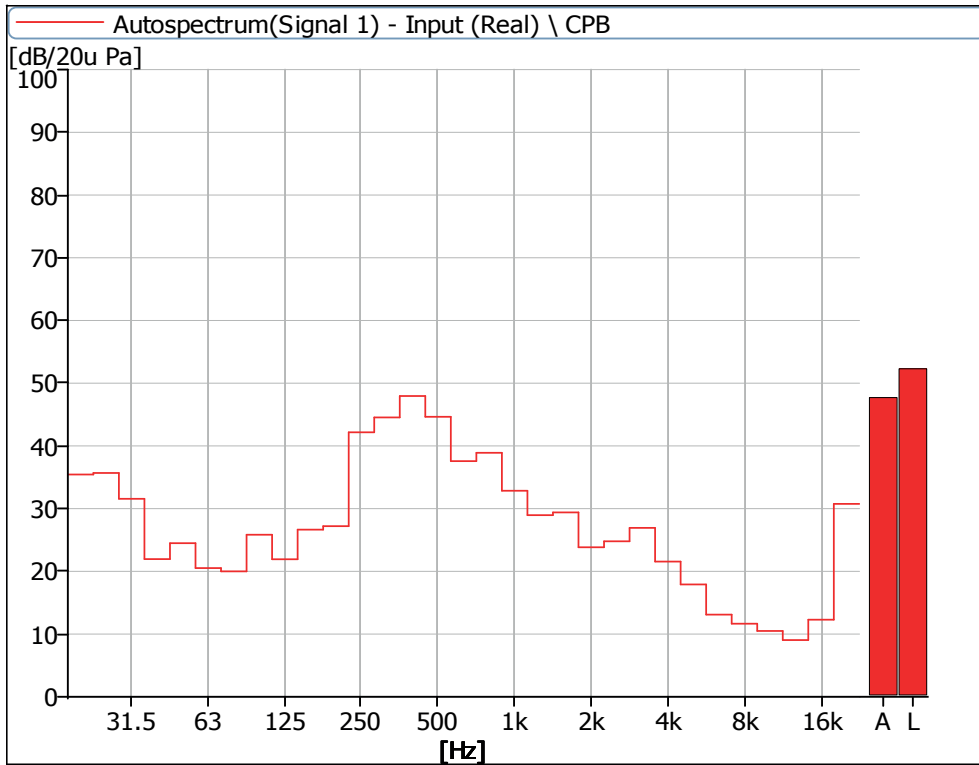


Figure 23 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 1)

