



HURACÁN LT

NOISE MEASUREMENTS



AYRTON
Digital Lighting

1 Test 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	43.4	33.2	34.0	34.9	34.6	34.5	33.3	35.8
25	41.0	35.9	36.1	36.0	38.0	34.7	35.8	34.4
31.5	35.2	26.3	26.3	25.0	27.3	26.2	27.5	25.0
40	31.1	25.6	24.9	23.0	27.0	27.0	25.8	23.7
50	26.4	23.8	24.2	24.1	24.2	24.4	23.6	24.5
63	21.8	15.8	19.5	16.9	19.7	18.0	19.0	20.8
80	22.8	17.2	20.5	19.2	24.8	22.2	22.7	24.0
100	24.8	18.8	24.4	21.7	27.0	25.7	26.2	28.2
125	27.7	21.7	26.8	24.2	36.3	38.1	37.2	39.0
160	28.6	24.7	30.6	25.8	38.3	37.5	38.5	37.7
200	34.1	32.1	34.9	31.3	46.1	45.4	45.5	45.6
250	37.9	32.4	39.0	33.2	46.8	45.8	45.7	46.9
315	33.9	31.0	33.3	31.4	42.3	42.1	43.1	42.9
400	33.1	30.2	32.8	29.2	44.6	44.7	46.4	44.1
500	40.0	38.3	39.9	39.1	46.6	44.8	45.8	46.9
630	37.8	34.8	36.5	34.0	40.5	41.3	40.1	40.8
800	29.8	30.1	31.6	30.0	39.7	39.1	39.2	40.6
1000	28.8	28.0	29.3	27.2	35.4	36.3	36.1	34.7
1250	30.1	28.3	30.4	30.6	33.9	33.8	33.6	33.9
1600	30.0	28.3	29.5	27.9	32.8	32.5	32.7	32.4
2000	29.3	27.1	28.4	27.4	31.4	31.8	32.0	30.7
2500	25.4	24.0	25.6	24.5	29.7	29.7	30.2	29.2
3150	22.9	22.1	22.6	23.0	26.4	26.5	26.5	26.2
4000	19.8	20.4	21.2	21.3	23.7	25.2	25.6	24.7
5000	17.5	17.4	18.1	18.2	22.4	23.1	23.6	22.1
6300	14.5	13.5	15.5	15.0	18.1	18.4	19.6	18.8
8000	13.7	11.6	15.6	14.6	16.8	16.5	18.1	17.7
10000	13.4	10.7	17.2	14.6	15.0	15.0	17.1	16.9
12500	15.5	14.2	16.9	15.6	17.0	17.7	19.7	18.3
16000	22.2	31.6	20.9	27.7	28.0	28.7	32.8	27.5
20000	43.2	53.2	40.8	49.2	49.0	49.7	54.2	48.4

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	51.7	53.8	47.6	50.5	55.0	54.7	56.9	54.8
A-weighted dB(A)	42.8	45.4	42.5	43.2	49.2	48.8	50.2	49.2
Average sound pressure level dB(A)	43.7				49.4			

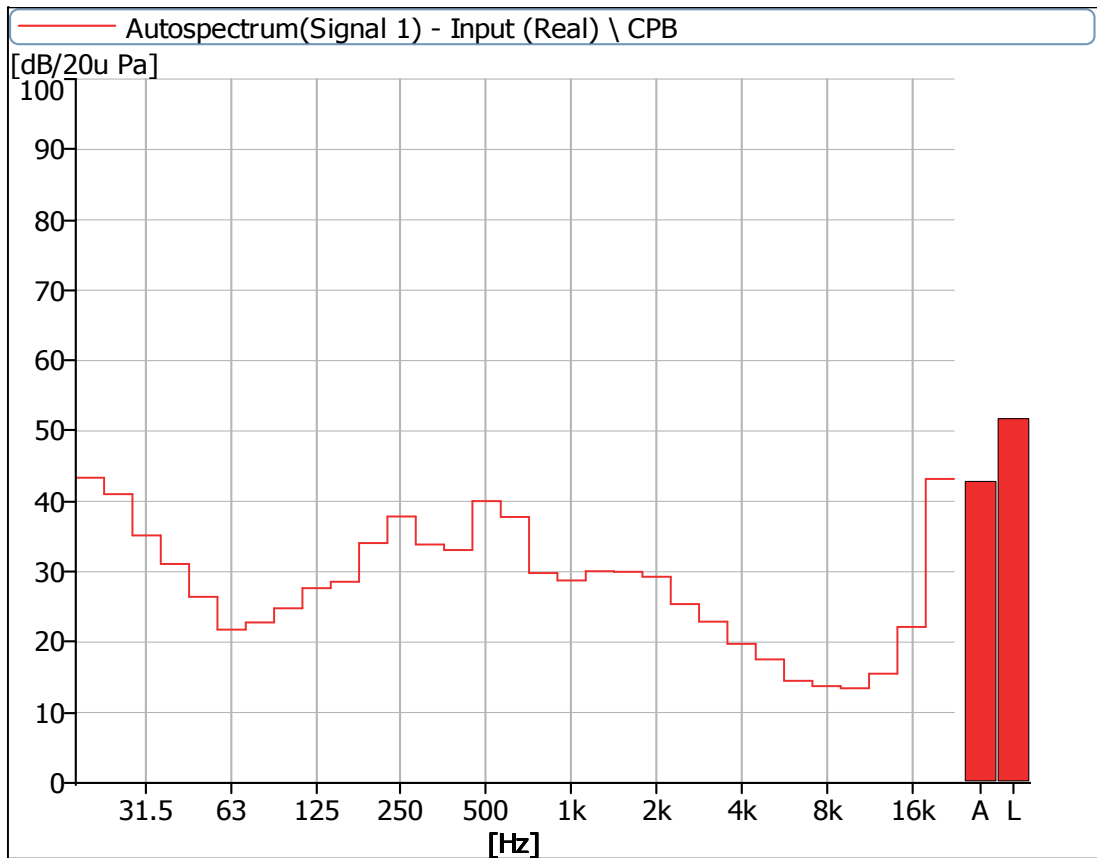


Figure 3 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 1)

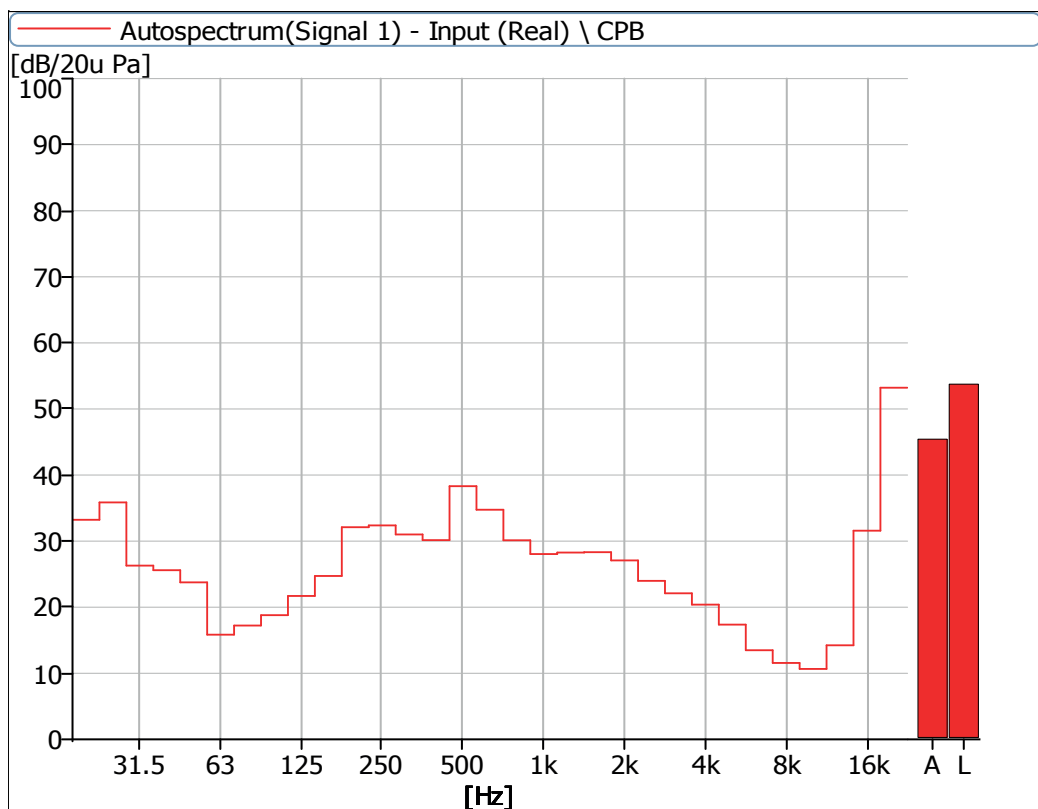


Figure 4 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 2)

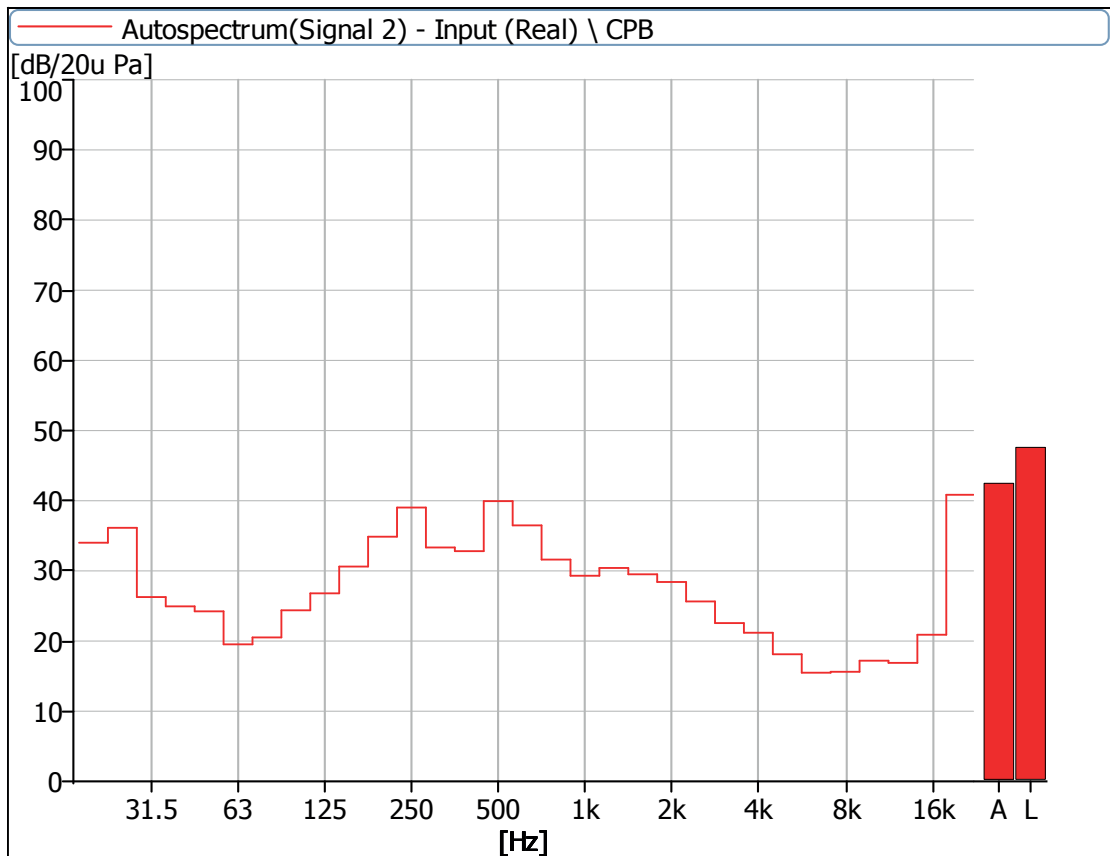


Figure 5 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 3)

