



NANDO 502 WASH

NOISE MEASUREMENTS

AYRTON

1 Test instructions

This test was conducted in the semi-anechoic room of Guangzhou Quality Supervision and Testing Institute, with indoor ambient noise less than 10dB (A).

The test was carried out in accordance with the requirements of Article 9.4.1 of GB/T 6882-2016.

The stage light is placed on the standard test bench of the semi-anechoic room and connected to the power supply of 220V~/50Hz.

The indoor ambient temperature is 25 °C, the relative humidity is 65%, and the air pressure is 101.5kPa. When the stage light is in the set normal working state, the test microphone is 1m away from the outlet of the measured luminaire in four horizontal directions to detect its sound pressure level.

During the test, there is no additional vibration of the ground and surrounding structures.

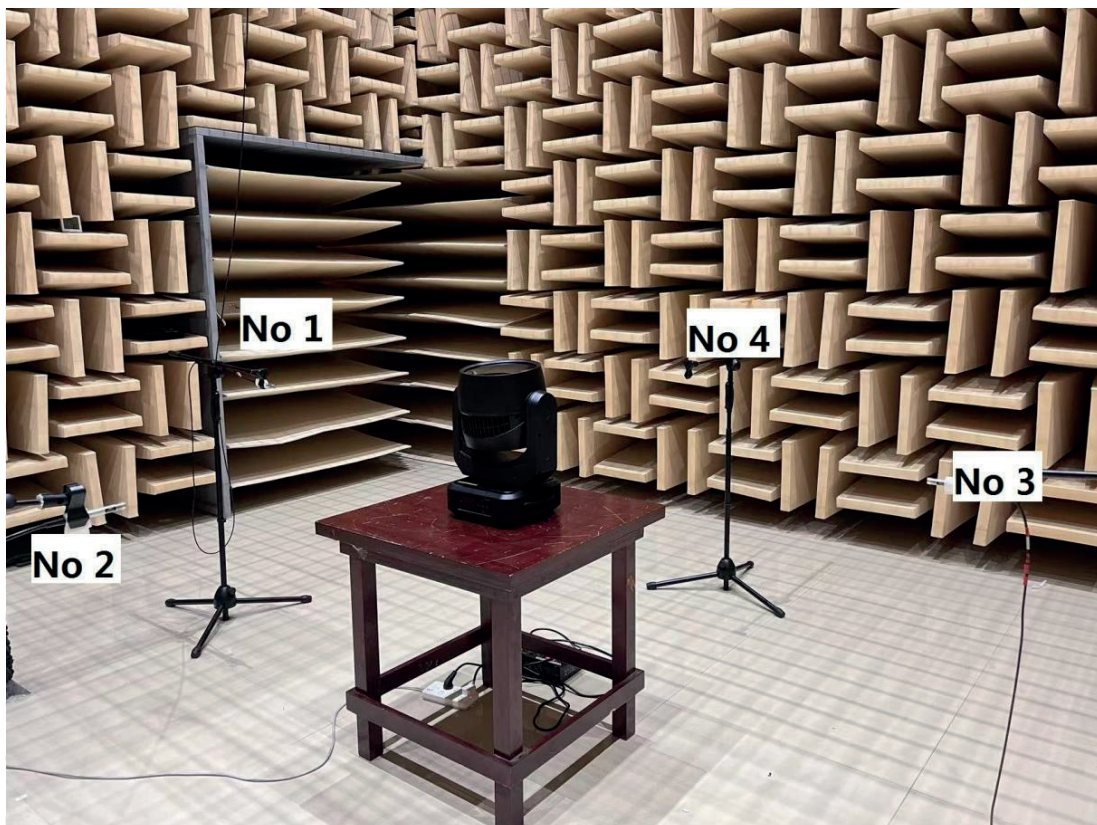


Figure 1 Test setup



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
50	24.2	22.8	25.3	22.6	24.0	22.9	25.1	23.6
63	14.3	13.7	12.9	14.2	14.0	14.6	14.7	14.9
80	13.6	17.2	15.6	15.0	17.6	23.2	21.8	20.2
100	15.1	15.7	17.6	15.3	24.2	25.2	24.7	24.4
125	12.4	14.6	12.6	14.6	19.7	23.1	22.2	20.5
160	10.7	12.7	11.8	12.1	17.1	18.2	18.0	18.5
200	13.4	15.5	14.5	15.7	28.0	28.3	28.2	26.9
250	22.6	25.3	29.7	29.5	40.6	41.1	40.7	40.9
315	17.7	19.6	20.1	20.6	47.0	47.2	47.3	46.4
400	17.0	19.2	17.0	18.7	39.0	39.6	41.6	39.5
500	26.2	23.5	24.7	23.0	34.2	36.1	35.4	35.8
630	24.4	24.5	25.9	23.6	33.8	35.4	34.9	34.2
800	25.7	25.9	28.2	25.7	35.7	35.1	31.5	34.2
1000	26.8	29.1	29.6	29.8	31.4	31.3	28.6	32.0
1250	27.2	29.1	29.5	28.2	31.1	31.3	29.7	31.4
1600	25.6	27.7	26.4	27.5	32.3	32.9	32.8	32.3
2000	25.7	26.2	25.8	27.7	27.0	26.2	27.8	27.2
2500	14.5	16.8	14.8	16.0	24.1	23.9	24.5	24.2
3150	10.7	15.8	12.1	14.7	18.6	19.7	20.2	19.4
4000	8.2	12.3	10.2	12.4	15.7	16.3	16.2	16.6
5000	8.0	10.2	9.2	9.5	12.5	14.3	13.3	13.0
6300	11.2	10.7	13.6	11.1	11.7	11.9	13.5	12.7
8000	7.7	9.5	8.8	10.4	9.4	10.0	9.3	10.6
10000	7.0	9.0	7.8	8.5	8.0	9.2	8.5	8.9
12500	7.4	8.7	7.5	8.3	8.3	9.0	8.3	8.5
16000	7.1	8.2	7.3	8.7	11.5	11.9	11.7	11.7
20000	21.7	17.8	17.6	24.6	30.0	28.9	29.9	29.7

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	38.7	38.7	39.2	40.3	49.4	50.0	51.3	49.3
A-weighted dB(A)	34.6	35.9	36.2	36.1	44.2	44.6	44.5	44.1
Average sound pressure level dB(A)	35.7				44.3			



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

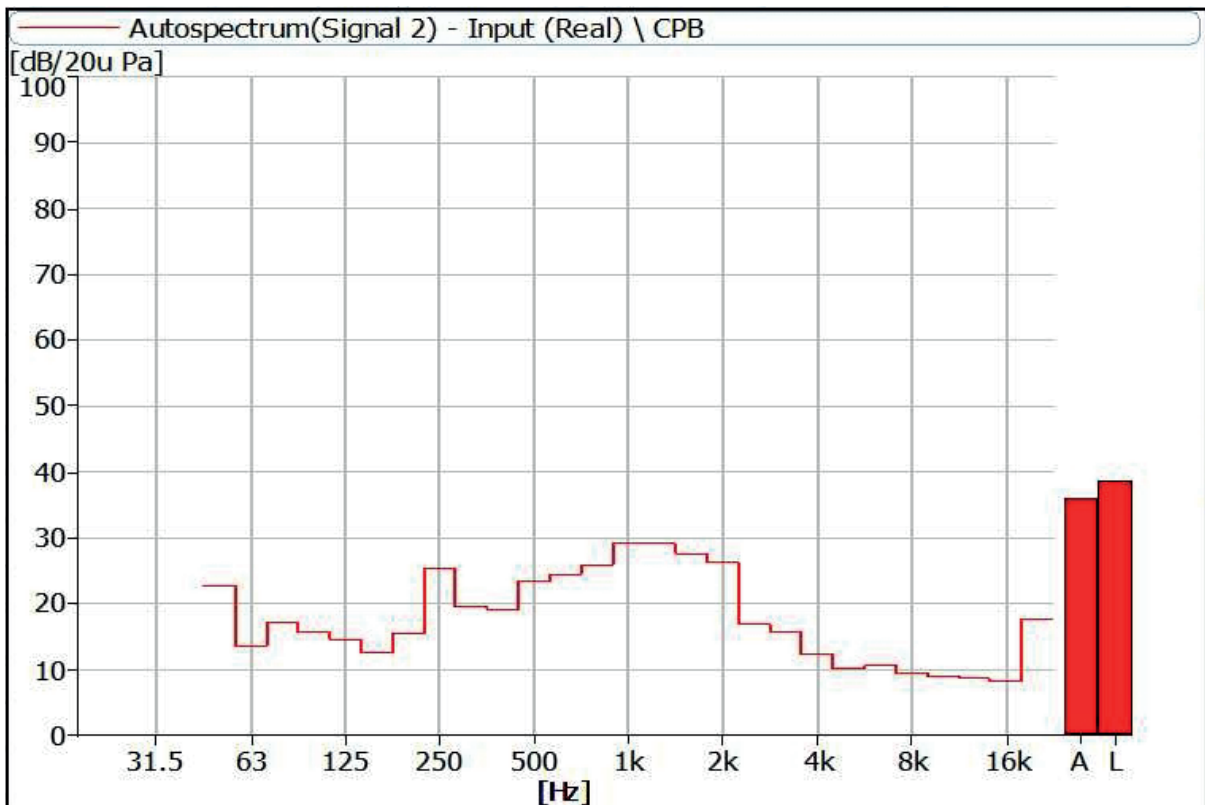


Figure 4 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 2)

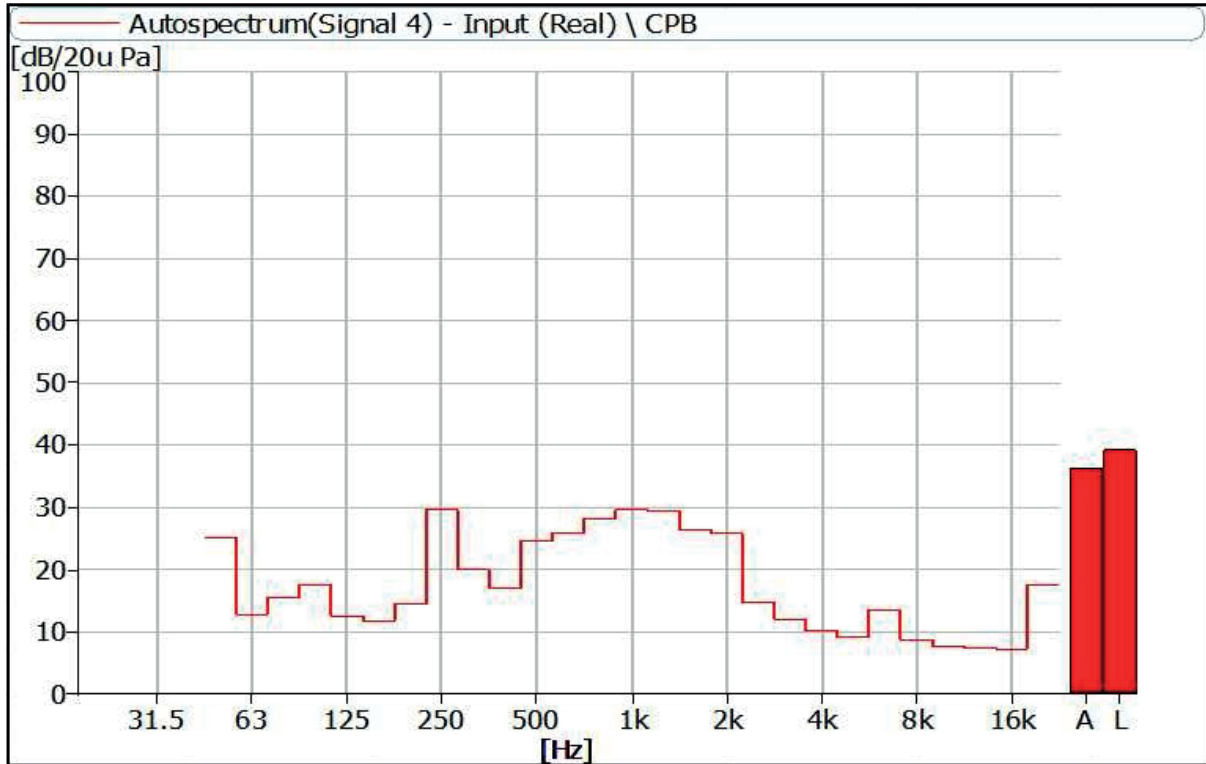


Figure 5 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 3)