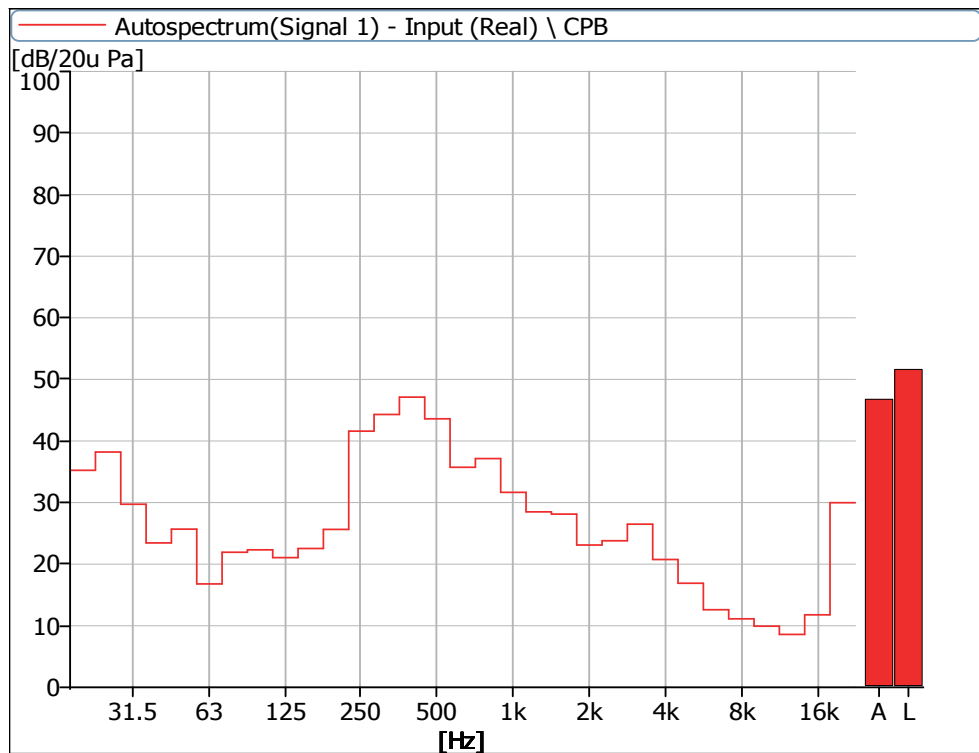


Figure 24 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 2)

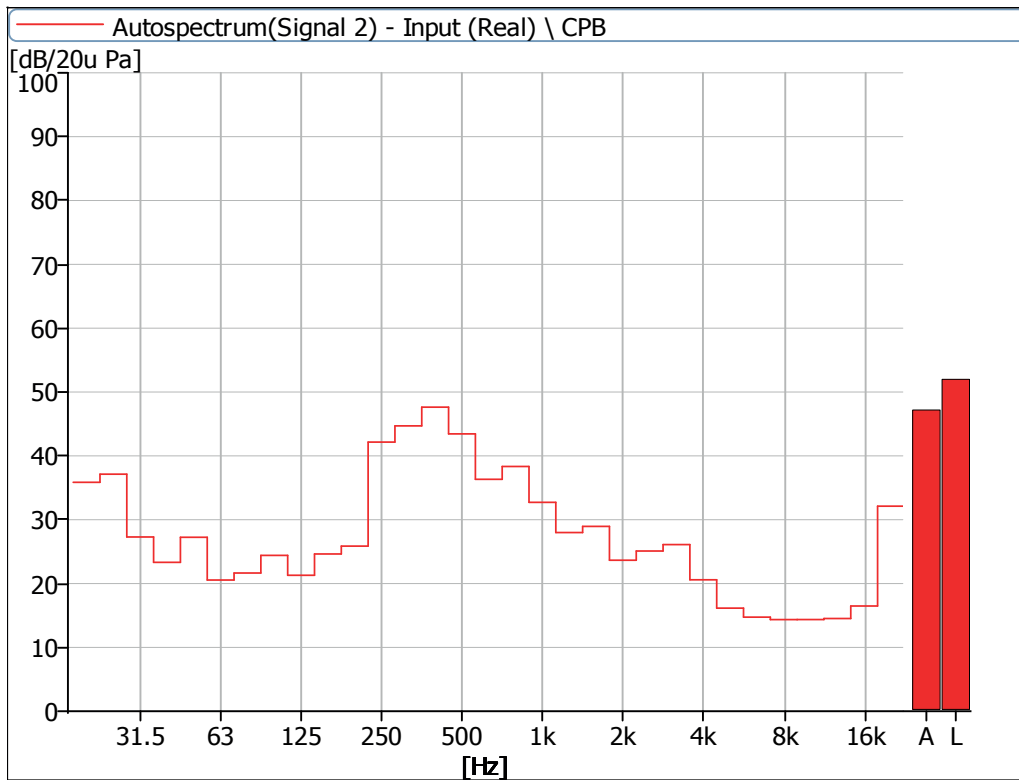


Figure 25 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 3)