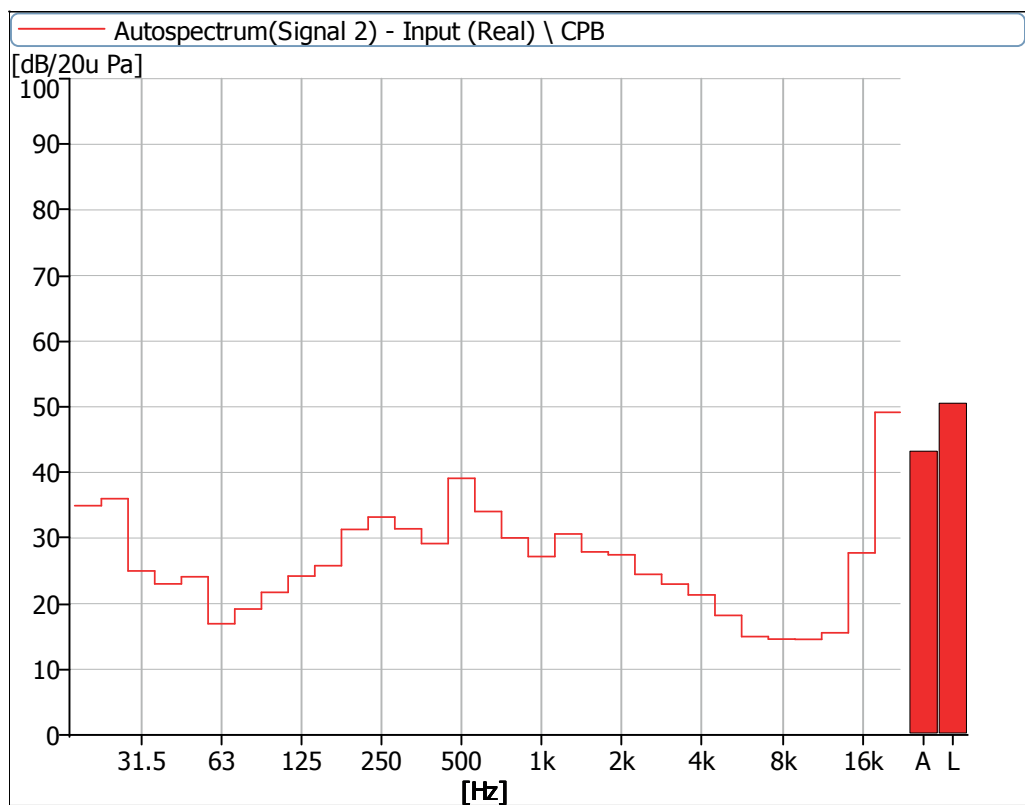


Figure 6 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 4)

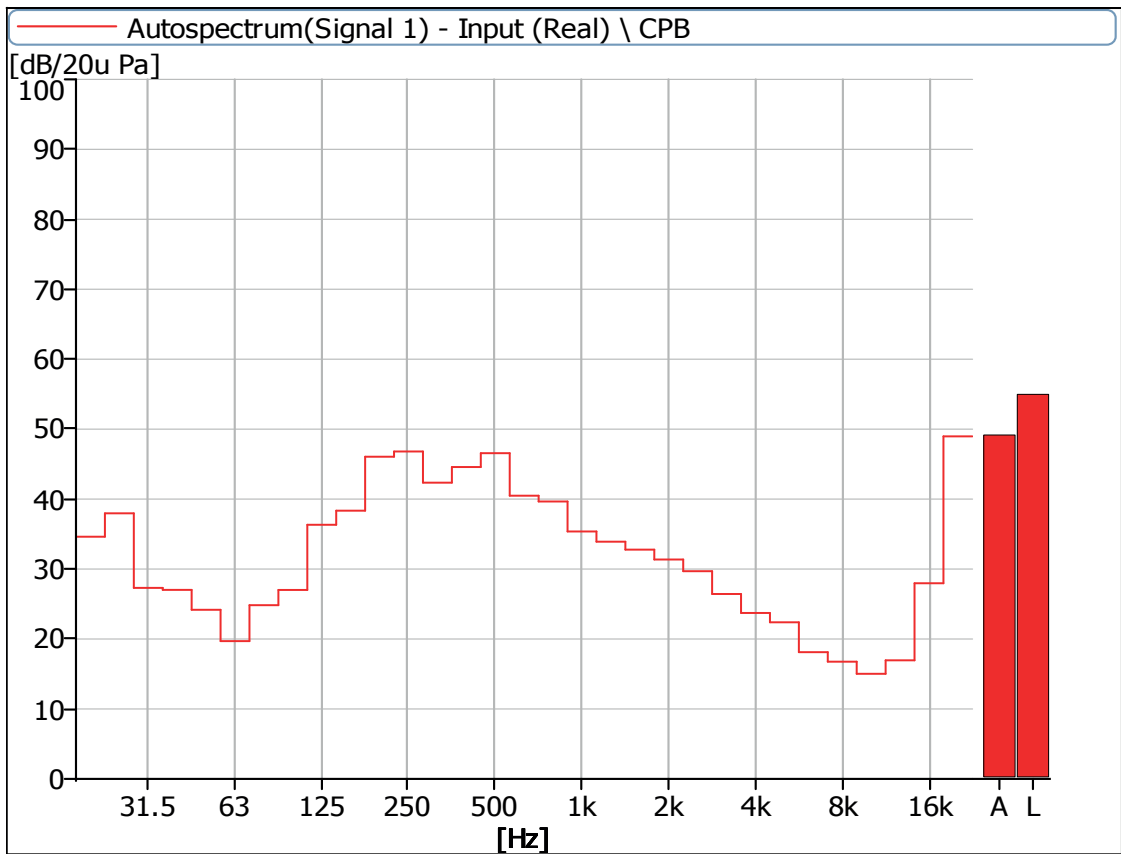


Figure 7 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 1)

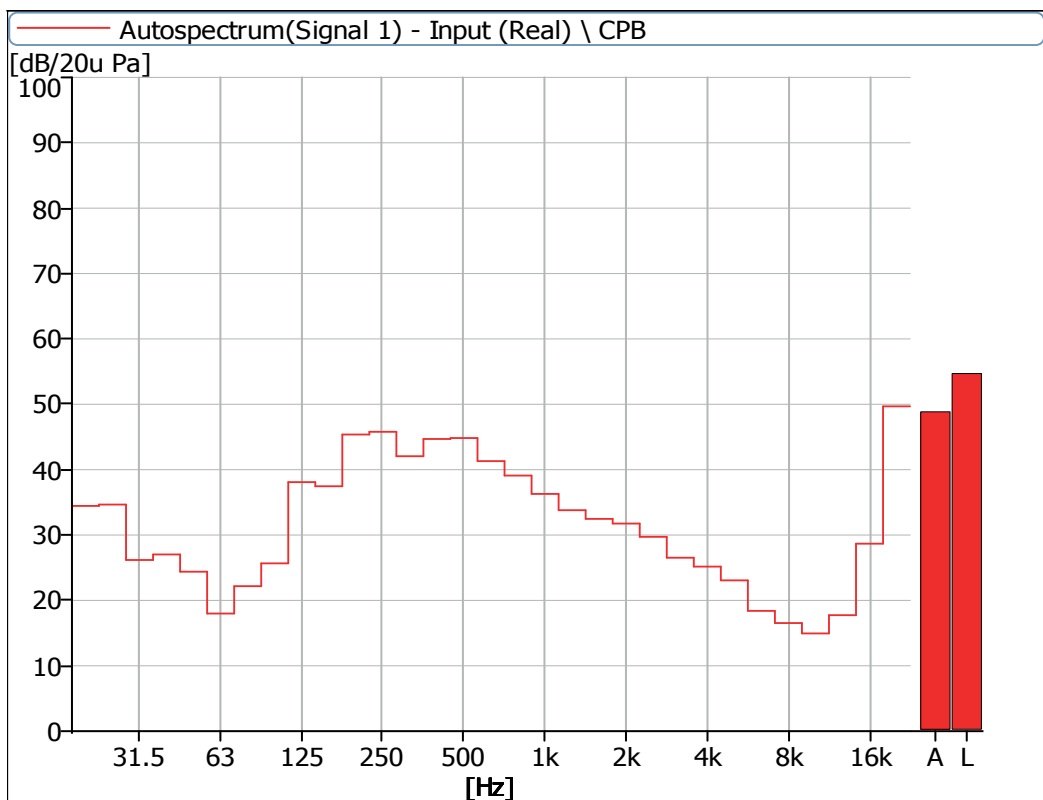


Figure 8 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 2)

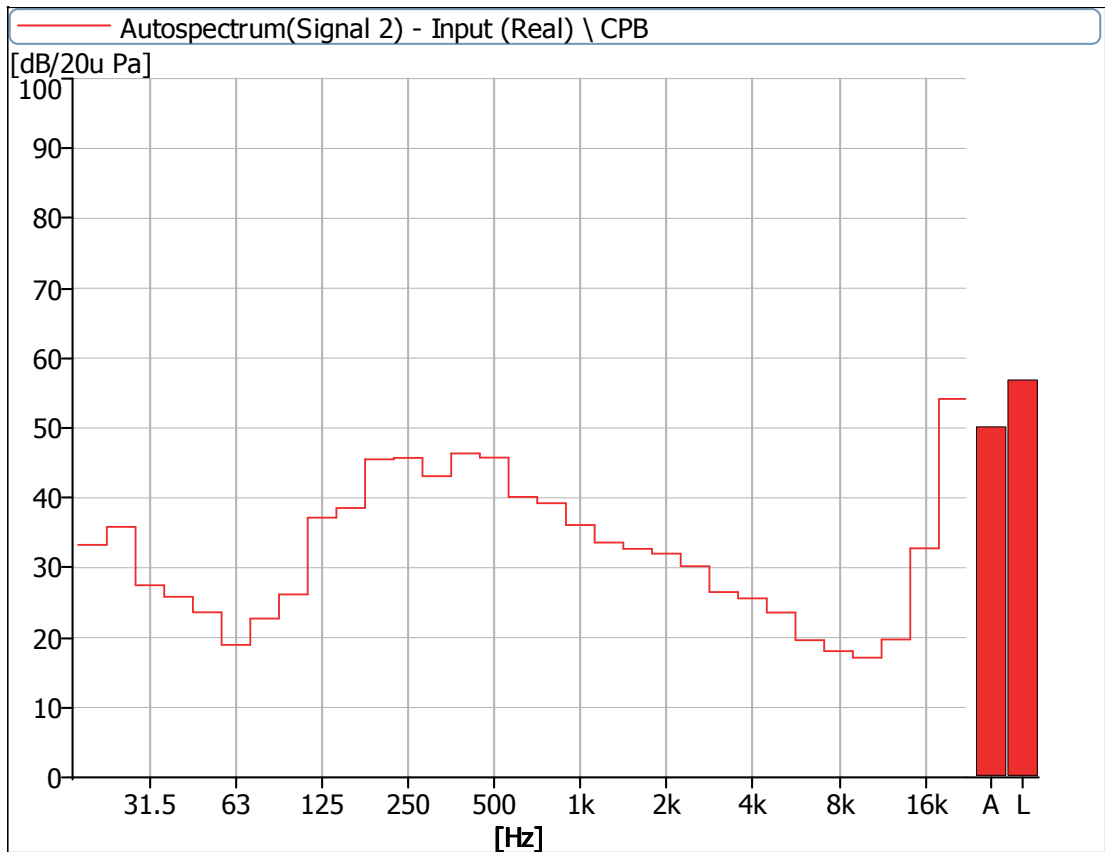


Figure 9 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 3)