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

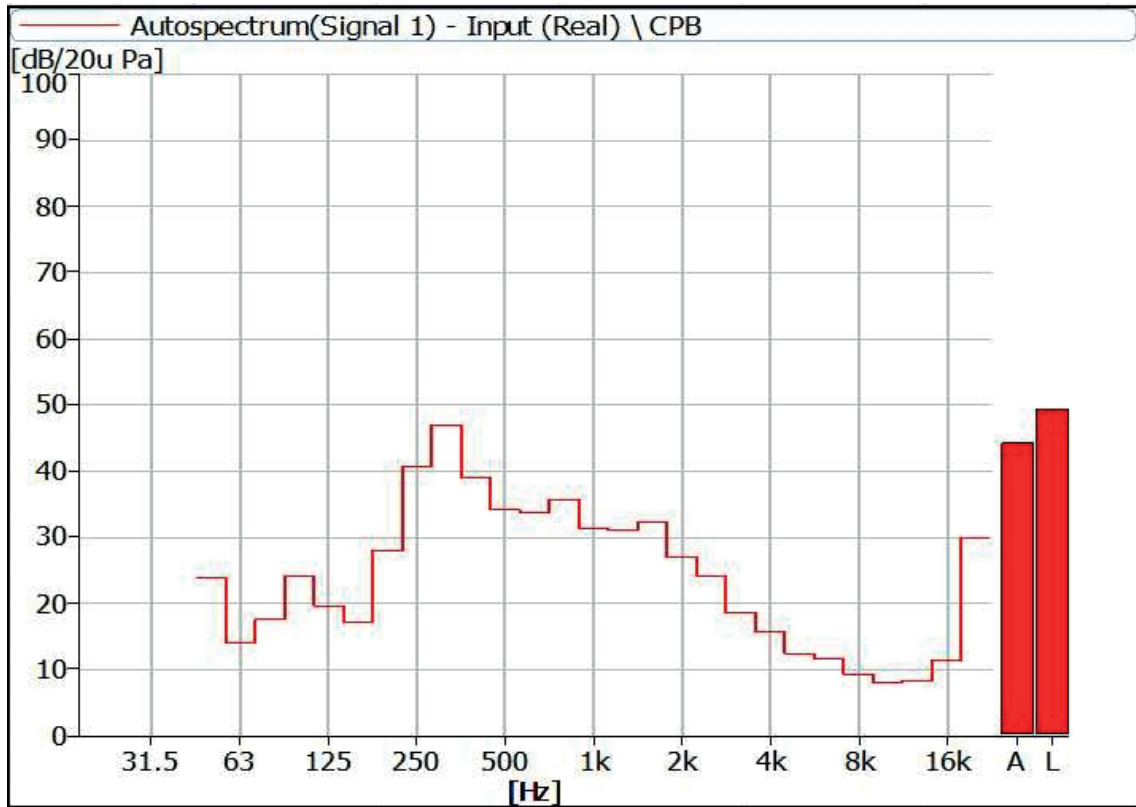


Figure 7 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 1)

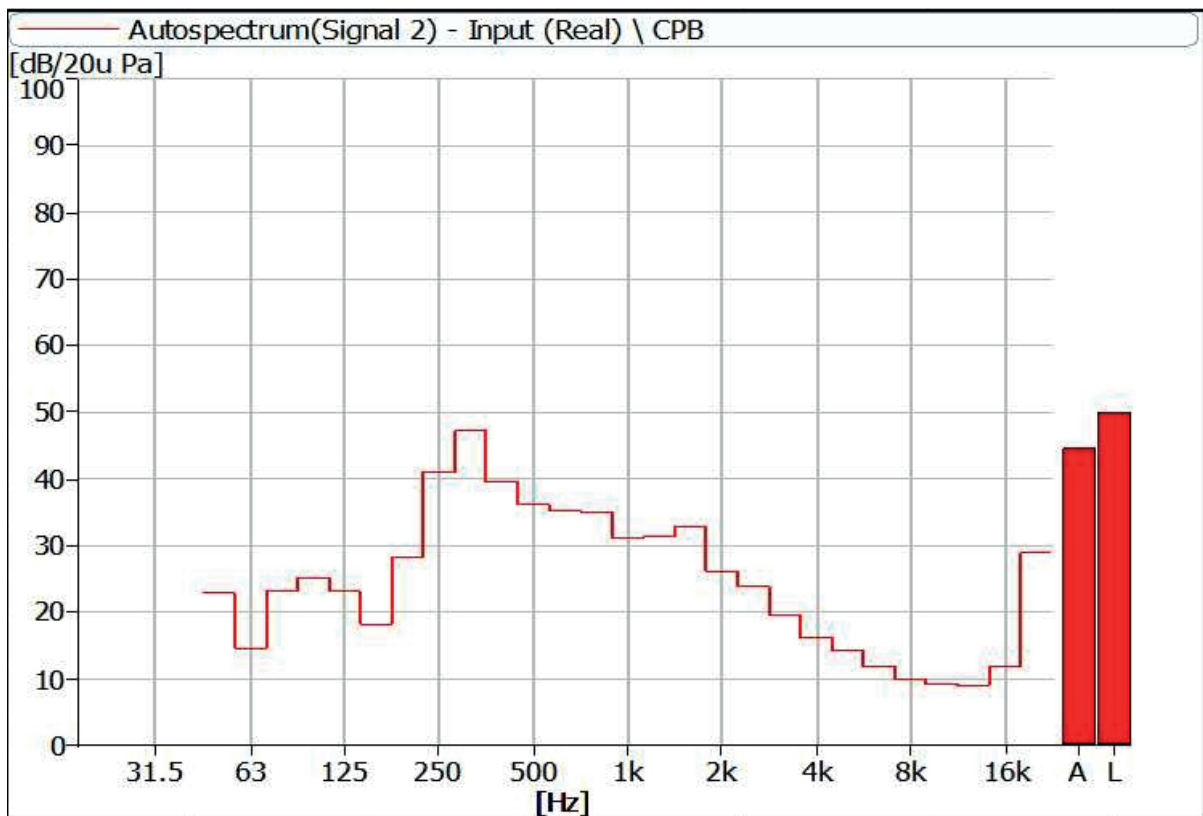


Figure 8 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 2)

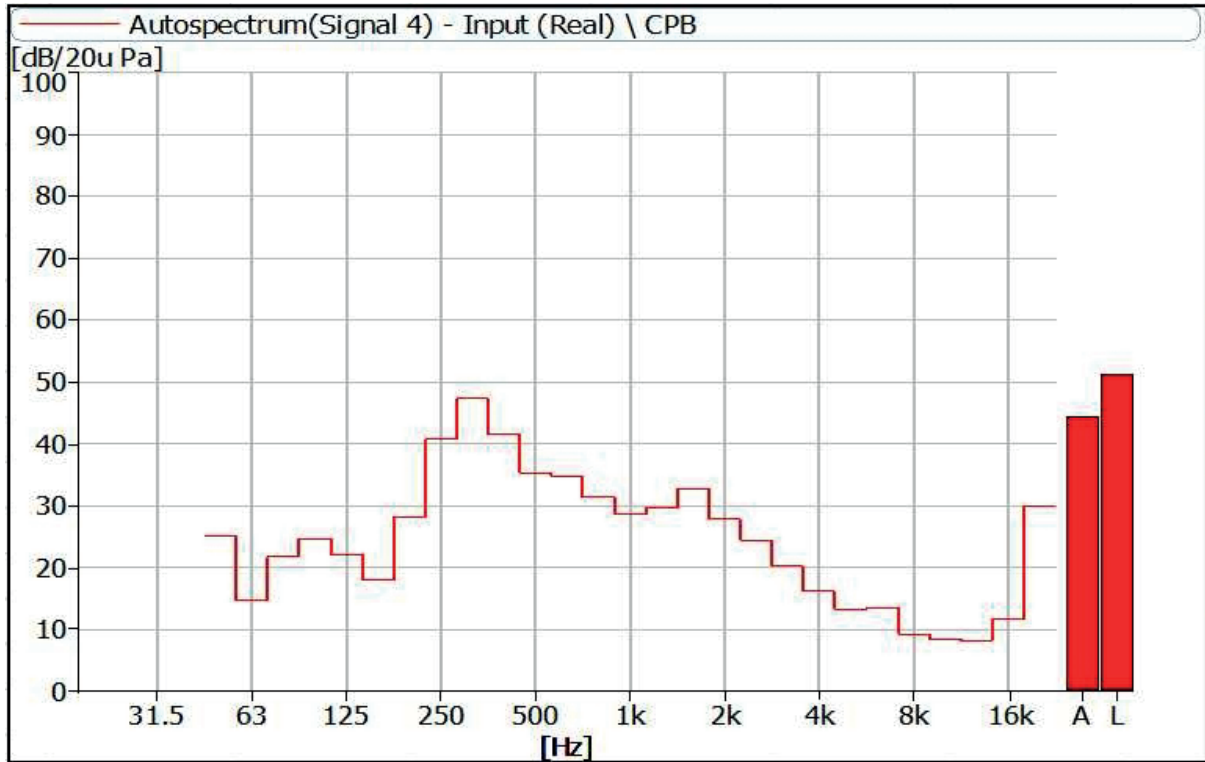


Figure 9 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 3)

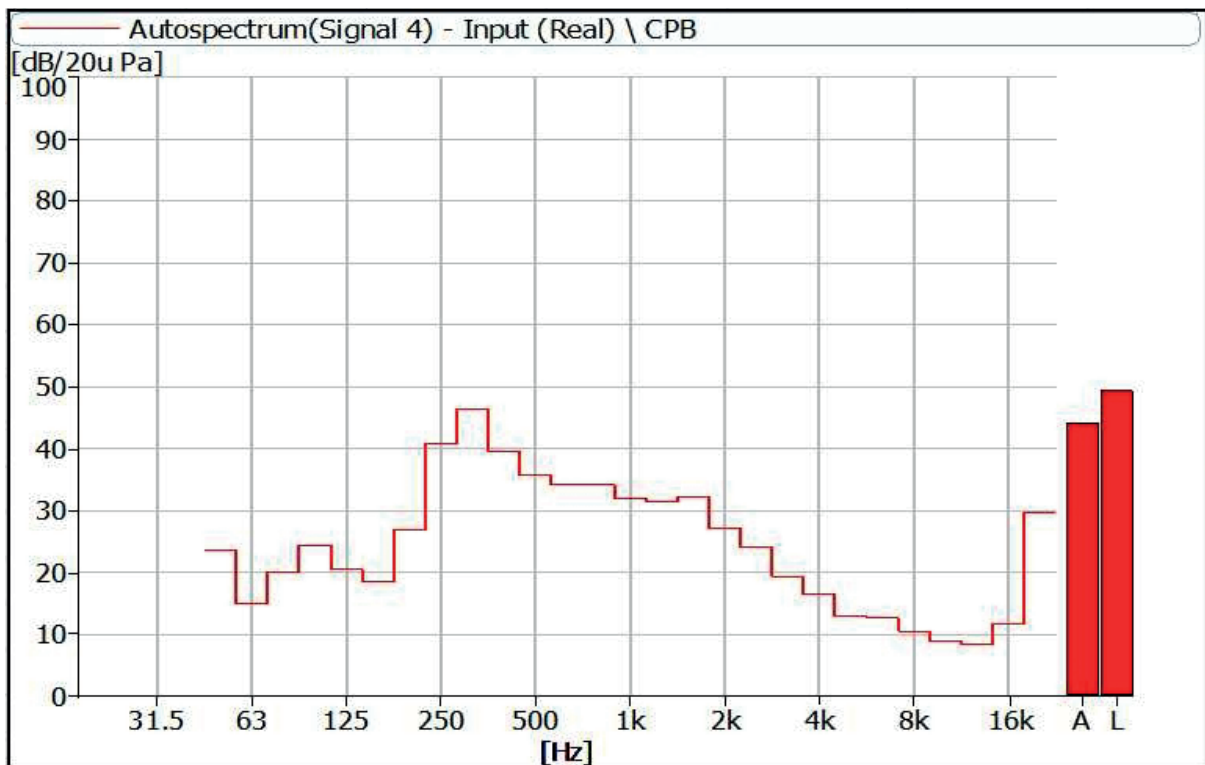


Figure 10 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 4)