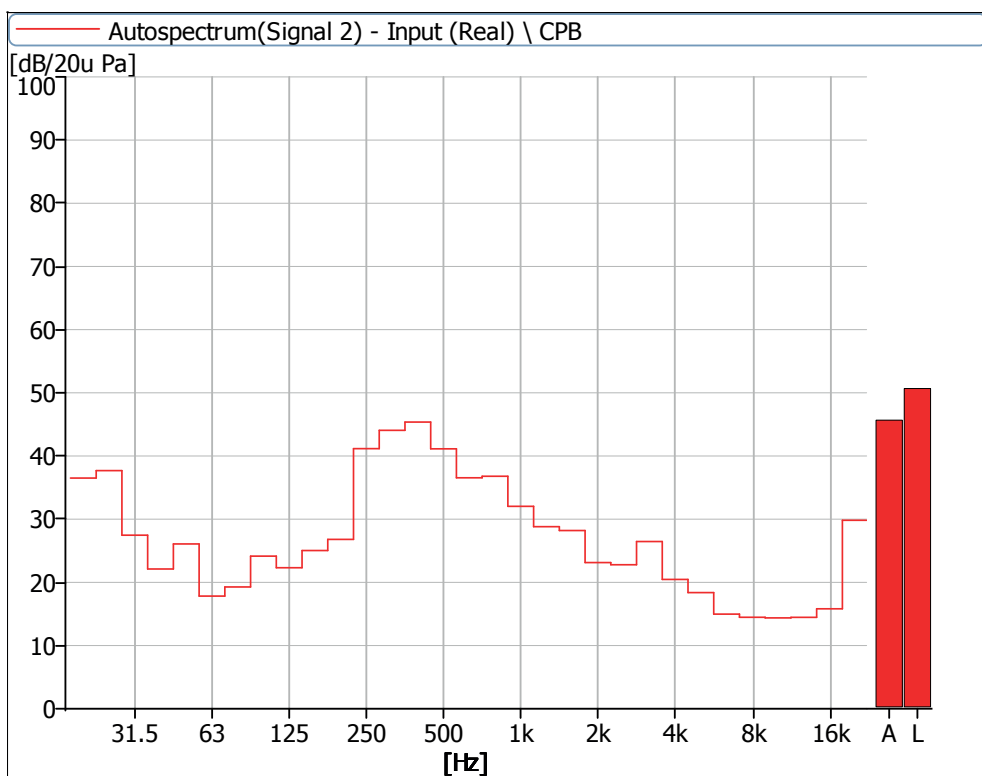


Figure 26 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 4)

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
20	38.7	35.2	35.4	39.5	39.4	36.0	37.5	39.6
25	33.8	34.2	32.4	34.9	37.7	38.4	39.5	37.9
31.5	31.3	32.1	27.3	30.5	31.0	29.4	26.9	27.0
40	25.2	24.0	24.1	22.8	25.7	23.6	23.5	23.0
50	26.1	26.0	27.8	26.9	27.2	26.3	26.5	26.7
63	14.6	15.1	14.2	17.2	24.9	16.2	19.8	17.3
80	19.4	14.7	14.8	17.7	25.5	19.6	20.2	19.6
100	23.0	15.5	19.0	20.8	27.8	20.7	22.9	23.5
125	12.6	10.0	11.9	12.0	25.7	20.2	21.6	20.8
160	14.5	12.5	17.6	16.4	28.0	23.3	25.4	23.5
200	17.6	13.7	16.9	15.7	28.4	27.0	26.7	28.1
250	15.0	11.7	15.3	13.4	40.6	40.7	40.8	40.0
315	16.7	17.2	17.9	19.4	43.3	43.7	43.8	43.1
400	17.7	18.4	17.5	16.7	49.1	48.8	48.8	46.7
500	22.0	21.6	20.8	19.7	45.2	42.9	44.2	42.3
630	17.2	18.9	19.2	18.1	37.7	35.6	36.2	36.2
800	16.9	17.9	18.1	16.4	38.8	37.0	38.6	37.5
1000	28.4	27.5	24.4	26.3	34.2	33.1	32.1	33.0
1250	28.5	29.6	30.1	27.4	30.9	30.5	30.5	30.6
1600	26.3	26.3	25.4	22.5	29.7	27.5	28.5	27.1
2000	18.5	14.8	16.8	14.8	26.5	24.3	24.4	23.8
2500	14.8	12.5	14.9	13.4	27.1	24.3	28.1	22.4
3150	17.6	16.8	17.0	16.9	23.1	22.1	22.8	21.2
4000	14.1	12.8	15.4	14.5	22.2	19.9	20.2	18.9
5000	8.3	7.8	12.8	12.7	22.3	15.4	17.3	16.3
6300	9.7	8.5	13.8	13.6	21.4	14.1	16.2	15.5
8000	12.8	7.8	13.7	13.6	17.0	11.5	14.8	14.5
10000	9.3	7.8	13.9	13.8	21.3	9.7	14.4	14.2
12500	8.8	7.8	14.3	14.3	18.5	8.8	14.6	14.4
16000	9.7	8.4	15.1	15.0	17.6	13.3	17.3	16.1
20000	25.9	22.4	22.4	22.6	33.5	32.7	34.6	31.3