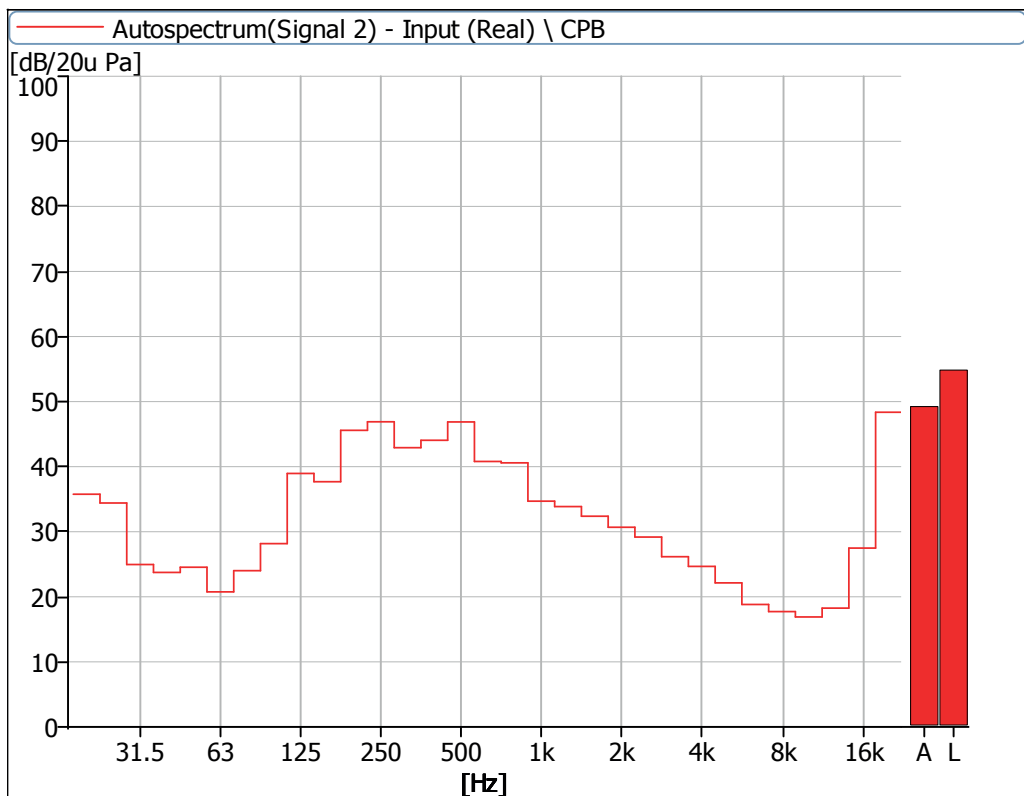


Figure 10 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 4)

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	34.2	32.6	32.7	34.4	37.5	33.7	33.5	35.4
25	35.5	35.1	33.6	35.5	39.7	35.0	35.4	35.5
31.5	26.4	25.4	26.5	25.4	37.4	28.0	27.7	26.8
40	28.0	26.1	26.5	22.7	33.7	29.2	26.0	27.0
50	26.7	24.4	26.7	24.4	31.8	25.9	24.4	26.7
63	26.1	21.7	25.7	21.9	25.9	22.4	22.3	24.6
80	26.1	21.5	25.6	23.2	27.9	25.9	24.9	28.4
100	28.1	23.2	28.1	24.9	29.3	26.3	27.8	29.2
125	29.8	25.9	29.1	24.3	37.4	36.4	38.2	36.9
160	31.0	28.6	32.9	29.2	39.9	39.8	40.1	40.0
200	38.3	38.1	39.7	37.0	47.9	46.1	48.0	46.4
250	41.8	36.9	41.2	36.3	47.8	46.4	46.8	47.3
315	43.9	40.8	42.0	41.4	44.7	44.1	44.7	45.2
400	48.5	44.3	46.7	44.5	48.6	47.6	49.0	48.1
500	46.0	45.3	46.0	45.5	48.4	48.2	47.4	50.2
630	47.7	45.3	47.4	44.5	45.6	45.4	44.4	44.9
800	43.3	45.9	45.0	45.4	45.5	44.4	45.0	46.3
1000	42.1	40.2	41.0	40.1	44.3	45.5	44.4	43.9
1250	43.8	40.7	43.4	42.3	43.7	42.8	41.6	44.7
1600	42.0	38.6	41.3	37.9	41.5	41.7	40.7	42.1
2000	42.1	38.0	41.0	37.9	40.6	41.5	40.6	40.8
2500	39.6	36.7	38.9	36.9	38.8	39.9	38.2	39.1
3150	37.6	34.3	36.8	35.1	37.1	37.1	36.2	37.0
4000	35.3	32.3	34.5	32.7	35.1	35.8	35.8	36.0
5000	33.9	32.8	33.6	33.0	34.7	36.2	35.7	34.3
6300	31.2	29.1	29.5	27.4	31.4	32.2	31.4	30.8
8000	27.7	26.3	27.4	25.5	28.3	28.7	28.9	27.8
10000	25.8	22.9	24.7	22.8	25.0	25.5	25.9	24.6
12500	24.4	20.2	23.2	21.2	22.9	23.4	24.1	22.7
16000	22.2	28.7	28.6	27.1	29.0	28.7	31.5	27.8
20000	36.7	50.0	49.6	48.0	49.5	49.1	52.6	48.4

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	55.4	54.9	55.9	54.4	57.8	57.0	58.0	57.5
A-weighted dB(A)	53.4	51.8	53.2	51.6	54.0	53.9	53.7	54.4
Average sound pressure level dB(A)	52.6				54.0			

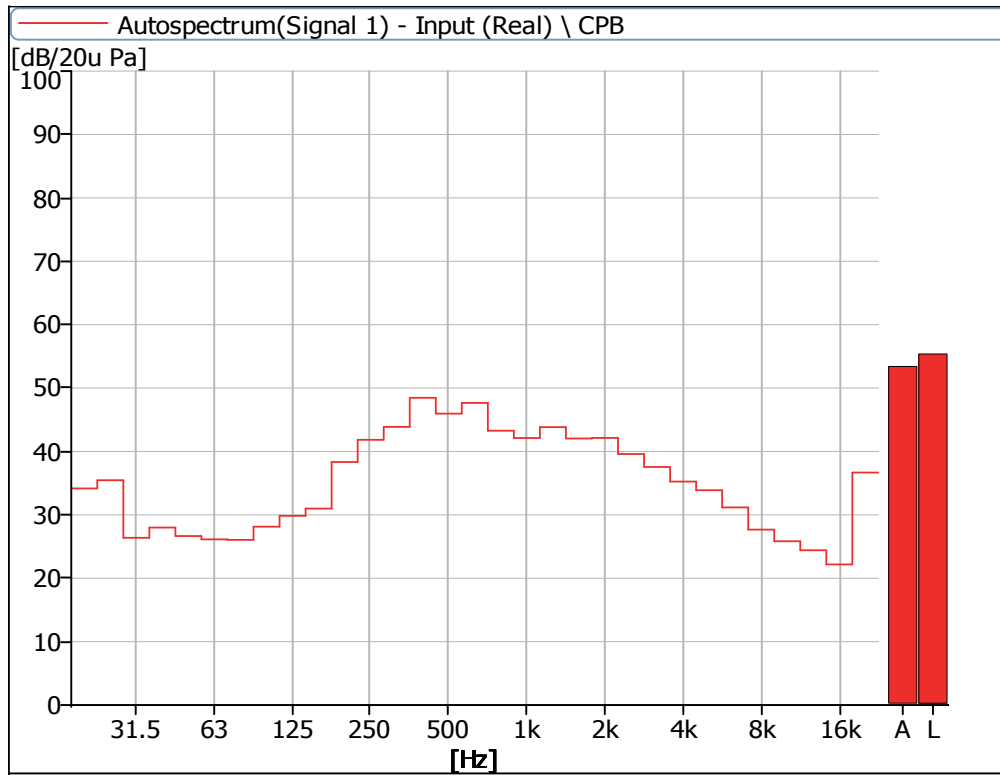


Figure 11 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 1)

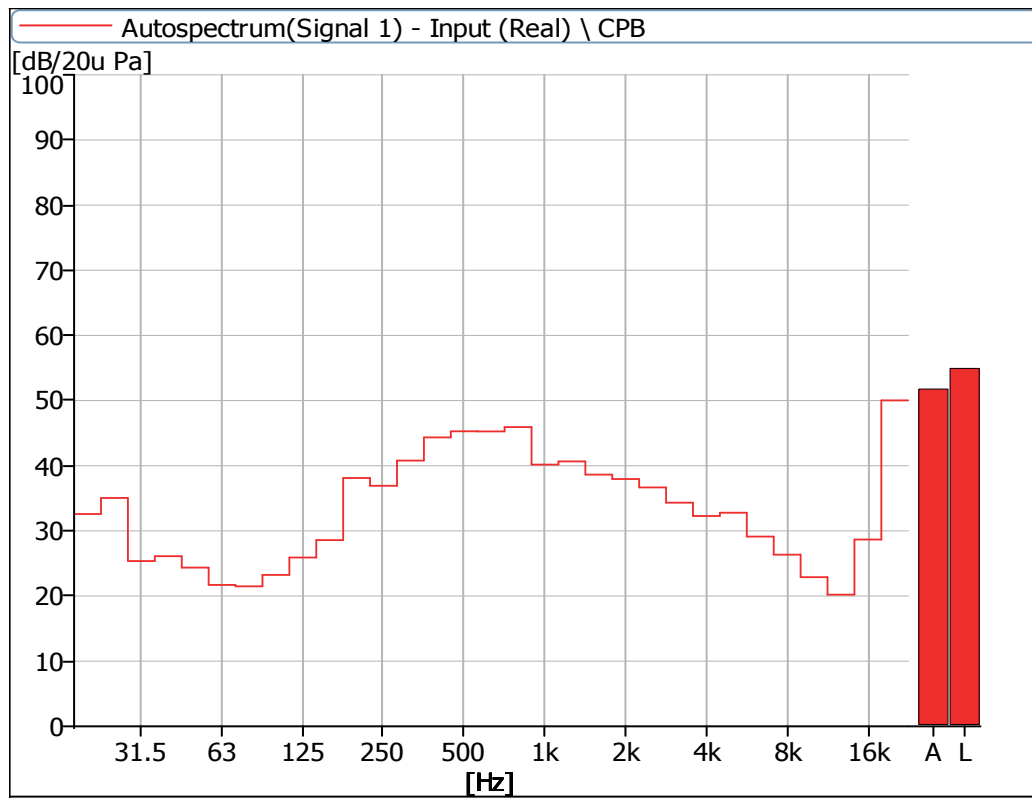


Figure 12 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 2)

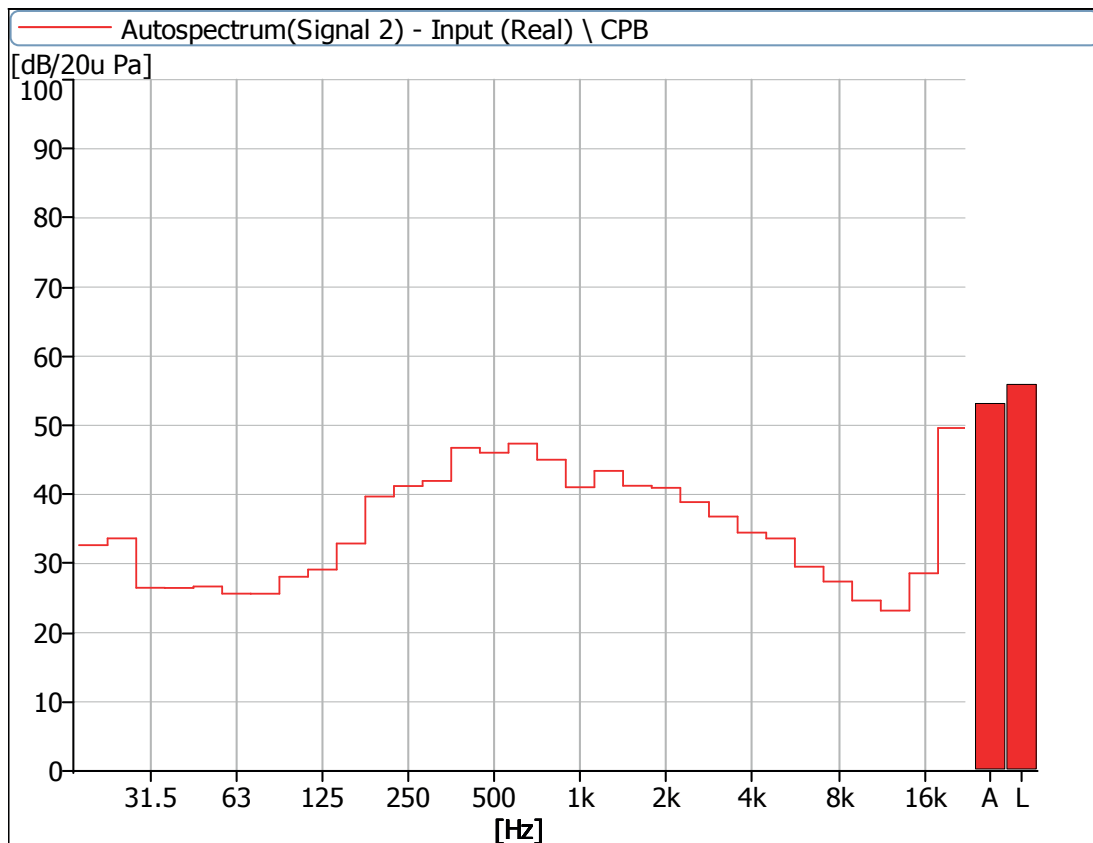


Figure 13 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 3)