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

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
50	23.8	25.1	25.3	27.6	23.6	24.2	25.5	22.8
63	14.6	14.5	13.5	28.4	14.6	15.1	14.5	15.6
80	12.4	12.7	12.3	22.5	17.5	22.2	20.1	20.3
100	16.1	15.6	18.5	22.6	24.2	25.5	24.0	24.5
125	13.3	15.1	13.3	17.0	20.2	23.2	22.0	21.1
160	10.7	12.4	11.5	15.1	16.6	18.1	17.9	17.8
200	15.1	17.2	15.1	16.8	26.3	26.6	27.0	25.3
250	18.6	21.2	20.5	20.5	40.1	39.9	40.0	39.8
315	30.5	35.5	32.7	33.9	46.5	46.5	47.0	45.6
400	18.7	21.2	19.9	20.4	38.9	38.9	41.3	38.3
500	26.4	24.6	27.8	24.4	33.7	35.7	34.4	35.3
630	28.9	30.2	32.0	30.8	35.9	35.8	34.5	35.2
800	29.6	29.9	33.5	30.3	37.0	35.1	31.4	35.0
1000	31.3	34.8	35.3	35.8	35.6	36.8	30.7	37.8
1250	32.1	33.5	34.9	33.2	34.7	35.0	30.8	35.3
1600	28.2	31.9	29.8	31.7	33.3	33.2	32.7	33.4
2000	23.6	26.4	23.7	25.4	28.6	28.0	26.2	28.2
2500	18.0	21.3	19.8	20.8	26.0	25.5	24.5	25.8
3150	13.4	21.4	15.3	19.8	22.1	21.7	19.8	21.5
4000	11.3	18.5	14.3	19.1	21.1	18.7	16.2	20.1
5000	9.7	14.6	11.6	14.6	17.1	17.0	13.2	16.2
6300	12.2	14.4	14.5	15.2	15.6	14.1	13.9	15.6
8000	8.1	11.2	9.2	12.3	13.1	12.2	9.6	13.1
10000	7.1	10.0	8.1	9.8	10.7	10.9	8.5	10.8
12500	7.5	8.9	7.8	8.8	9.4	9.4	8.2	9.1
16000	8.1	8.1	8.8	8.6	11.7	11.7	11.3	11.1
20000	25.4	15.8	25.1	23.5	29.7	28.7	29.6	28.0

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	40.5	42.3	42.5	62.2	49.5	49.5	52.5	49.1
A-weighted dB(A)	38.0	40.4	40.9	40.6	45.1	45.1	44.3	45.0
Average sound pressure level dB(A)	40.0				44.9			

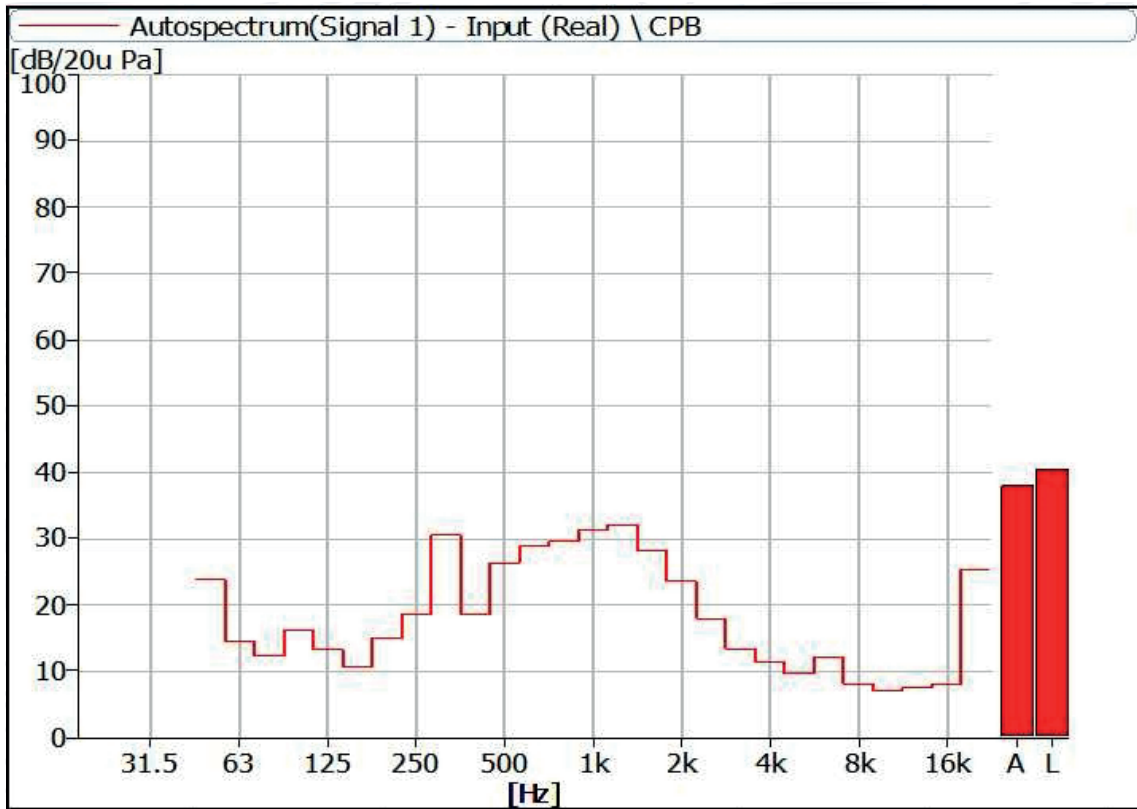


Figure 11 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 1)

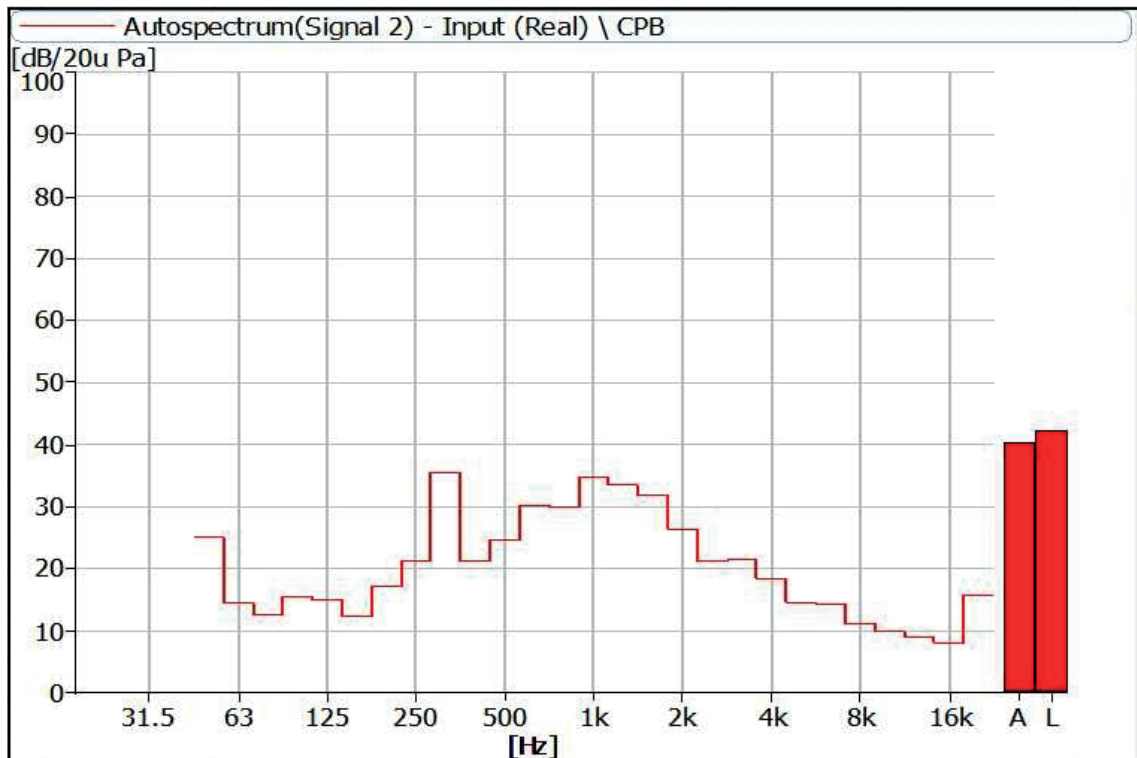


Figure 12 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 2)



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

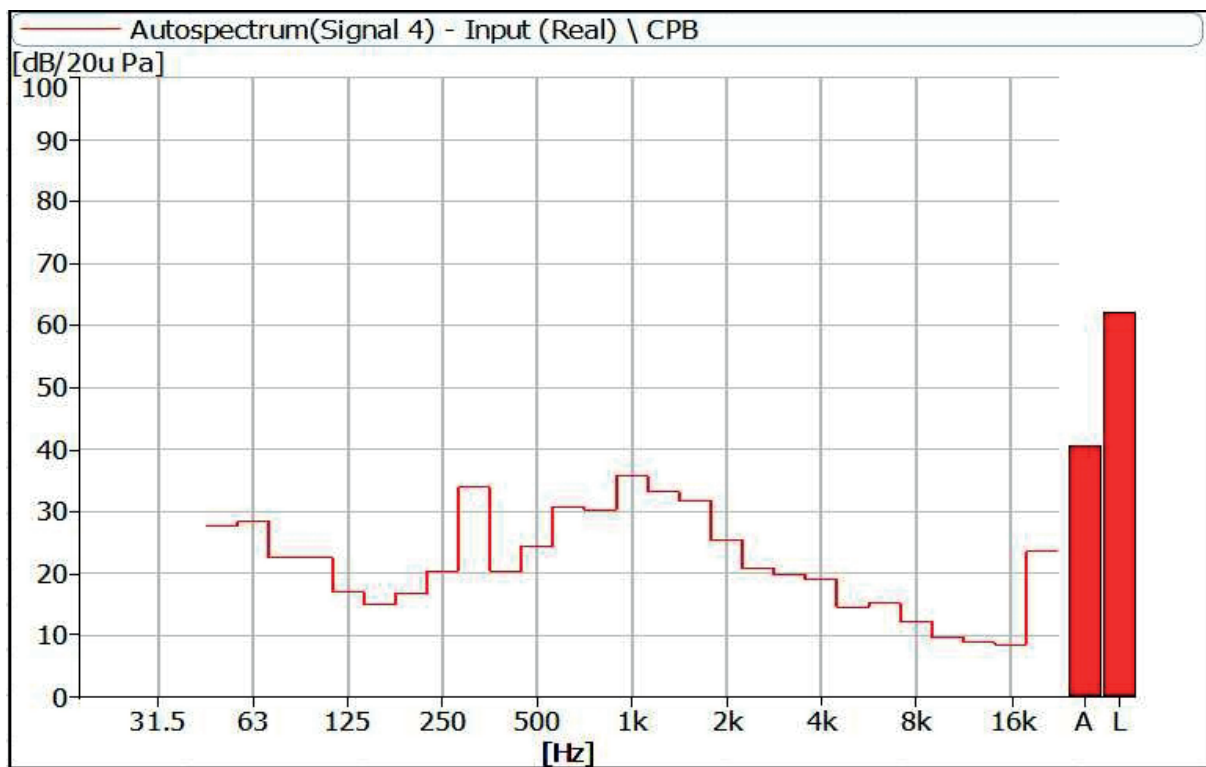


Figure 14 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 4)