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	42.0	40.5	40.0	42.3	52.8	52.1	52.4	51.1
A-weighted dB(A)	34.2	34.0	33.8	32.5	48.3	47.3	47.8	46.2
Average sound pressure level dB(A)	33.7				47.5			

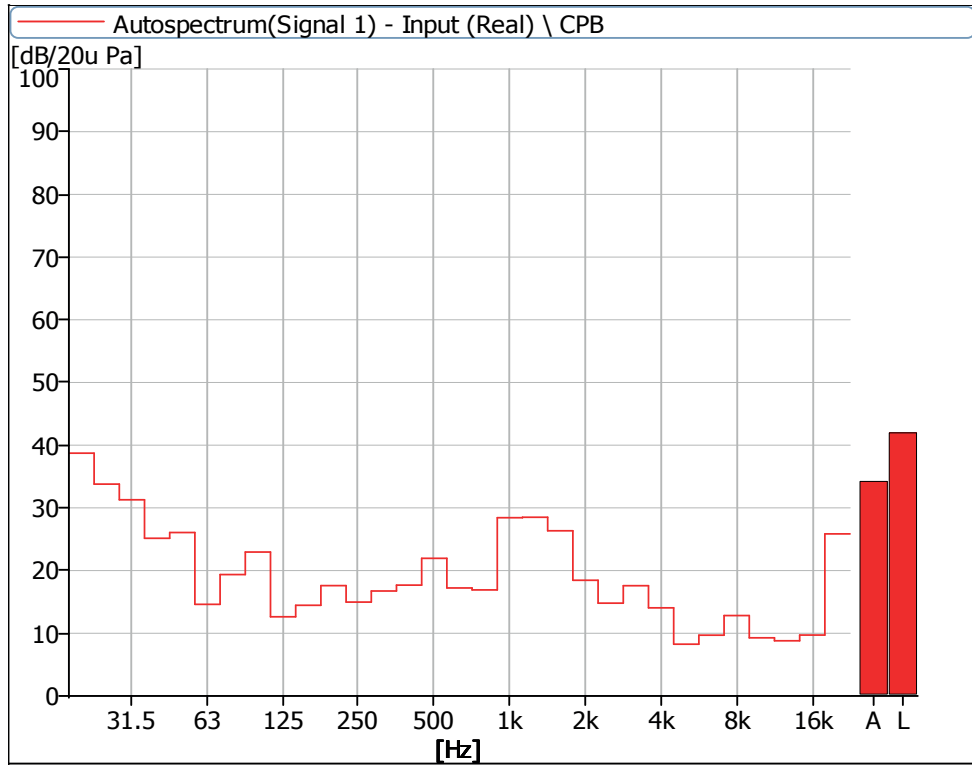


Figure 27 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 1)