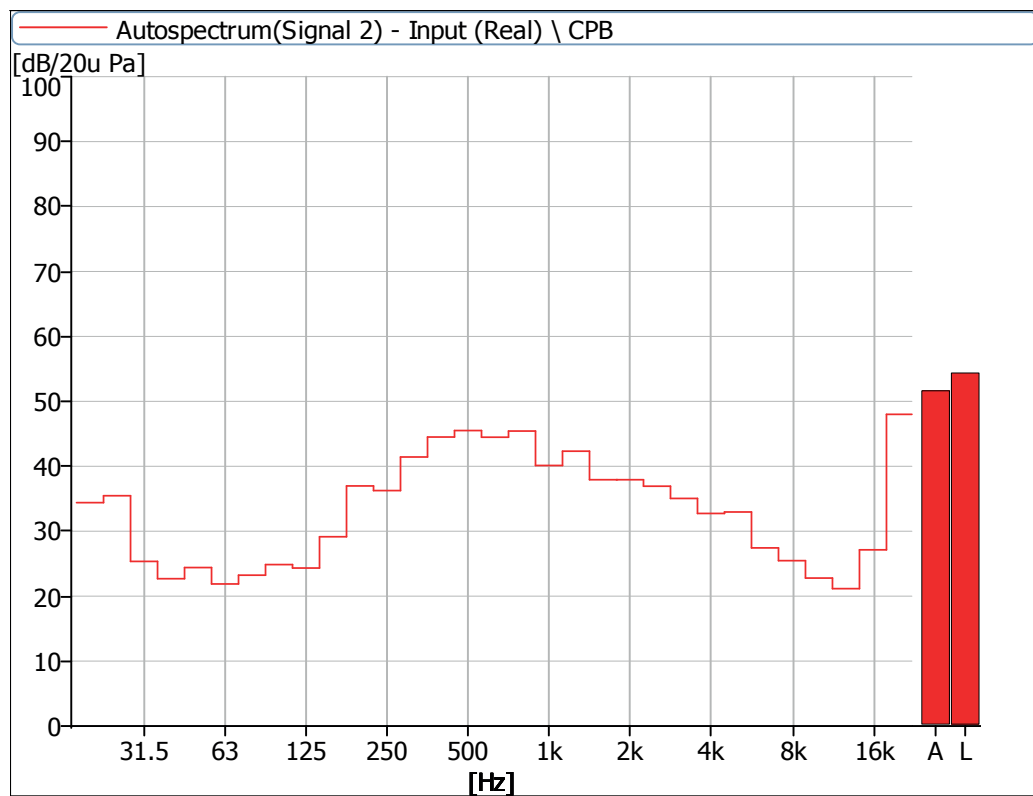


Figure 14 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 4)

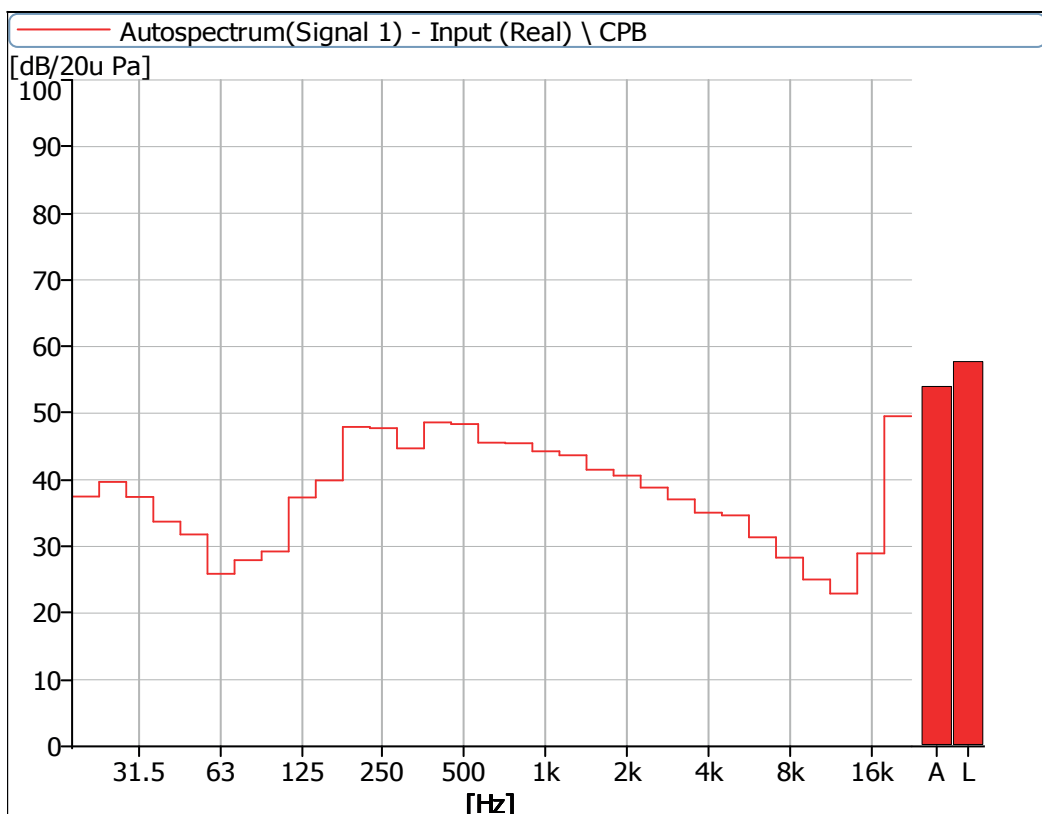


Figure 15 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 1)

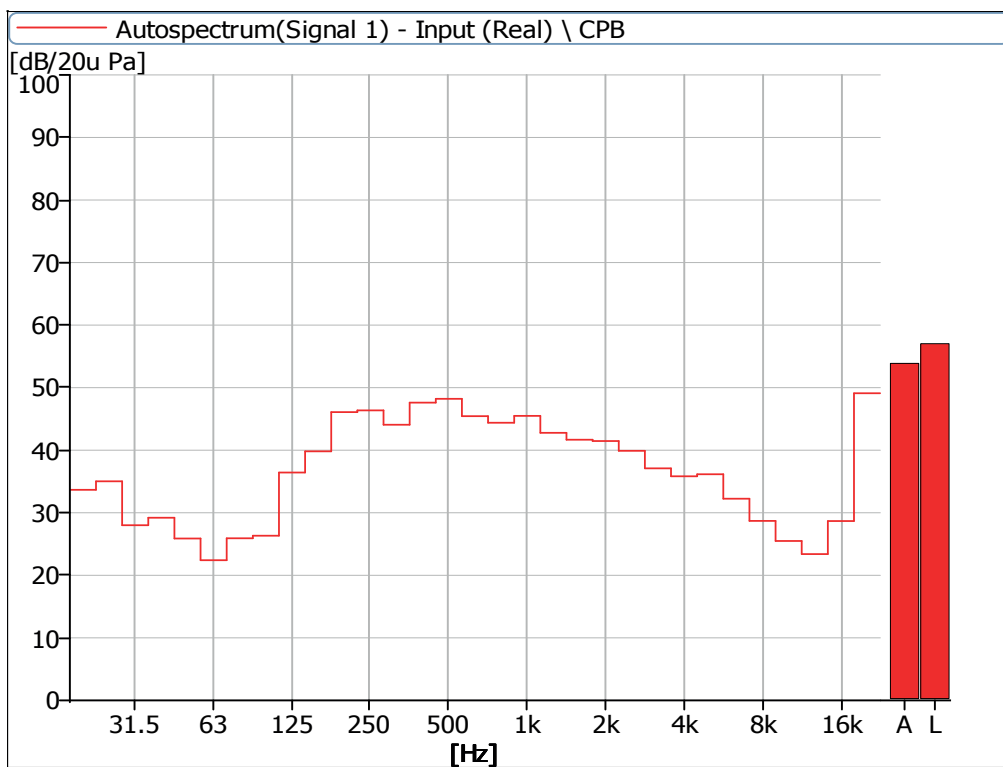


Figure 16 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 2)

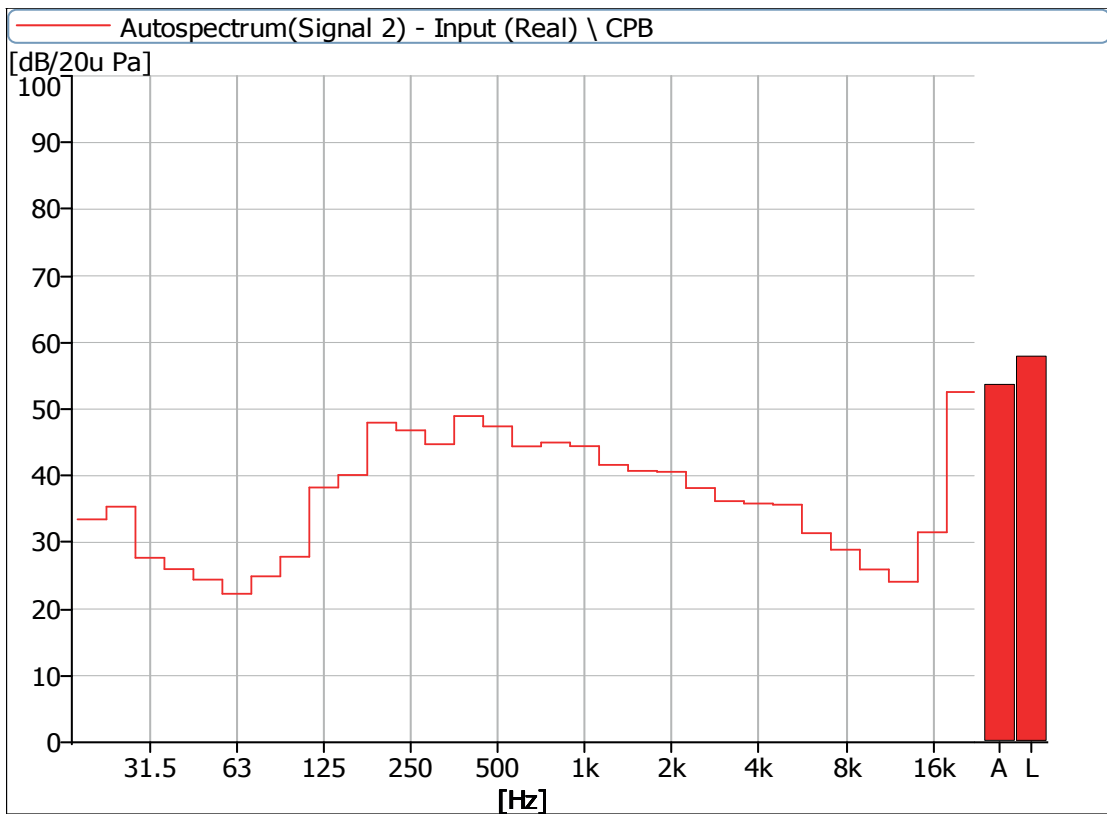


Figure 17 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 3)