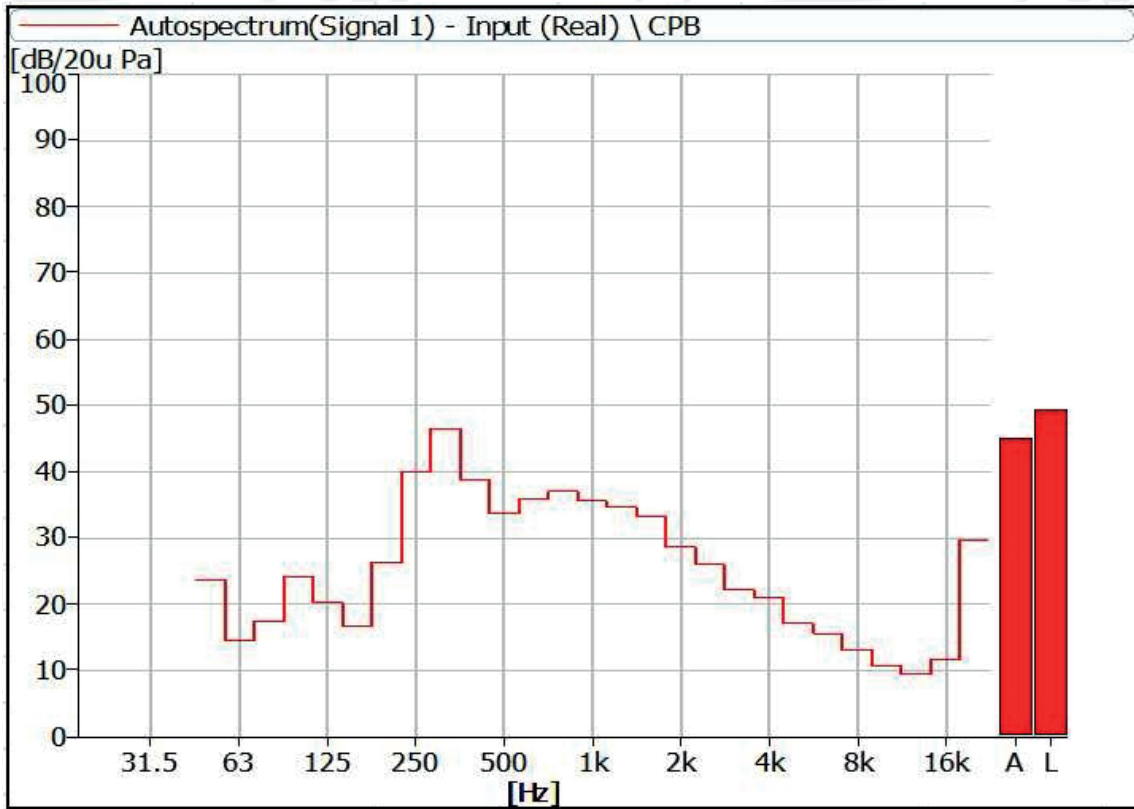


Figure 15 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 1)



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

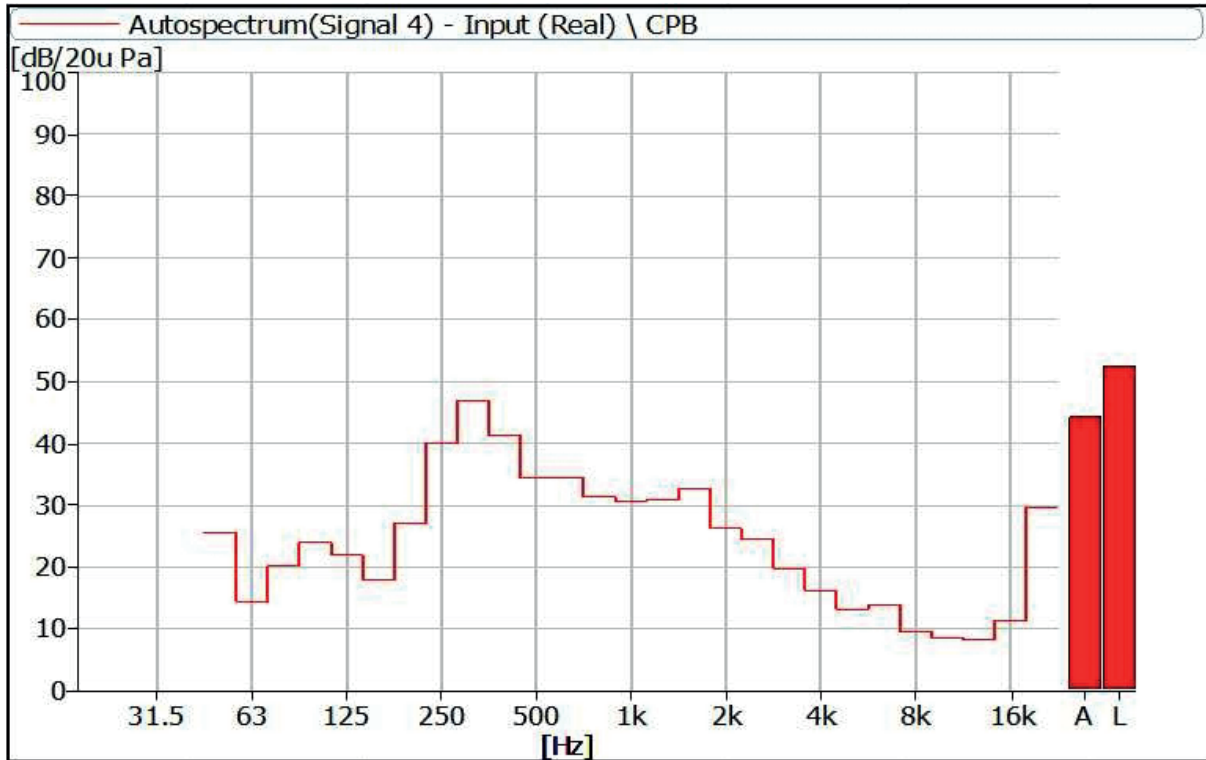


Figure 17 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 3)

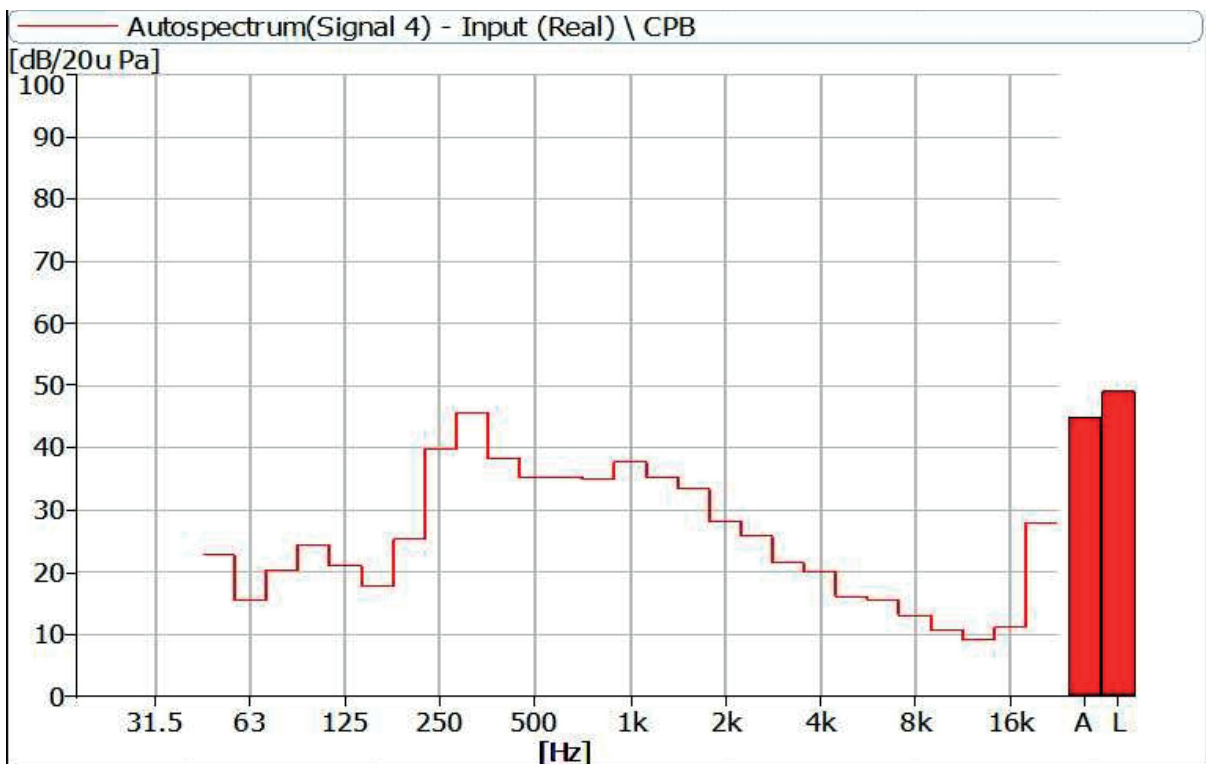


Figure 18 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 4)

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

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
50	23.2	24.6	25.8	24.1	23.4	24.2	24.7	24.1
63	13.9	13.6	13.1	14.6	14.4	15.3	14.0	15.3
80	12.7	13.7	12.7	14.8	17.5	22.1	20.3	20.4
100	15.3	15.3	18.0	15.1	26.0	26.7	25.3	26.2
125	12.1	14.2	11.9	14.2	22.2	25.7	23.9	23.2
160	8.7	11.0	10.6	10.3	16.0	17.2	16.9	16.9
200	17.7	18.8	22.3	22.9	28.0	28.7	28.2	27.3
250	11.9	13.8	13.8	14.7	40.7	41.2	41.1	40.9
315	11.1	14.7	12.5	14.0	47.8	48.3	48.1	47.3
400	15.2	15.9	13.4	16.7	39.9	40.3	41.7	40.2
500	17.6	17.5	20.9	16.5	34.3	36.7	35.4	36.1
630	18.3	19.5	21.4	18.7	33.6	35.2	35.4	34.7
800	18.9	19.4	21.6	20.9	36.3	34.5	31.5	34.0
1000	18.3	22.8	21.6	22.6	27.7	27.7	26.8	28.9
1250	19.8	21.6	22.1	21.8	28.6	28.7	29.1	29.1
1600	17.2	21.8	18.1	21.0	31.8	31.5	32.6	31.8
2000	11.2	15.0	11.3	13.8	23.2	23.9	22.3	24.0
2500	7.2	10.7	8.0	9.6	24.1	24.2	24.1	23.8
3150	7.2	12.9	7.4	12.0	19.8	20.7	20.5	19.1
4000	6.1	8.6	6.8	8.0	15.1	16.3	15.4	16.6
5000	6.1	8.1	7.0	7.3	12.3	14.2	12.8	12.7
6300	6.4	8.4	7.5	7.9	9.7	11.4	10.8	11.7
8000	7.0	9.3	8.0	10.5	8.6	10.1	9.0	10.8
10000	6.9	9.3	8.1	9.1	7.6	9.6	8.6	9.4
12500	6.3	8.3	7.2	7.5	7.6	8.8	8.1	8.1
16000	8.7	8.4	7.7	9.2	11.5	12.4	12.1	11.1
20000	25.5	18.0	21.6	25.0	29.3	29.8	30.1	27.8