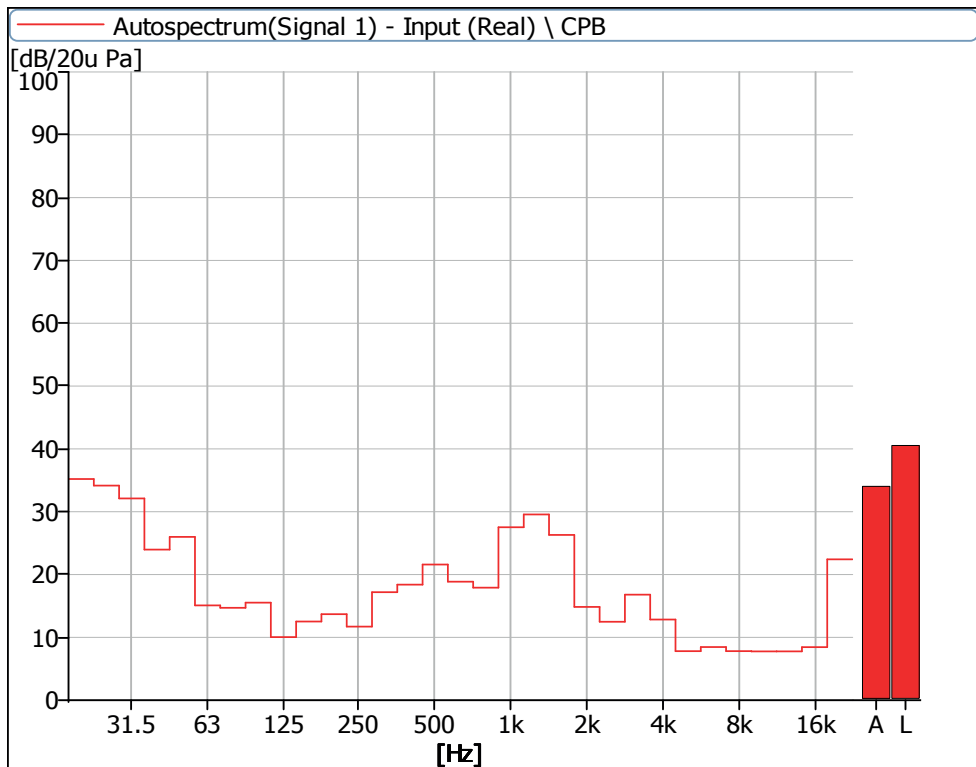


Figure 28 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 2)

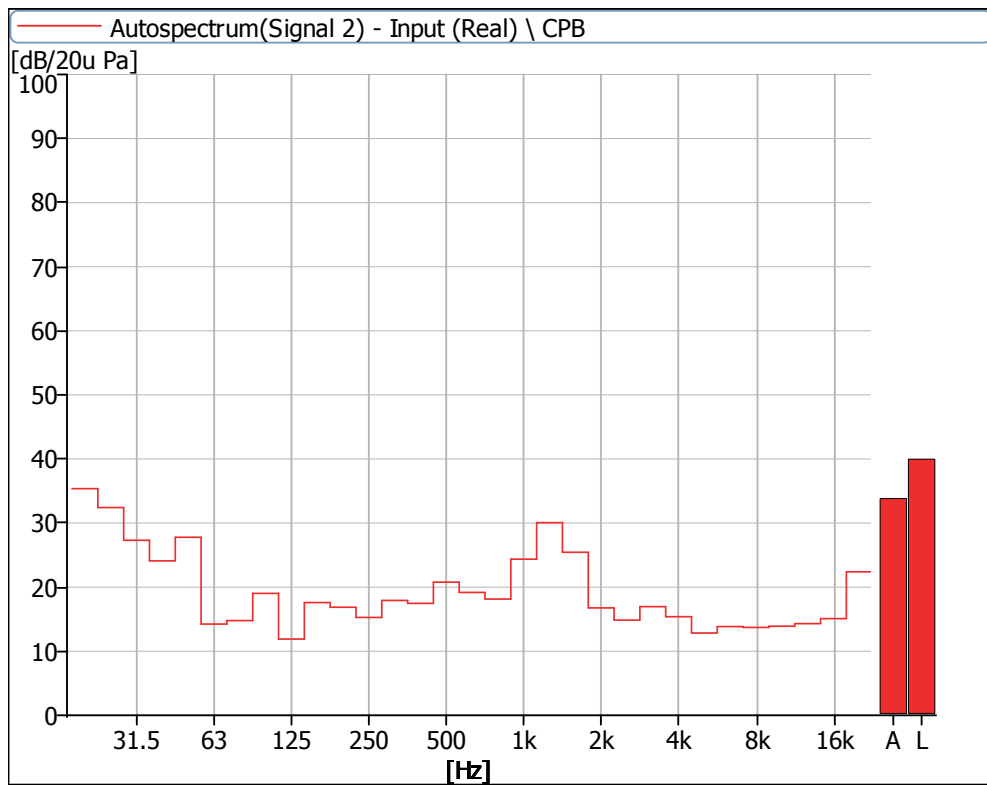


Figure 29 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 3)