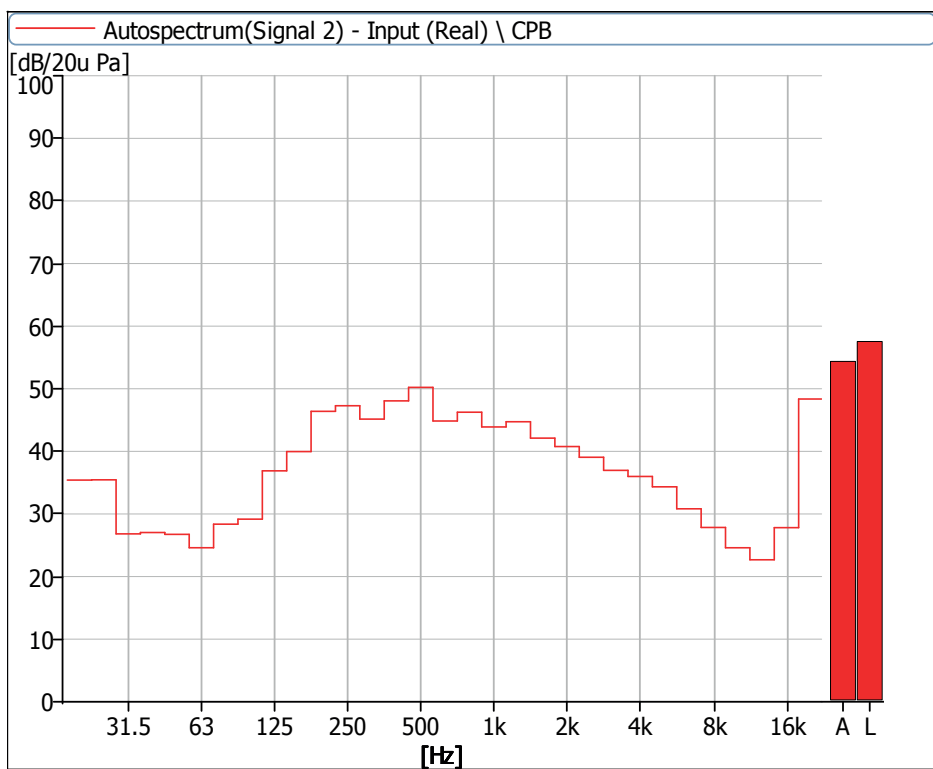


Figure 18 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 4)

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	30.4	31.2	30.6	33.1	31.2	31.3	31.6	32.3
25	35.1	34.2	33.2	33.9	33.6	32.4	32.7	32.9
31.5	25.7	24.3	24.5	24.6	26.0	26.4	26.3	24.4
40	26.7	27.7	24.5	25.0	28.4	27.9	25.8	26.2
50	24.0	24.9	25.0	25.0	24.5	25.4	24.2	25.3
63	18.2	16.1	17.2	19.1	20.3	17.8	20.5	19.5
80	21.2	16.0	18.4	19.6	25.2	23.2	23.6	24.3
100	23.2	15.4	22.5	20.0	26.4	22.4	25.0	26.0
125	23.0	16.4	22.6	16.9	36.0	34.8	36.5	35.8
160	23.0	19.8	25.0	20.7	39.3	40.1	39.5	40.1
200	32.4	28.7	30.3	28.5	47.3	47.1	47.1	47.4
250	26.5	21.7	25.7	21.3	46.9	45.1	45.9	46.8
315	28.8	26.1	27.6	26.7	42.5	41.6	42.8	42.6
400	27.6	23.8	27.1	23.6	44.7	46.1	47.5	44.7
500	31.1	30.0	31.0	30.1	47.0	45.2	46.4	47.4
630	27.9	25.8	27.5	24.9	41.7	41.1	40.0	39.8
800	21.5	22.6	23.3	22.1	39.9	38.8	39.3	39.6
1000	20.2	18.9	19.6	19.0	35.1	35.0	36.2	33.7
1250	25.1	23.7	24.9	22.1	32.7	32.0	32.1	31.5
1600	22.0	20.2	20.5	20.5	29.9	28.8	30.3	29.2
2000	21.5	18.7	20.9	18.1	28.9	28.0	29.3	28.2
2500	23.1	19.7	19.1	18.0	28.1	26.6	28.2	27.6
3150	14.0	12.4	15.4	14.9	24.8	23.5	25.3	24.4
4000	11.4	10.9	13.9	14.3	20.0	19.8	22.7	21.7
5000	12.2	10.5	14.7	13.6	20.6	20.9	21.9	21.3
6300	10.8	9.0	13.7	13.2	17.4	17.5	19.4	19.0
8000	10.9	8.3	14.1	13.6	15.5	15.0	17.1	17.4
10000	11.9	8.9	15.9	13.9	14.0	13.8	16.9	16.4
12500	14.0	13.7	16.3	14.5	16.0	17.3	19.4	17.7
16000	21.3	31.2	25.7	20.4	26.2	28.6	32.1	26.6
20000	42.4	52.9	46.9	40.7	46.7	49.6	53.4	47.3

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	44.9	53.1	47.8	43.5	54.8	54.9	56.8	54.8
A-weighted dB(A)	36.9	43.8	39.1	35.0	49.1	48.8	50.1	49.0
Average sound pressure level dB(A)	40.0				49.3			

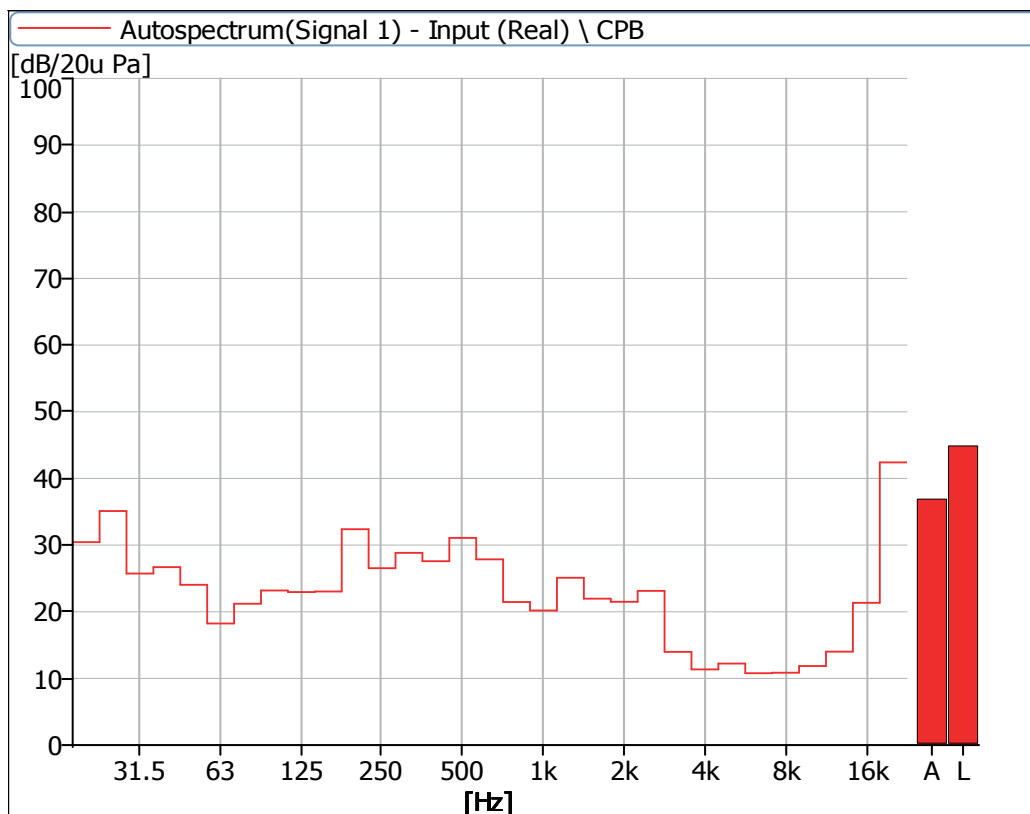


Figure 19 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 1)

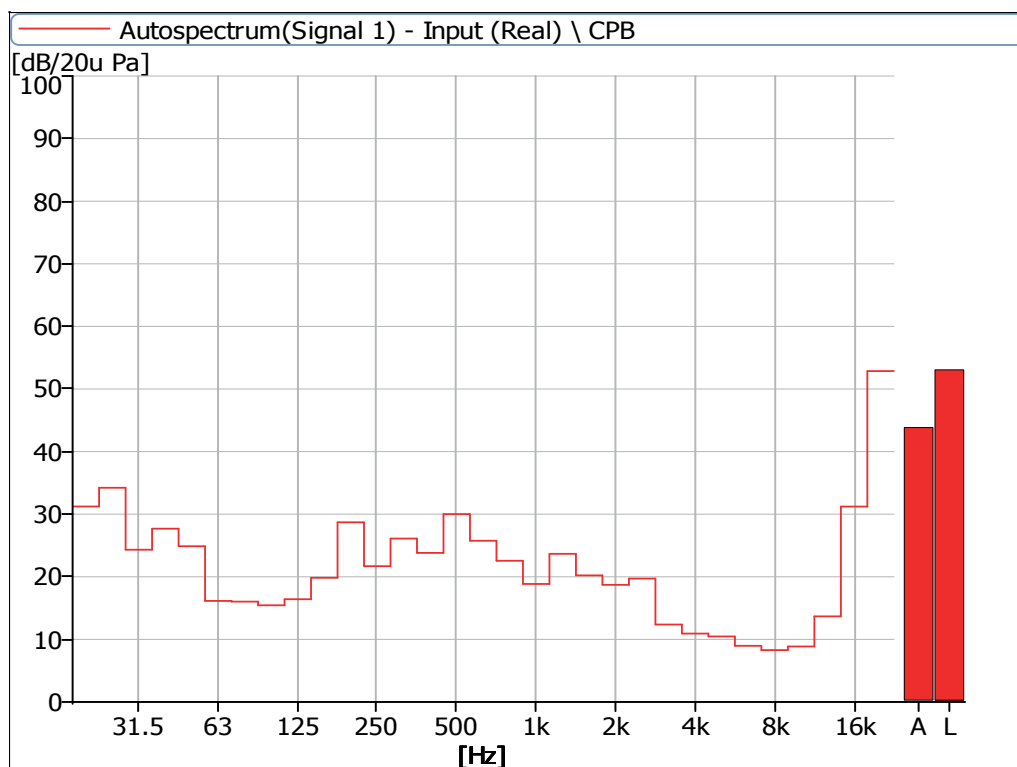


Figure 20 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 2)

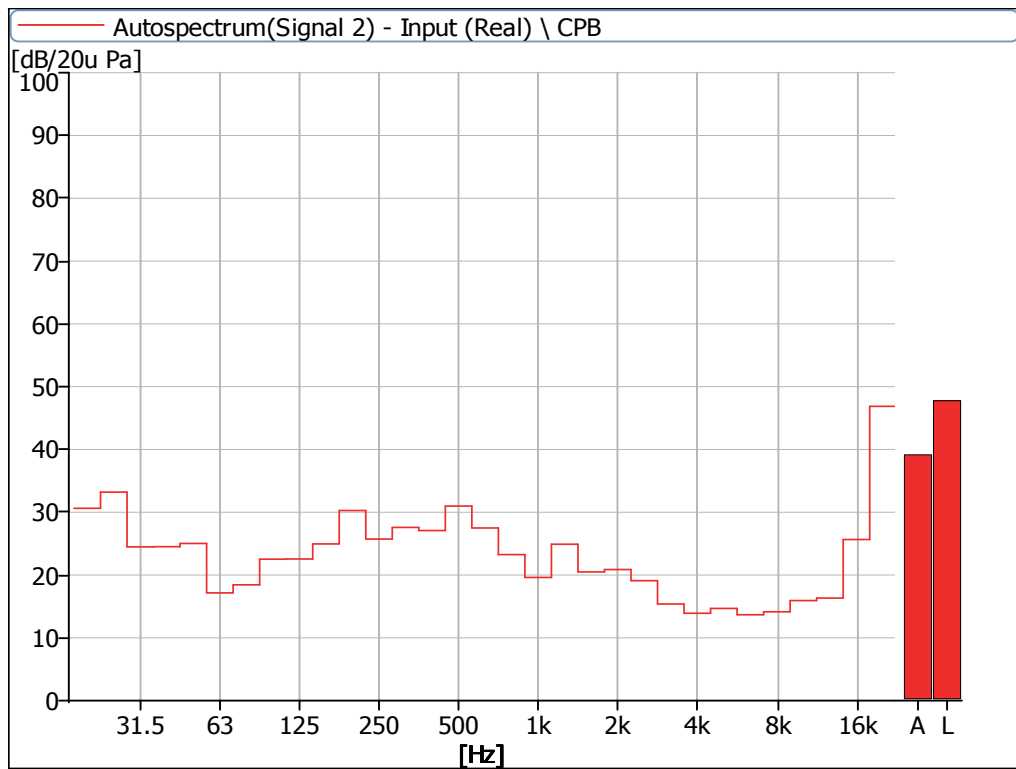


Figure 21 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 3)