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	36.0	36.2	36.3	40.9	49.9	50.5	51.3	49.9
A-weighted dB(A)	26.9	29.3	28.9	29.4	44.4	44.7	44.7	44.2
Average sound pressure level dB(A)	28.6				44.5			

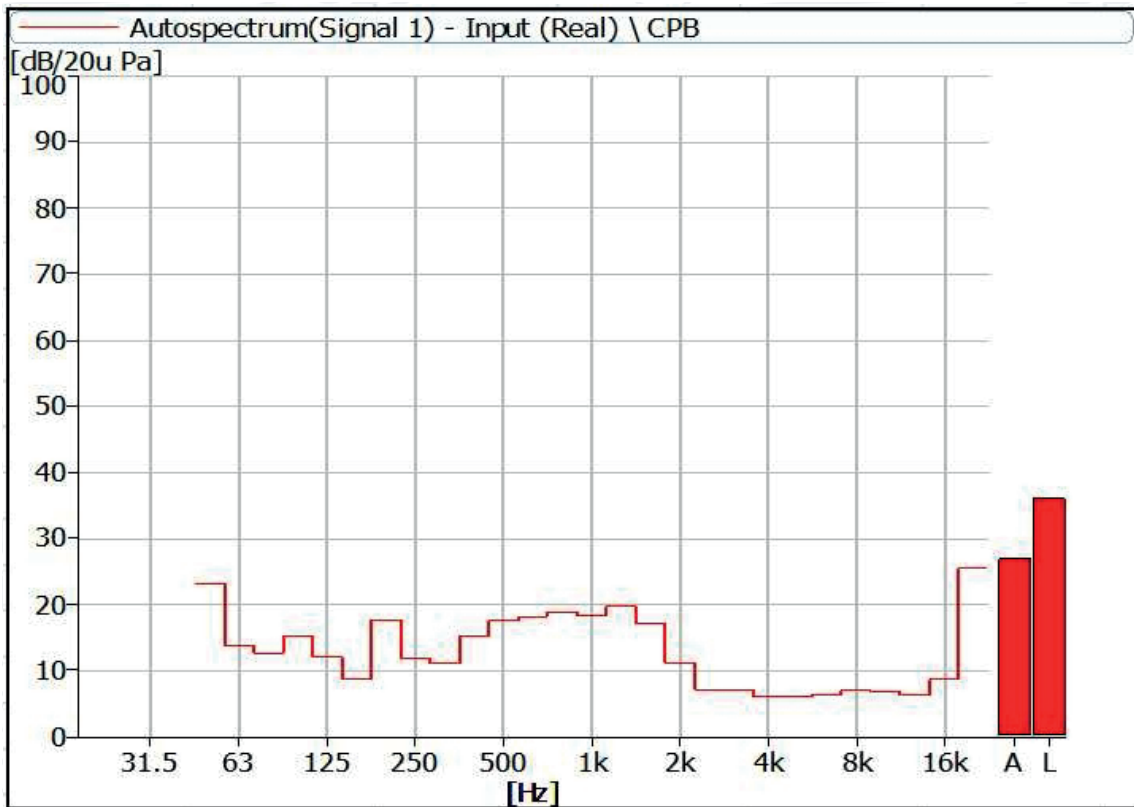


Figure 19 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 1)

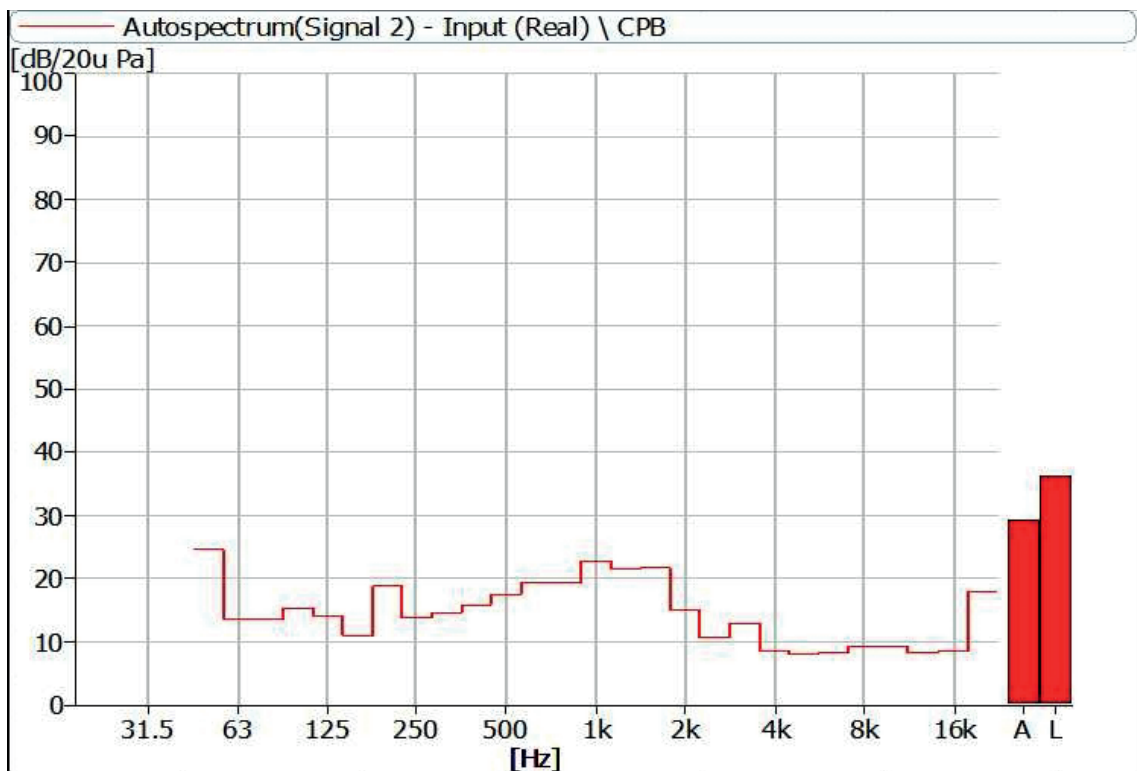


Figure 20 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 2)

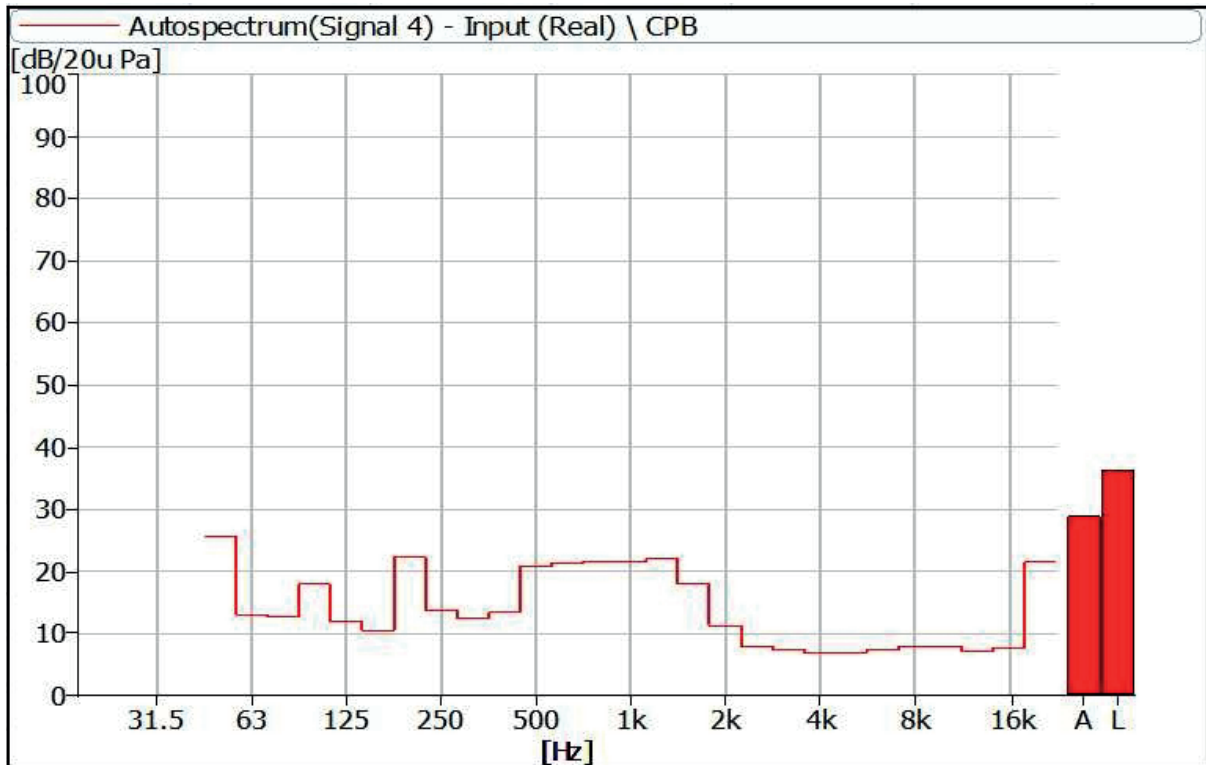


Figure 21 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 3)



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

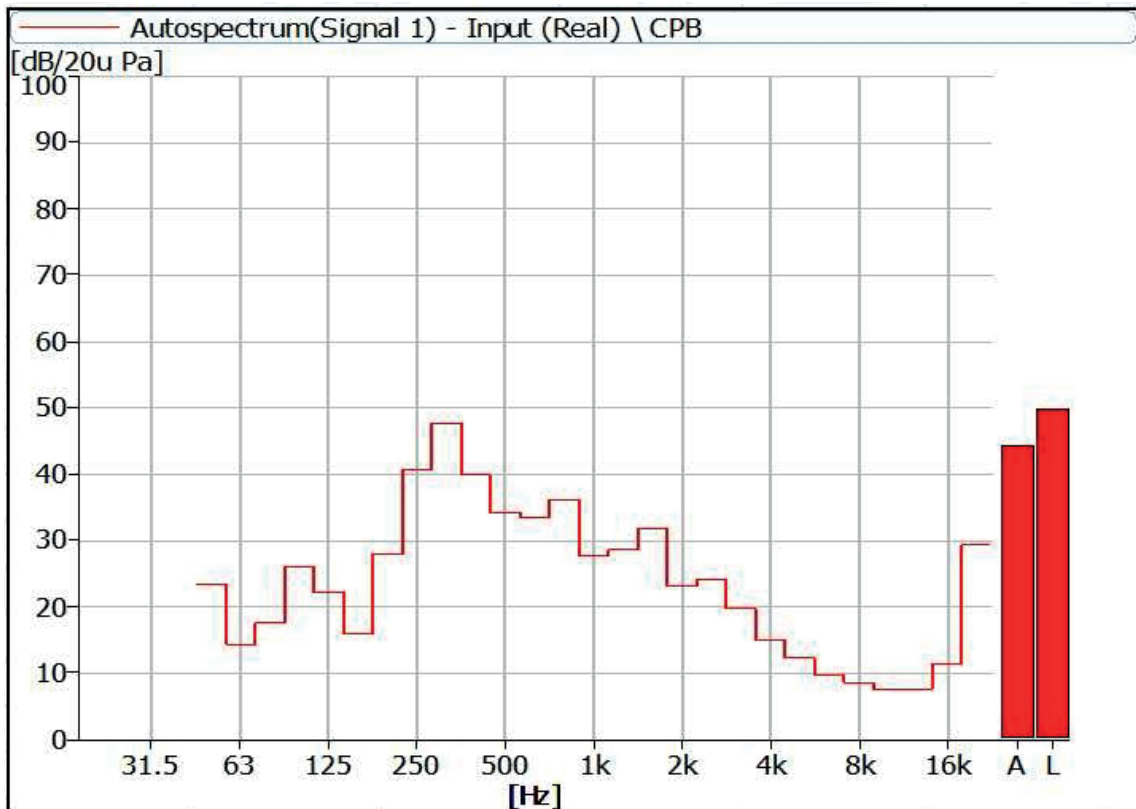


Figure 23 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 1)