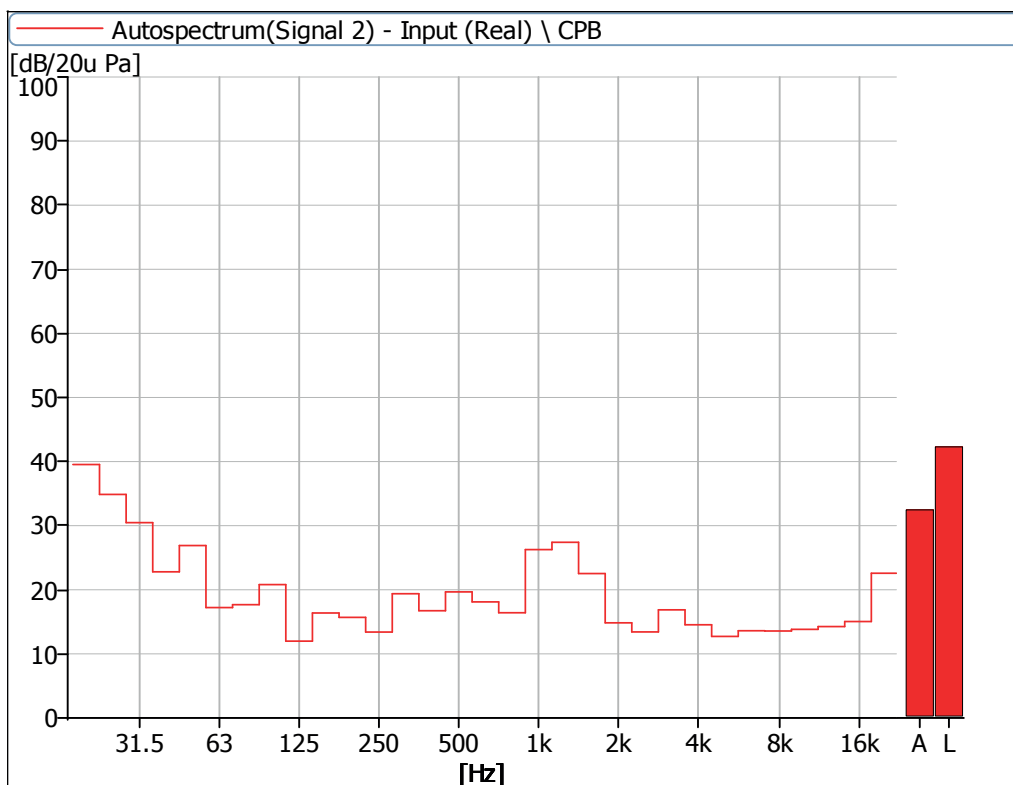


Figure 30 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 4)