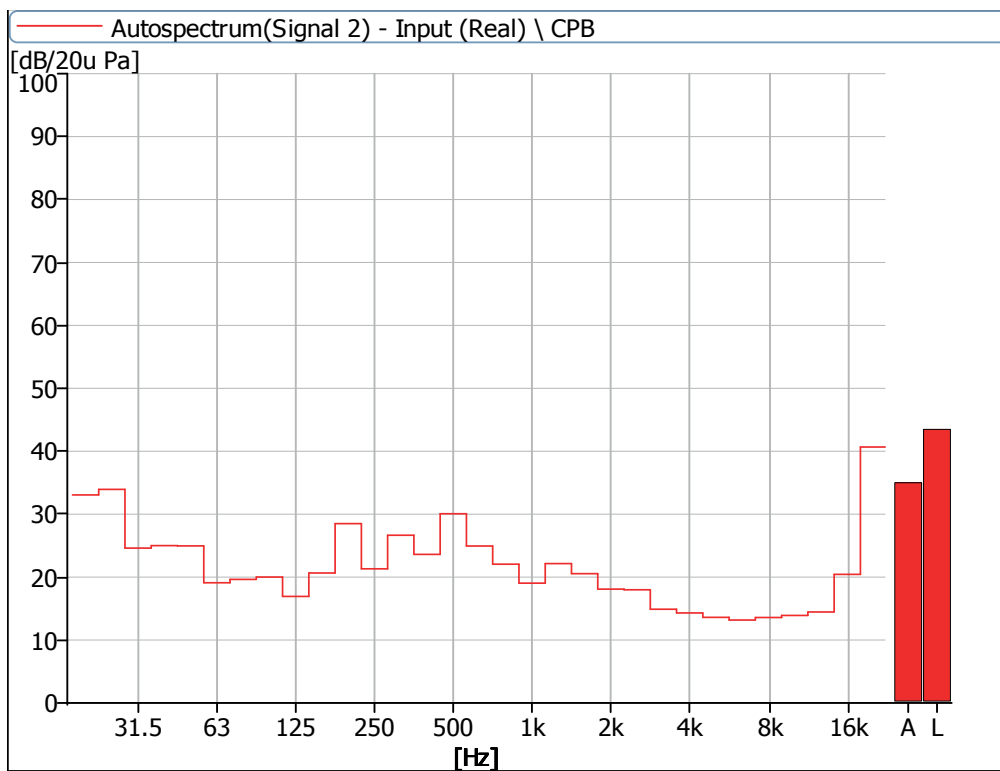


Figure 22 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 4)

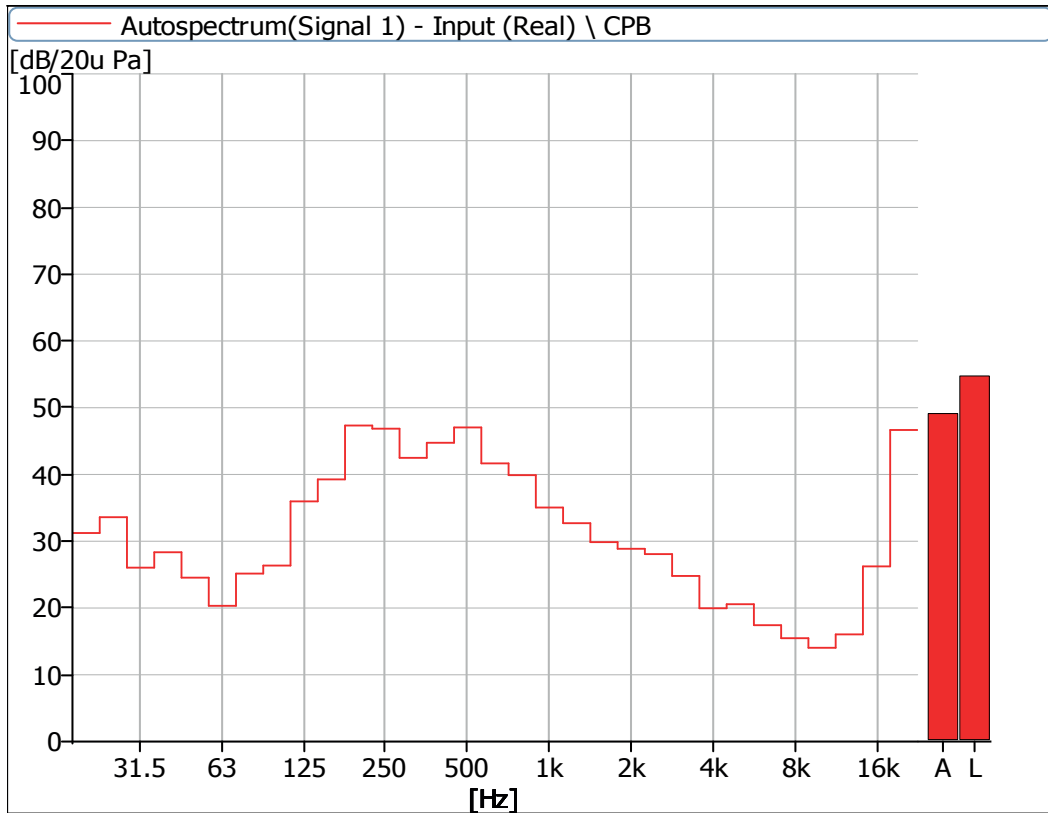


Figure 23 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 1)

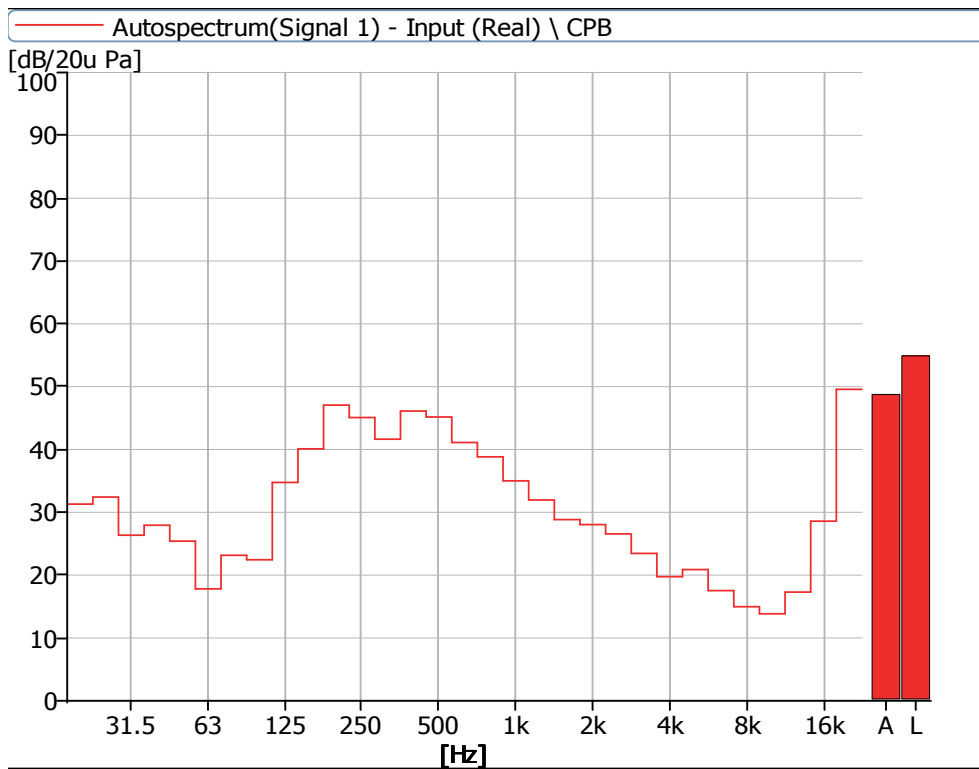


Figure 24 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 2)

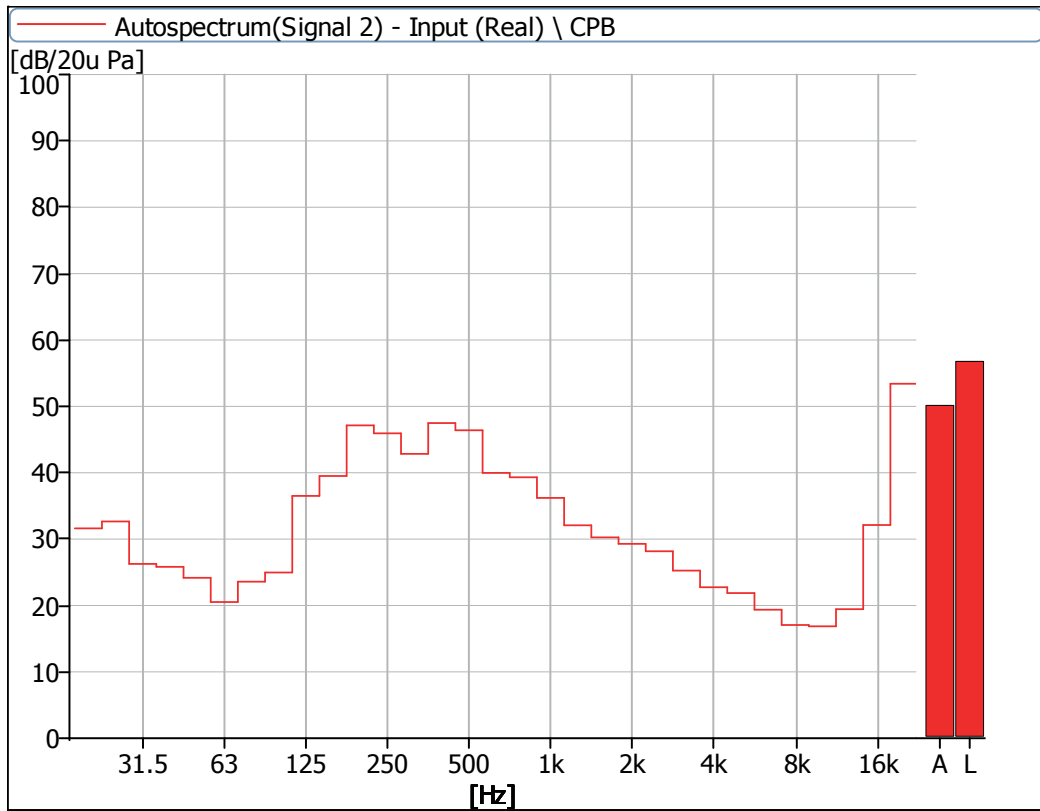


Figure 25 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 3)