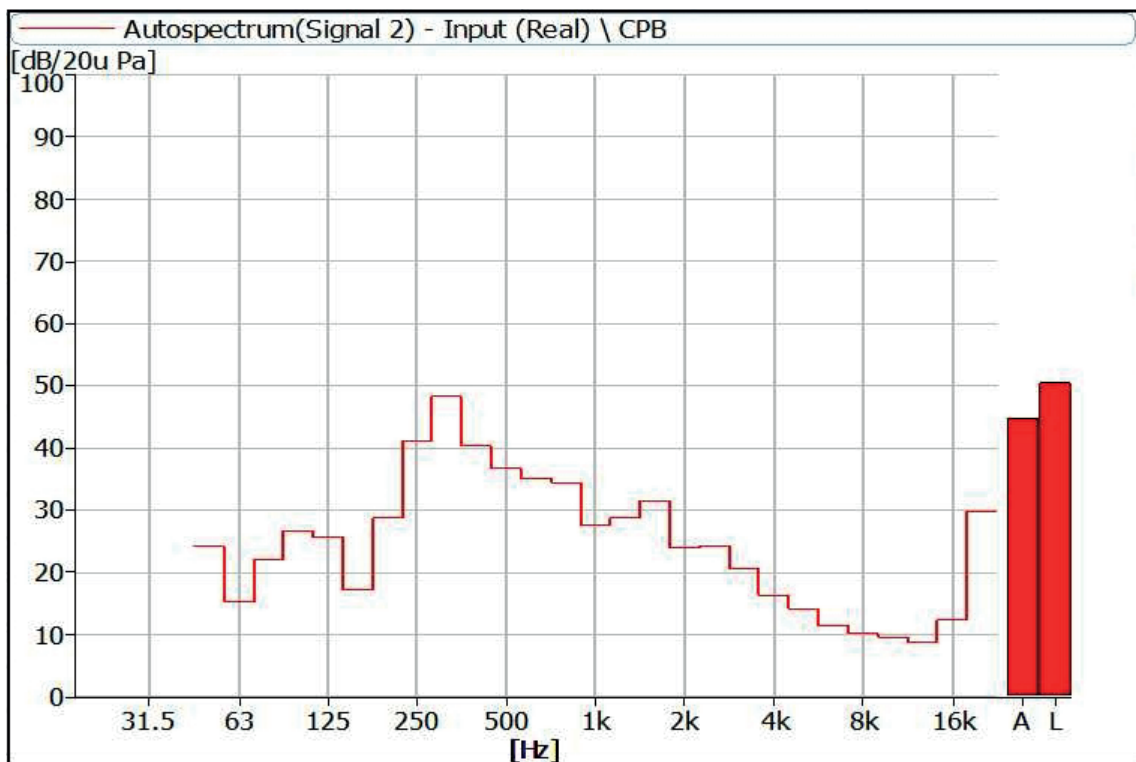


Figure 24 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 2)

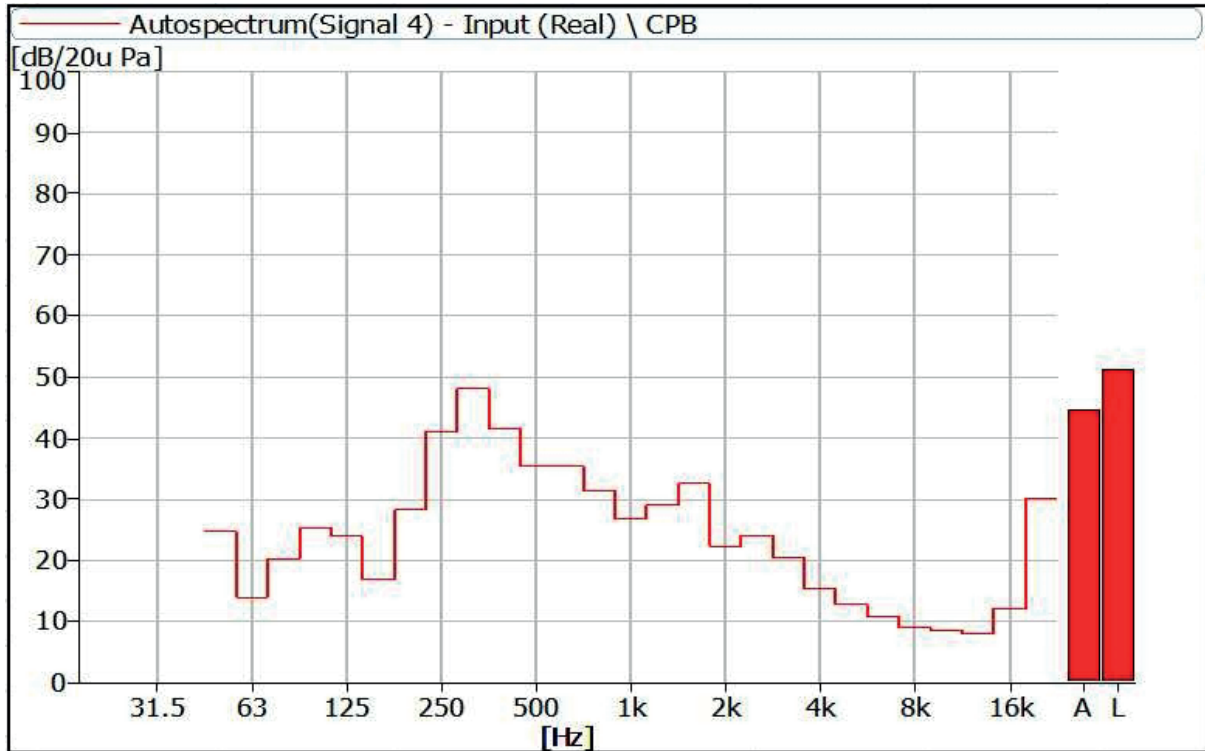


Figure 25 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 3)

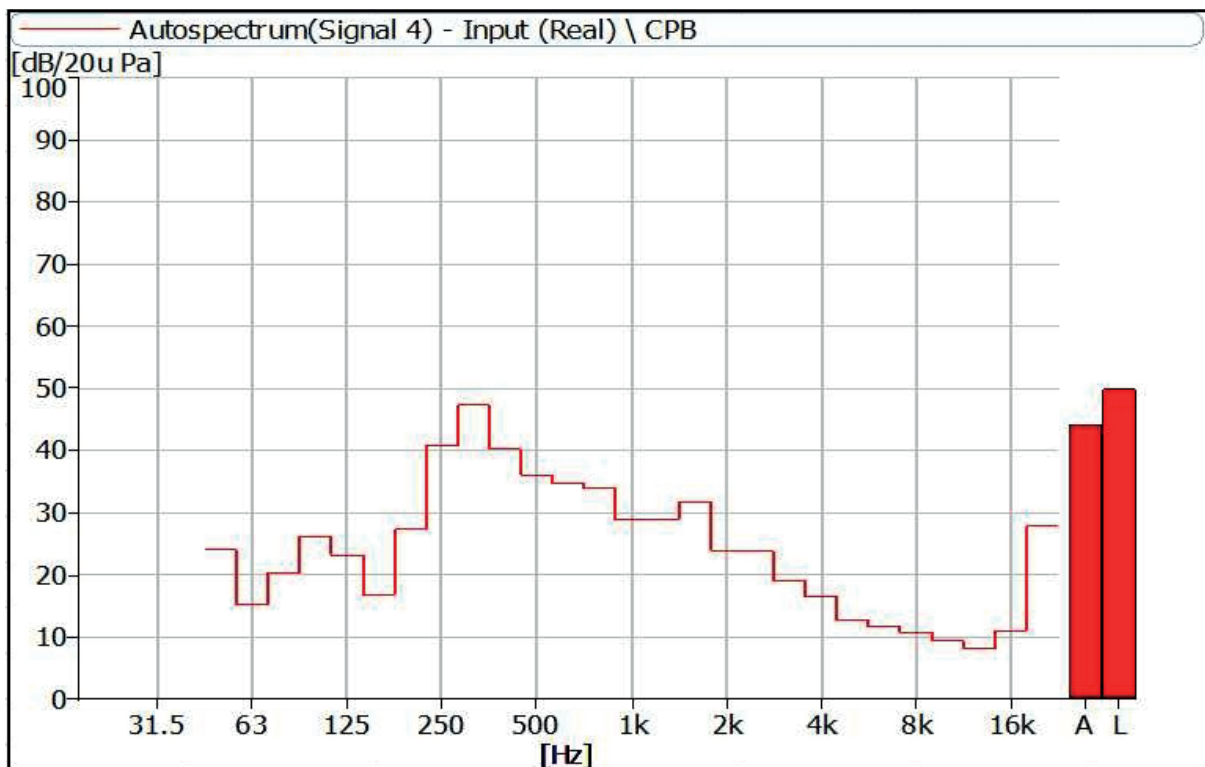


Figure 26 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 4)

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

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
50	24.0	24.8	25.3	22.9	23.9	24.8	25.7	22.8
63	13.5	13.1	12.1	13.6	13.7	13.5	14.3	13.7
80	12.6	12.8	12.1	14.4	14.2	17.9	16.8	16.9
100	15.4	15.8	18.8	14.3	20.6	21.2	20.8	20.5
125	12.8	14.4	12.7	14.2	18.2	21.3	19.3	19.1
160	7.6	9.4	10.3	8.2	12.3	13.2	13.4	13.2
200	6.2	8.0	7.0	7.0	20.8	21.2	20.9	18.9
250	5.1	7.2	6.6	6.8	33.9	34.5	33.9	33.9
315	6.0	8.2	7.8	7.7	40.7	41.3	41.6	40.3
400	11.8	10.2	6.7	11.3	33.7	33.5	35.6	33.3
500	10.2	10.4	10.9	11.3	27.5	30.0	27.9	29.1
630	10.4	12.6	13.9	13.2	26.7	28.3	28.2	27.4
800	4.3	6.7	9.1	10.7	29.9	27.2	23.6	26.5
1000	3.5	8.2	7.9	9.5	20.1	20.7	19.6	21.6
1250	10.2	12.0	12.4	12.0	22.3	22.6	22.2	21.9
1600	7.2	11.6	9.8	11.5	25.0	24.7	25.8	24.9
2000	5.8	8.4	8.8	7.4	16.6	17.7	15.6	17.6
2500	5.1	7.4	8.6	6.9	18.4	18.3	17.6	17.7
3150	5.5	9.1	8.1	8.2	14.1	15.1	14.4	13.2
4000	5.8	7.7	7.6	6.8	10.5	11.9	10.5	11.7
5000	6.0	7.8	7.4	7.0	8.5	10.4	9.2	9.1
6300	6.3	8.2	7.5	7.3	7.3	9.1	8.4	8.6
8000	6.7	8.6	7.9	8.0	7.4	9.2	8.3	9.7
10000	7.0	8.8	8.2	8.2	7.0	9.1	8.2	8.6
12500	6.9	8.4	7.9	7.9	6.7	8.2	7.4	7.3
16000	9.2	8.6	9.3	8.3	9.8	9.6	9.5	9.1
20000	27.8	22.3	24.4	22.8	27.3	24.6	26.6	24.2

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	36.4	35.5	35.9	37.8	43.6	44.0	44.9	43.7
A-weighted dB(A)	21.8	21.9	22.1	22.0	37.6	37.9	38.1	37.2
Average sound pressure level dB(A)	21.9				37.7			