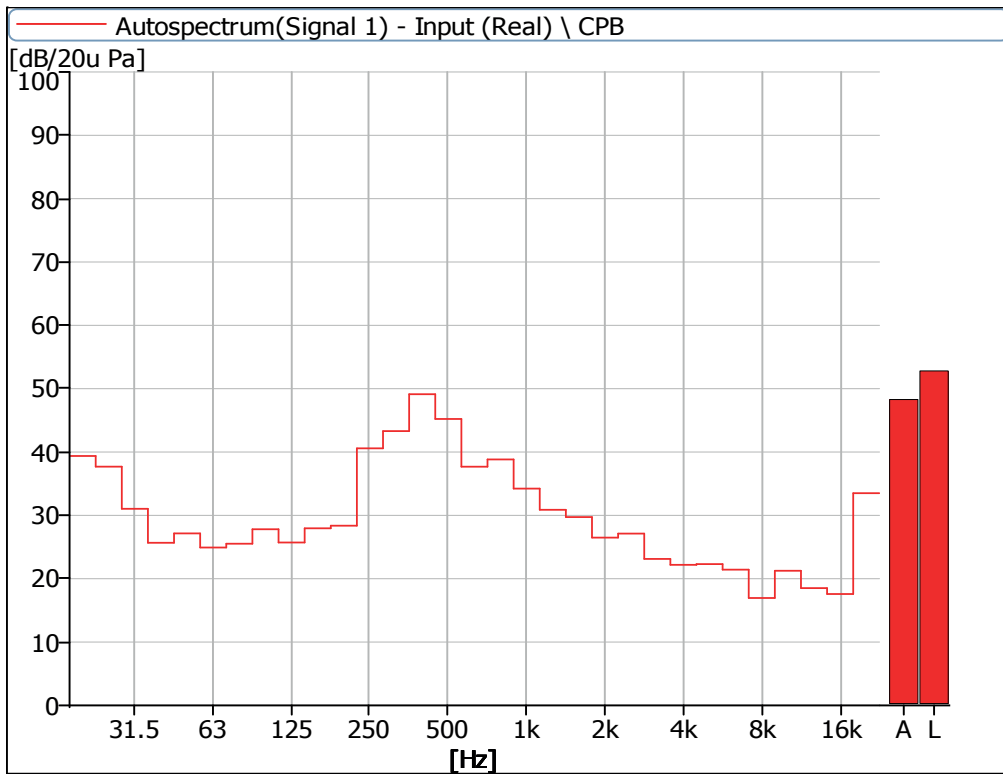


Figure 31 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 1)

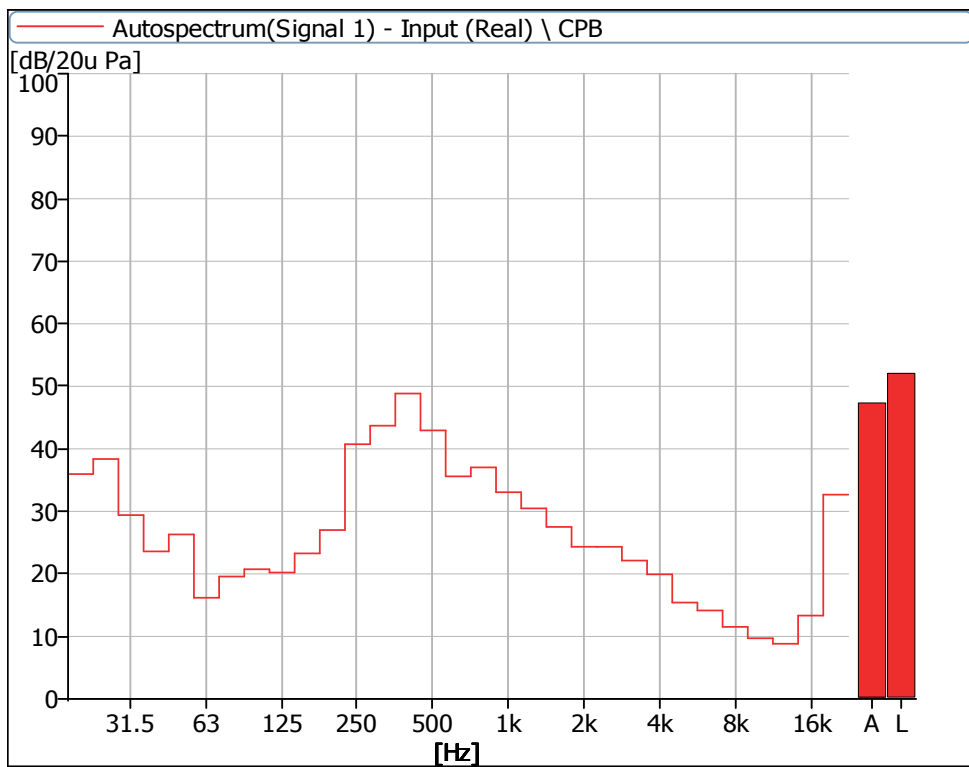


Figure 32 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 2)