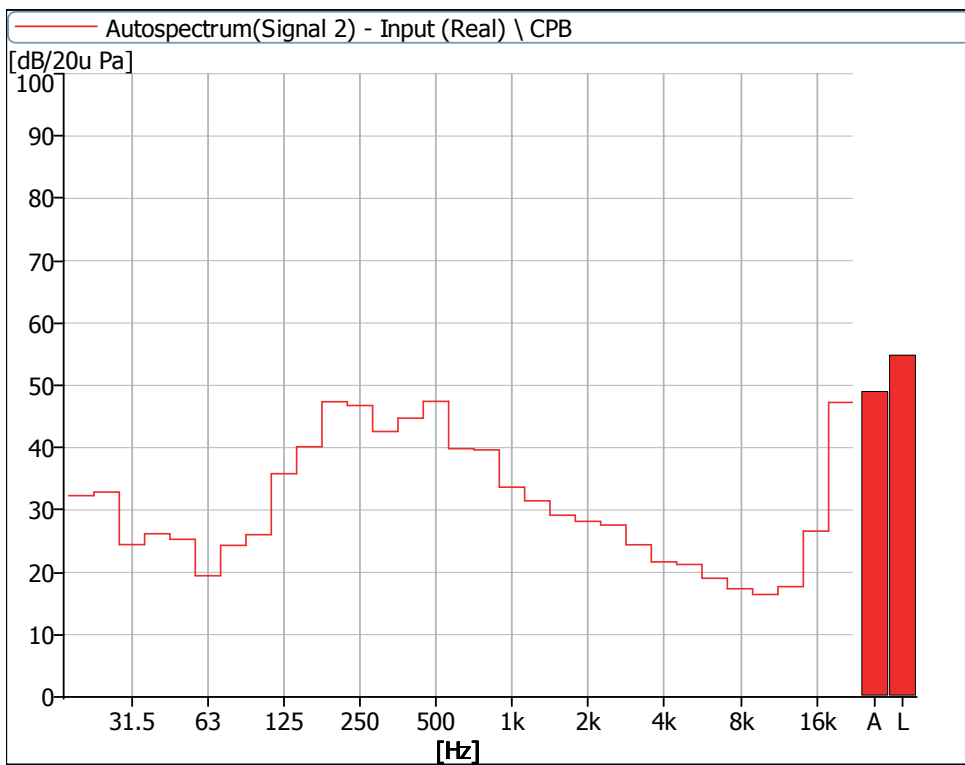


Figure 26 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 4)

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	35.2	34.0	34.4	35.8	30.5	30.0	30.6	31.9
25	35.3	33.5	31.9	34.8	34.8	36.1	33.2	34.8
31.5	25.8	26.4	25.6	25.4	25.6	25.1	26.5	24.1
40	26.9	26.6	24.1	23.0	28.0	28.4	25.8	25.6
50	23.7	24.0	23.5	23.6	25.0	25.5	24.8	24.2
63	16.6	13.3	15.3	15.6	18.5	17.2	18.0	18.8
80	19.9	14.9	17.2	18.0	24.8	21.9	22.3	24.2
100	21.6	13.8	21.5	18.2	24.3	20.8	23.1	24.2
125	18.8	13.9	20.1	13.8	33.5	32.9	33.8	32.8
160	22.1	18.6	25.2	18.9	38.1	38.5	38.9	38.8
200	21.6	18.8	21.3	18.3	46.9	45.3	47.2	45.9
250	22.7	17.7	21.7	18.0	46.0	44.7	45.1	45.6
315	23.8	22.6	23.5	23.2	41.3	41.7	41.6	42.3
400	24.5	22.6	24.9	22.4	43.5	44.4	46.3	42.7
500	23.9	23.5	24.3	23.2	46.3	43.8	45.0	45.9
630	22.0	19.8	22.2	19.5	40.3	39.9	38.5	38.5
800	18.5	17.0	18.0	16.4	38.0	37.6	38.4	37.7
1000	18.3	14.6	18.7	15.8	33.6	33.9	34.4	31.9
1250	26.7	20.7	22.1	20.0	31.1	30.9	30.9	29.6
1600	19.0	17.6	19.6	18.4	28.6	27.3	28.8	27.3
2000	17.5	14.8	18.7	15.4	27.4	26.5	27.8	25.7
2500	15.2	15.3	15.5	15.8	26.1	24.7	25.9	25.4
3150	11.5	11.6	13.5	14.0	22.7	21.7	22.3	22.4
4000	9.9	10.8	13.3	13.9	18.5	18.3	20.6	20.1
5000	10.7	9.2	13.5	13.0	19.0	18.9	19.7	19.0
6300	9.6	7.9	13.6	13.3	15.7	15.6	17.0	16.6
8000	10.8	8.0	13.9	13.5	15.0	13.7	16.2	16.2
10000	11.8	8.5	15.3	13.9	13.5	12.8	15.8	15.6
12500	14.2	13.4	16.1	14.4	15.2	16.7	18.5	16.9
16000	21.2	30.9	27.2	20.7	26.7	27.9	31.0	26.2
20000	42.3	52.5	48.6	41.0	47.6	48.9	52.3	47.0

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	44.5	52.7	49.1	43.6	54.2	53.9	55.8	53.7
A-weighted dB(A)	35.2	43.3	39.8	33.5	48.2	47.6	48.9	47.6
Average sound pressure level dB(A)	39.6				48.1			

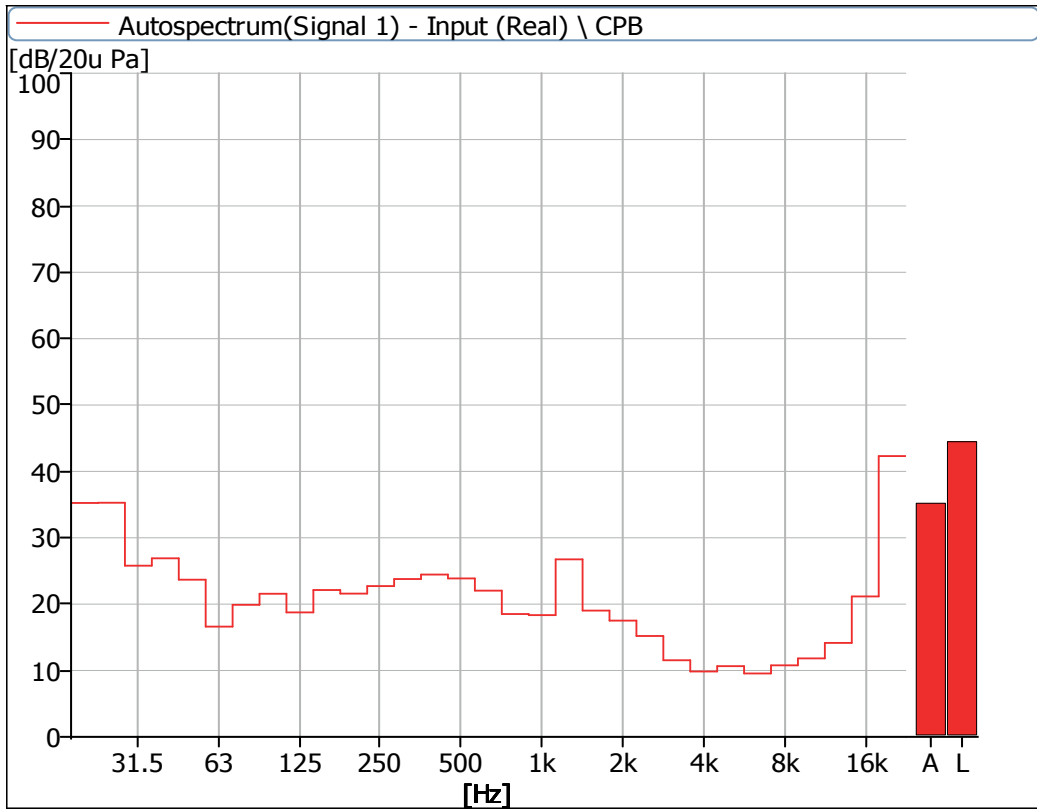


Figure 27 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 1)

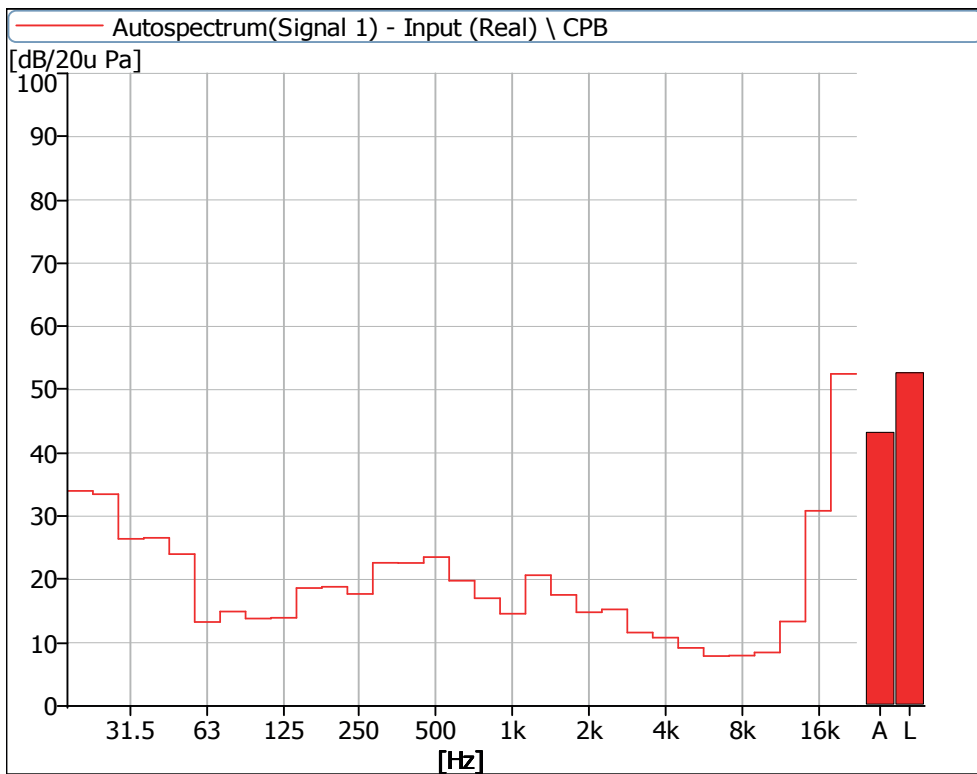


Figure 28 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 2)

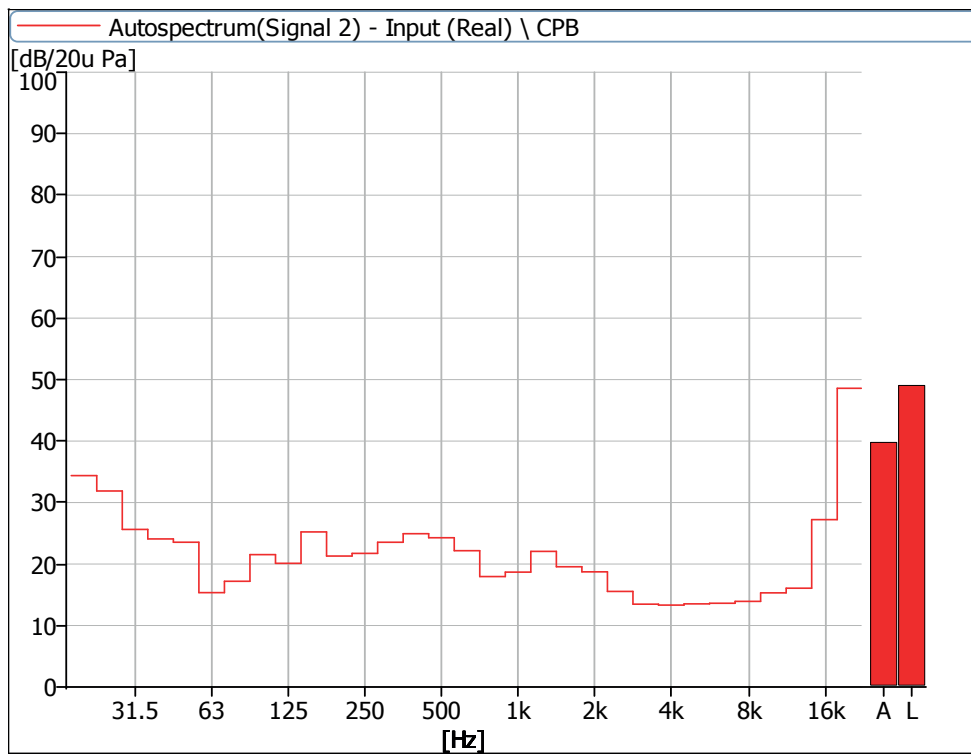


Figure 29 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 3)