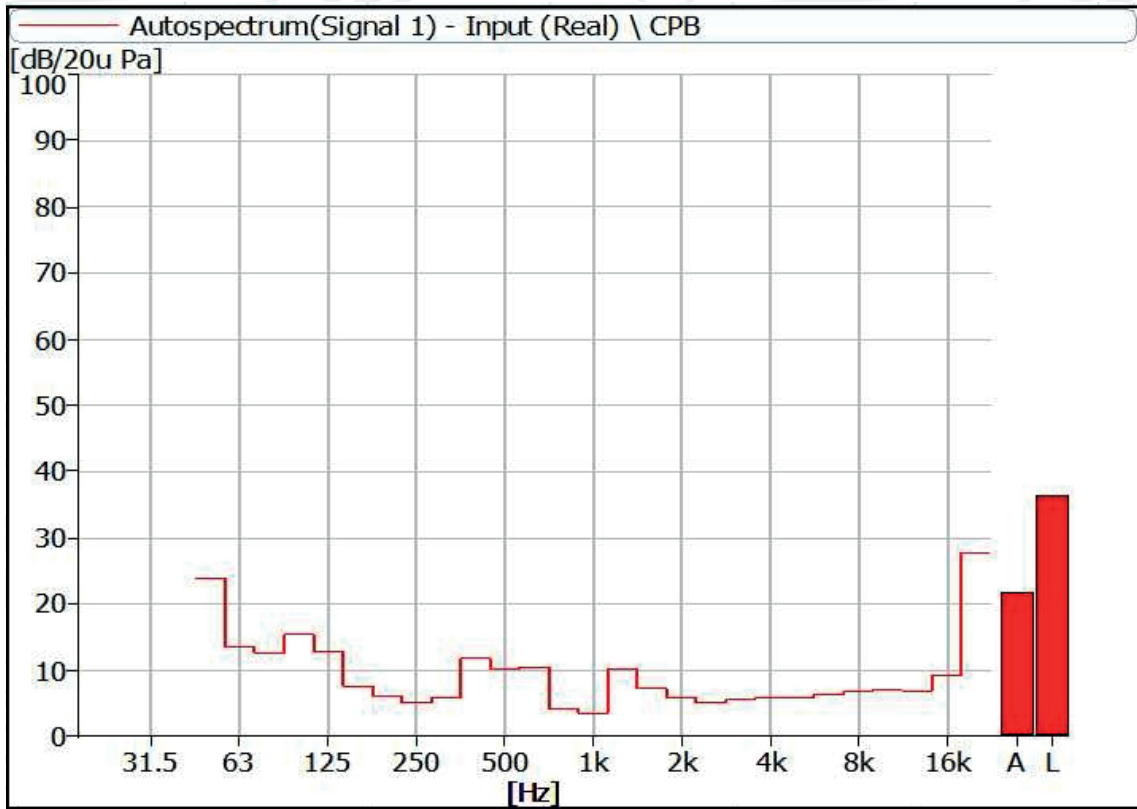


Figure 27 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 1)

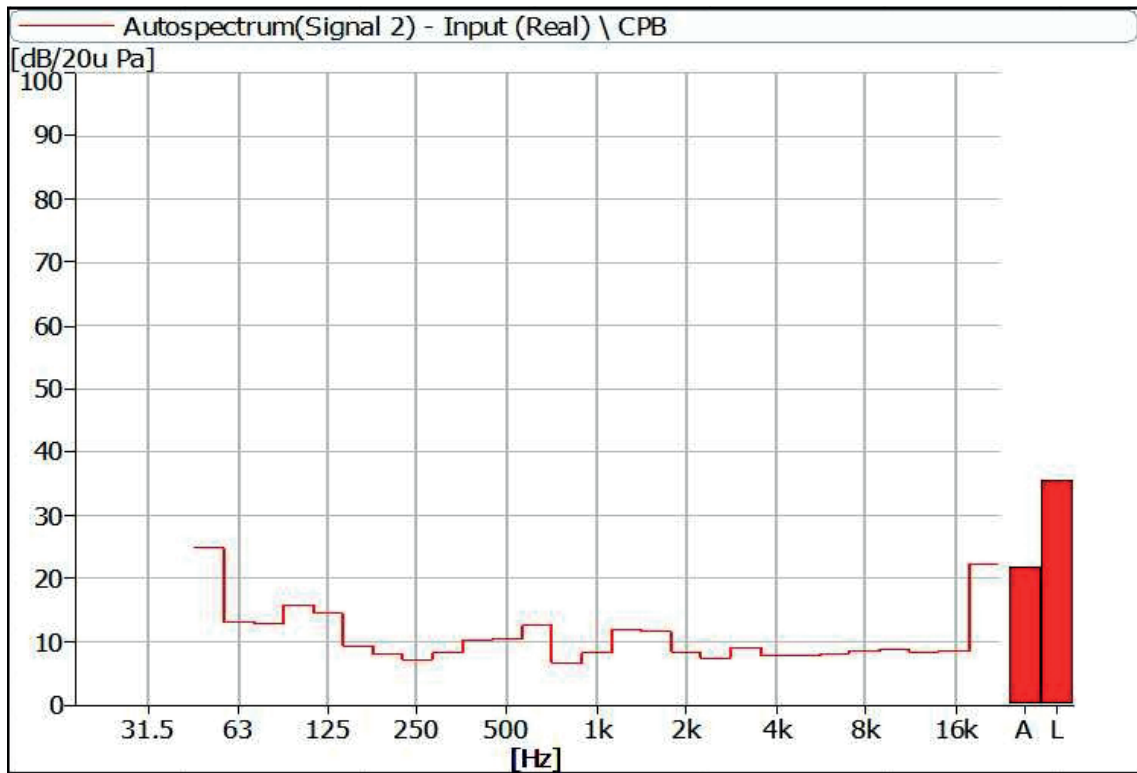


Figure 28 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 2)

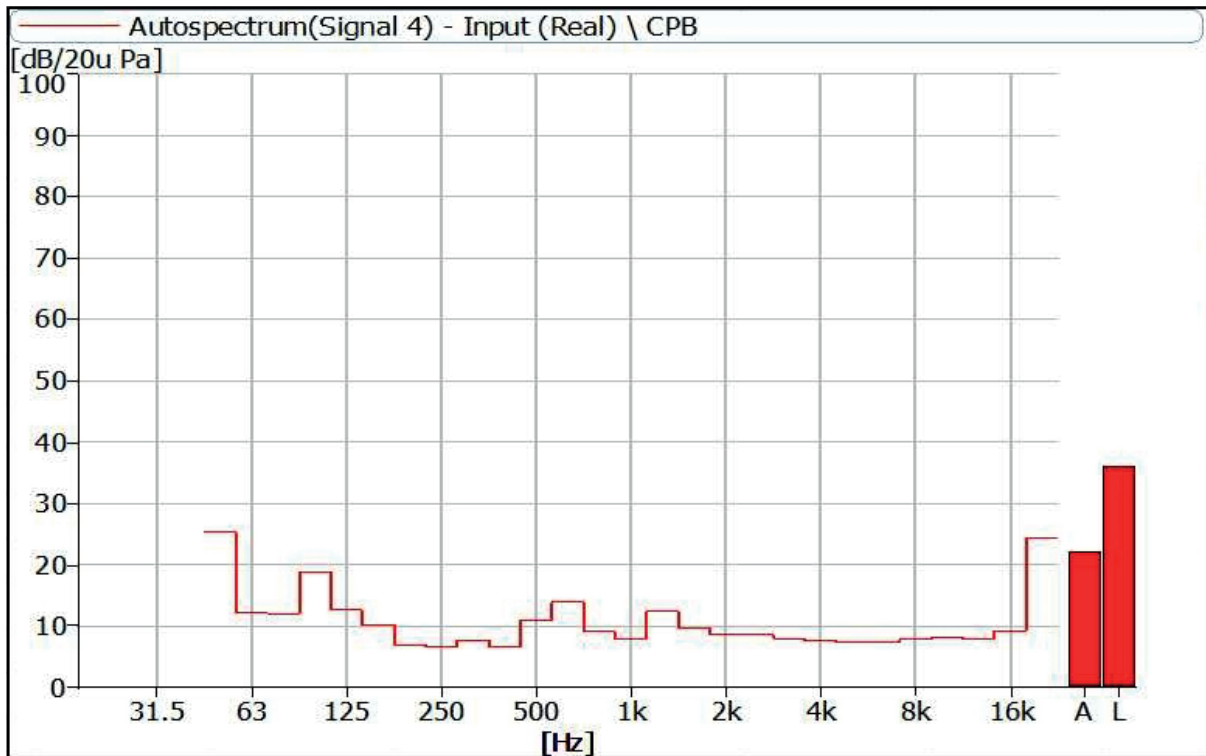


Figure 29 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 3)

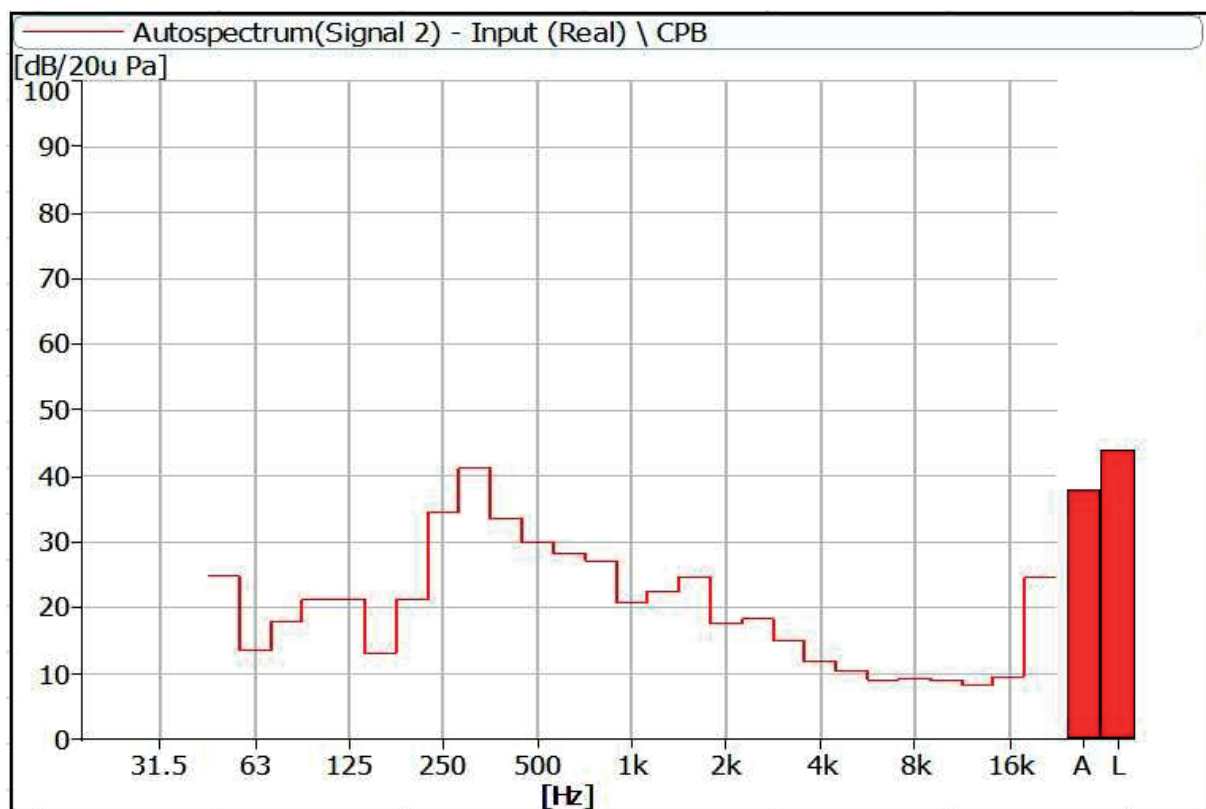


Figure 30 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 4)