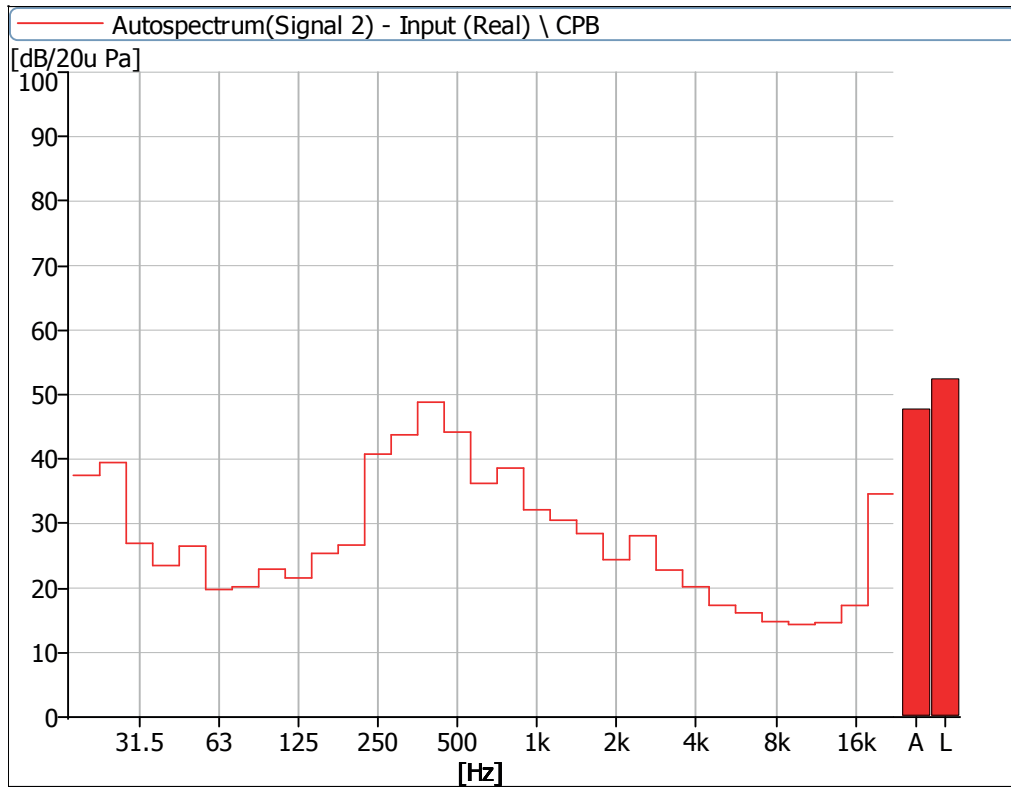


Figure 33 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 3)

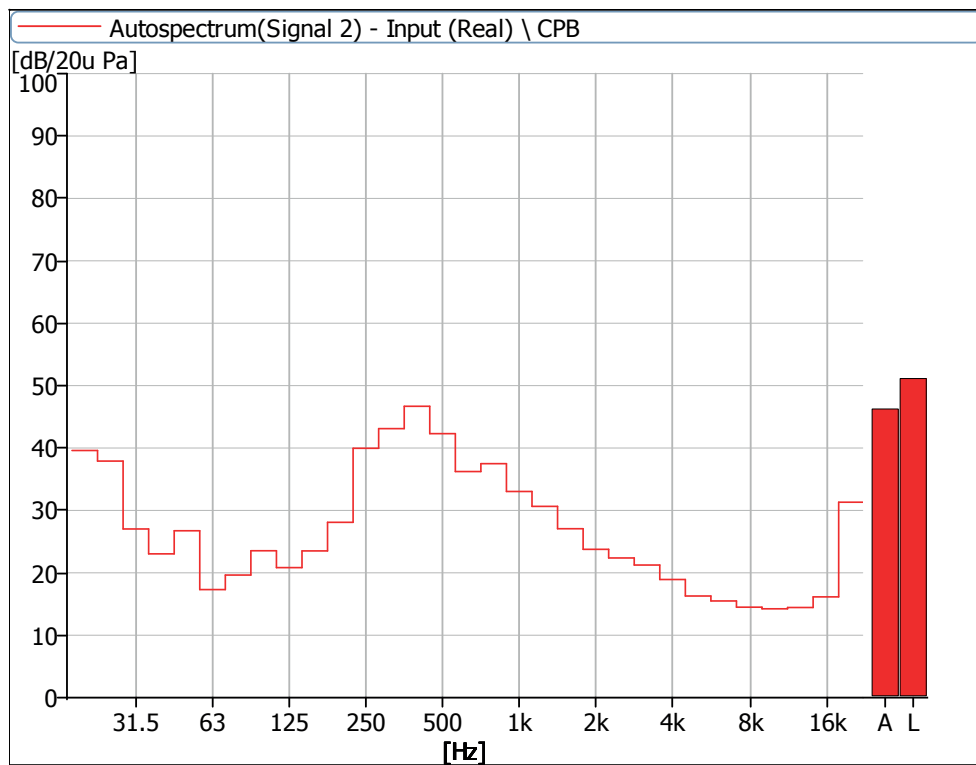


Figure 34 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 4)



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