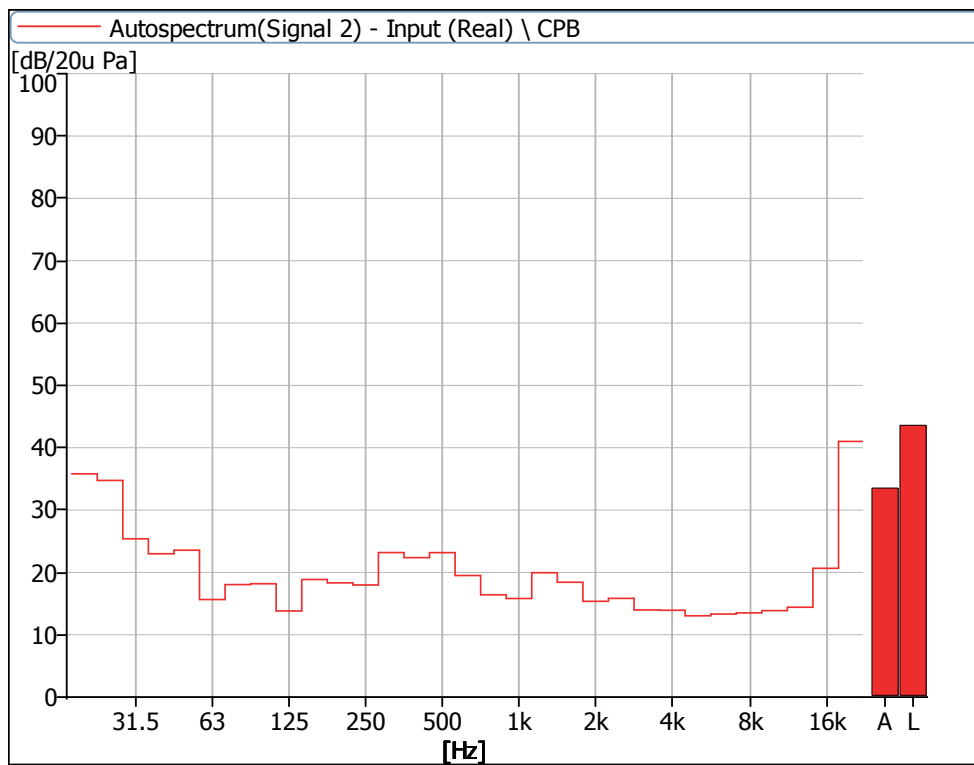


Figure 30 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 4)

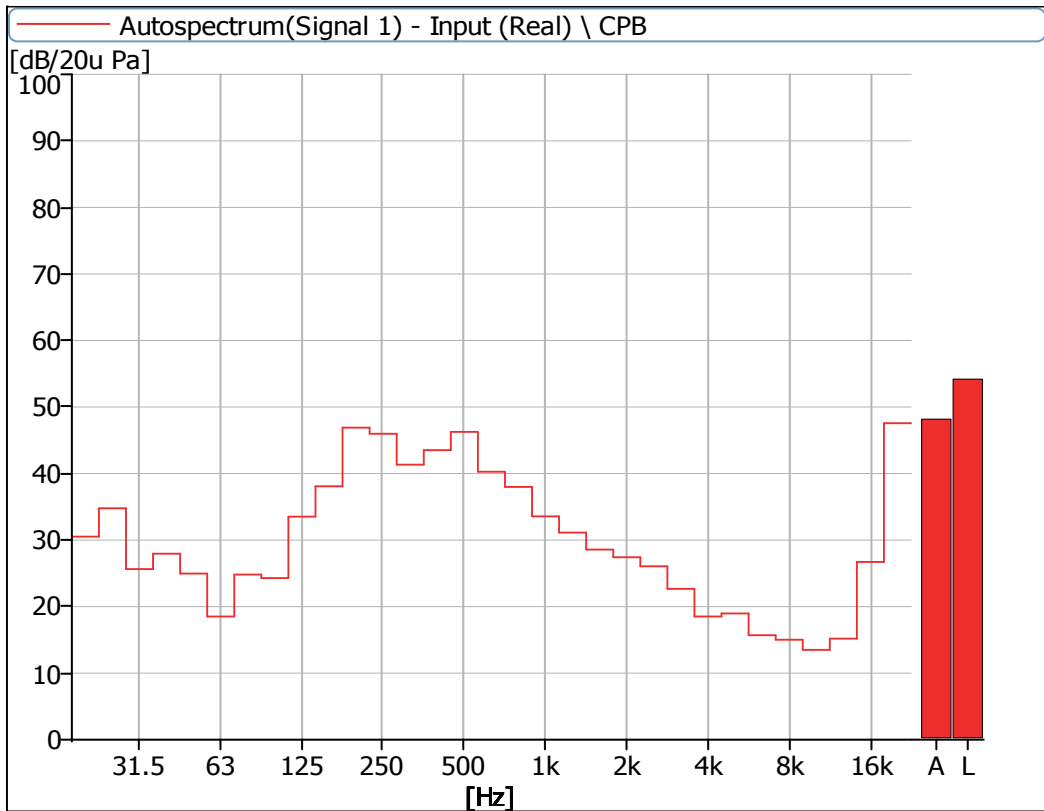


Figure 31 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 1)

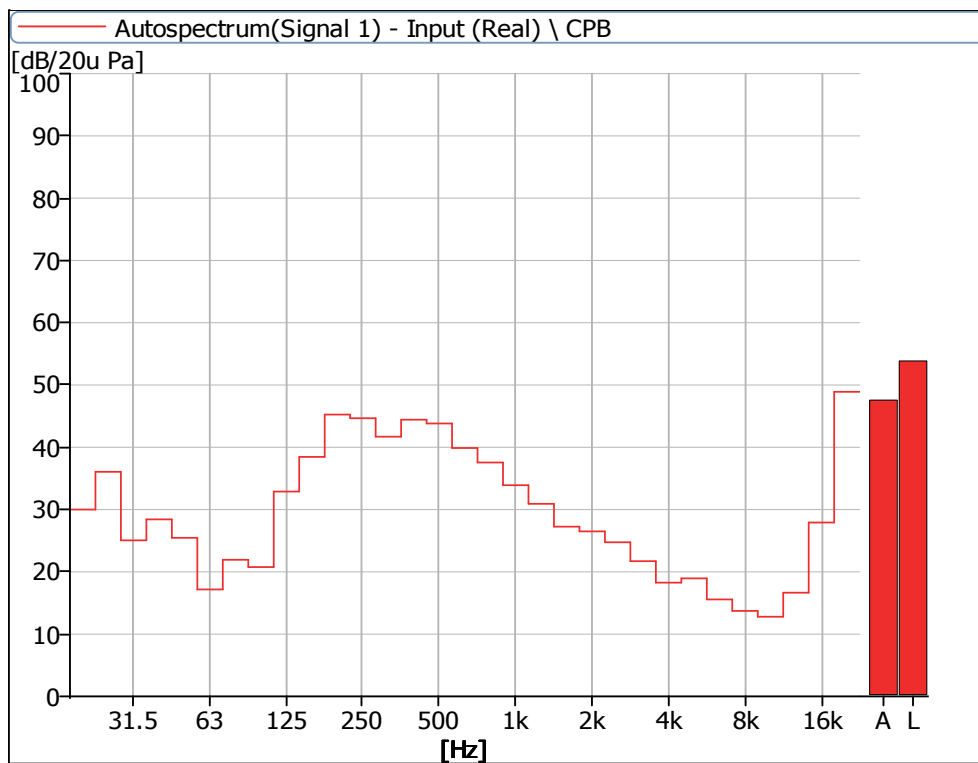


Figure 32 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 2)

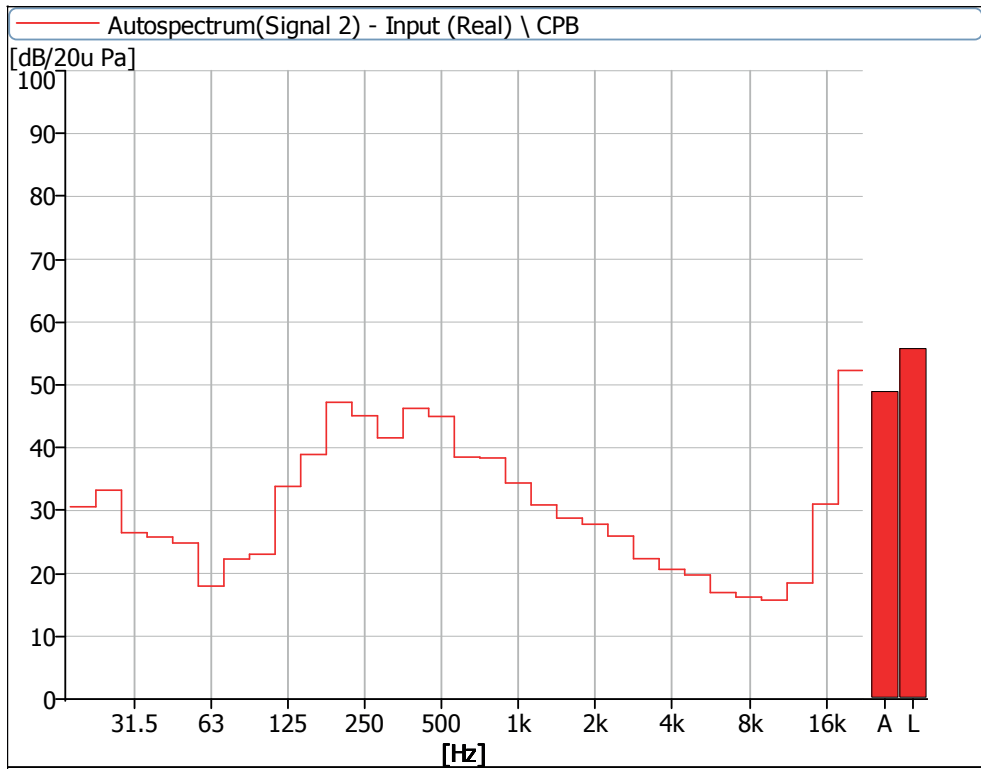


Figure 33 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 3)

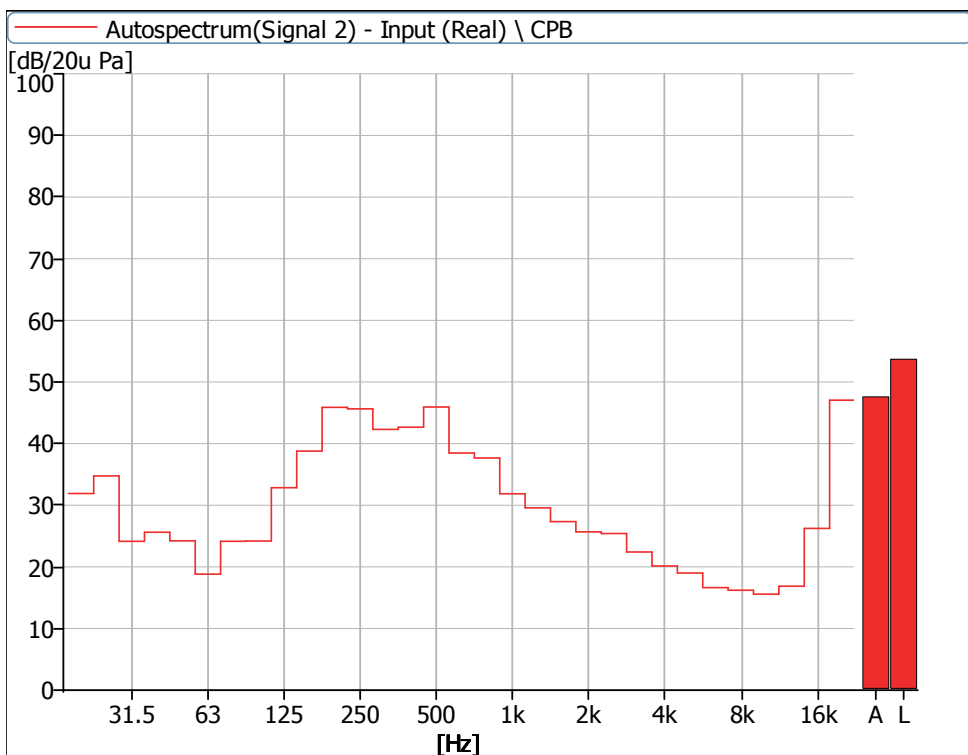


Figure 34 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 4)

Instrumentation

No	Equipment	Type	Number	Calibration Period
1	Anechoicrooms	-	R40010	2023.05
2	Noise Analyzer	3160-A-042	R40011-2	2023.06



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