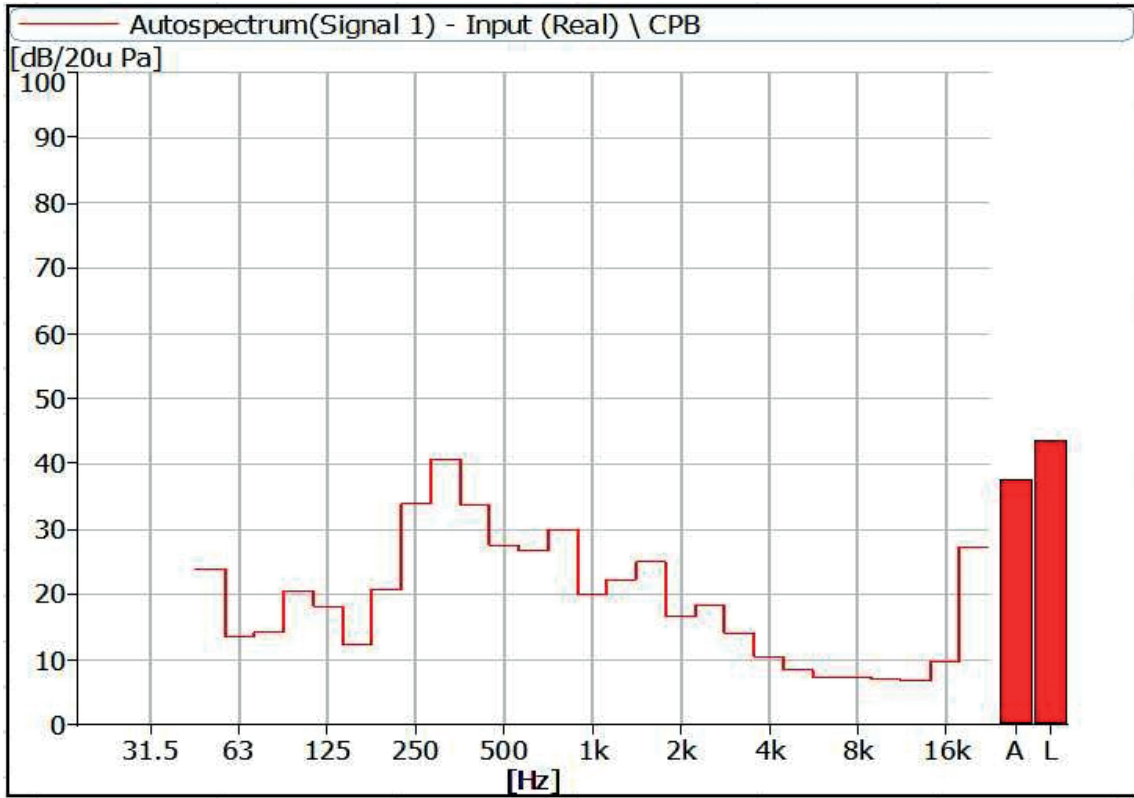


Figure 31 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 1)

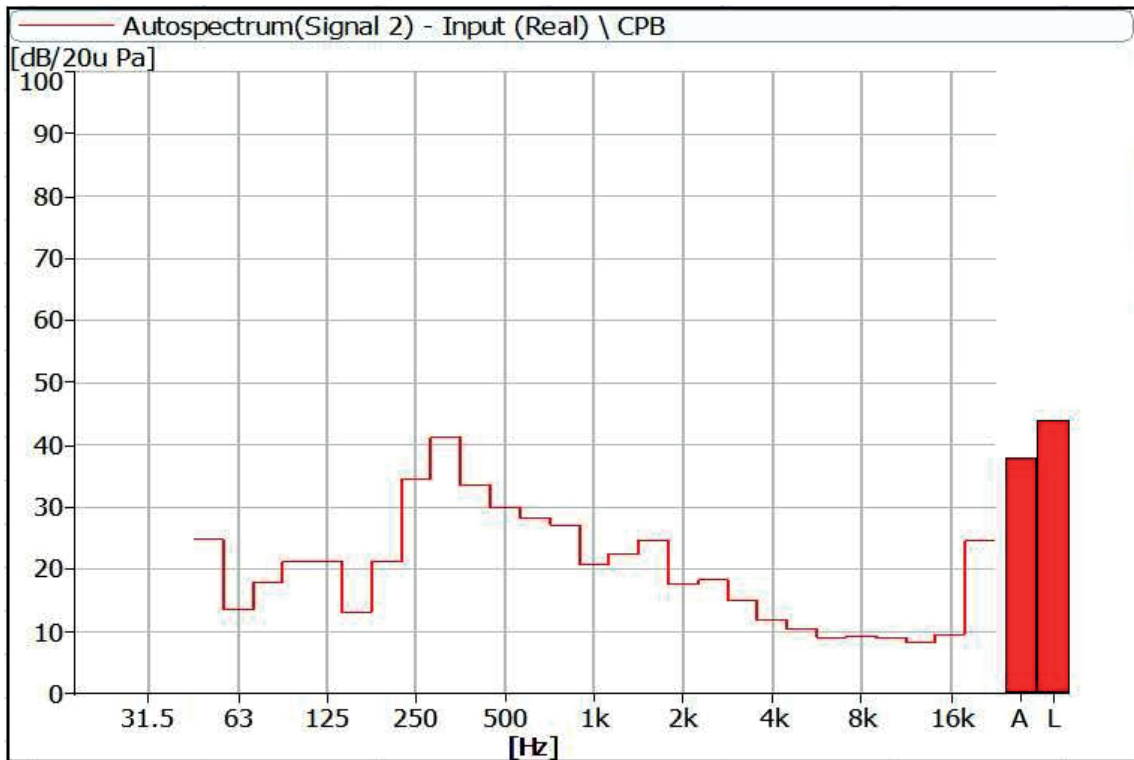


Figure 32 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 2)

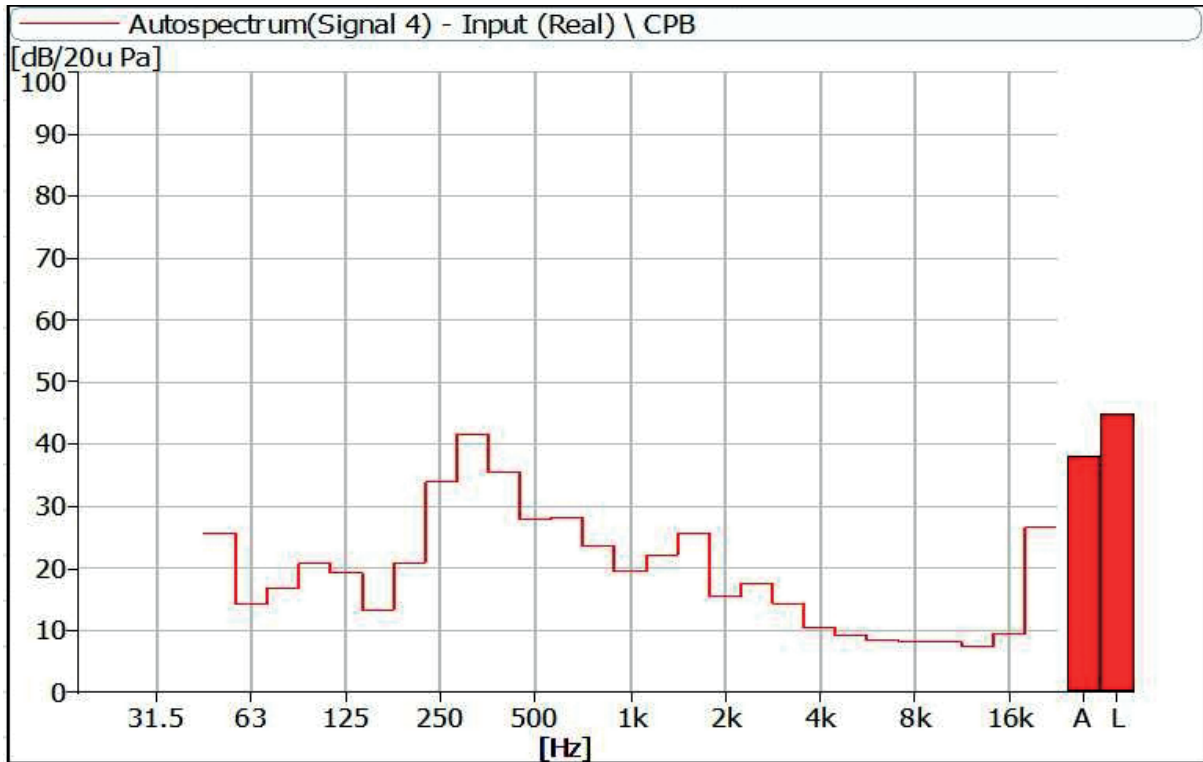


Figure 33 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 3)

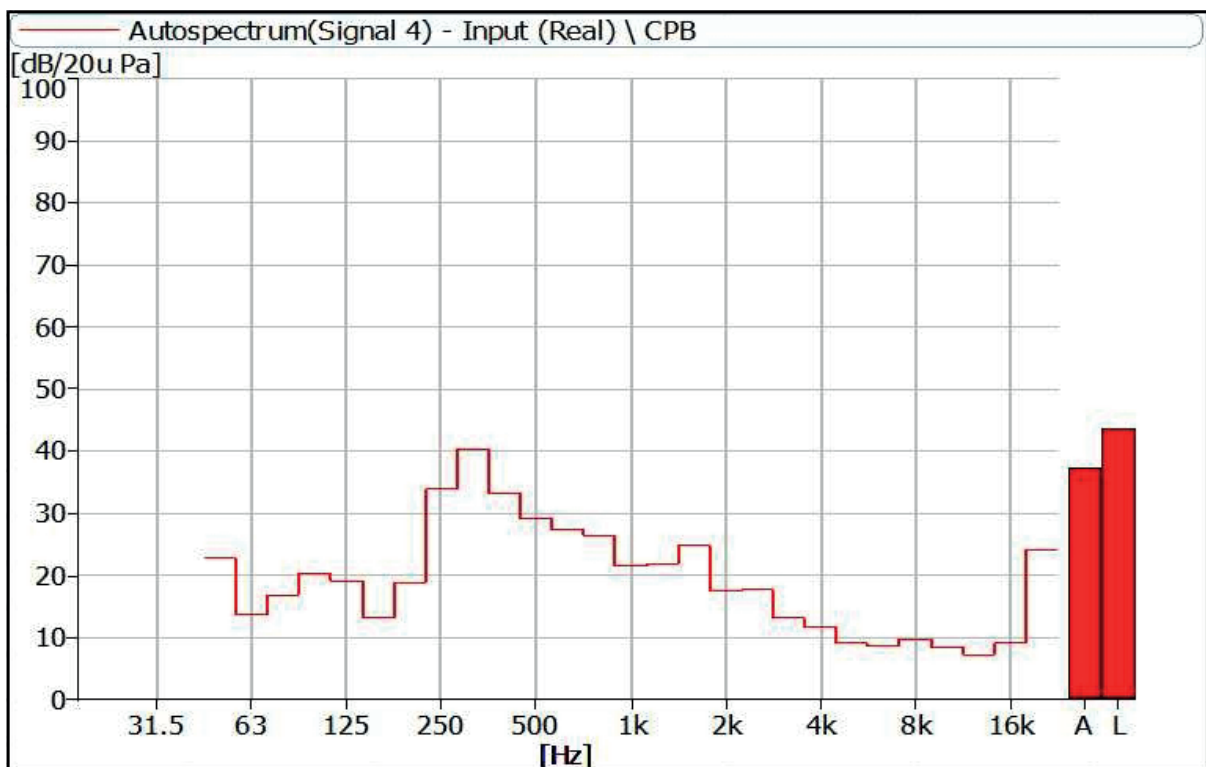


Figure 34 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 4)

Instrumentation

No	Equipment	Type	Number	Calibration Period
1	Anechoicrooms	--	R40010	2024-07-09
2	Noise Analyzer	3160-A-042	R40011-2	2025-06-19
3	Acoustic Calibrator	4231	R40011-1	2025-04-16
4	Gas-pressure meter	(970-1050) hPa	T40058-1	2024-06-14
5	Steel Tap	5m	ad040	2025-02-02



AYRTON

Digital Lighting