

MAMBA

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 58%, and the air pressure is 101.1kPa. 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.

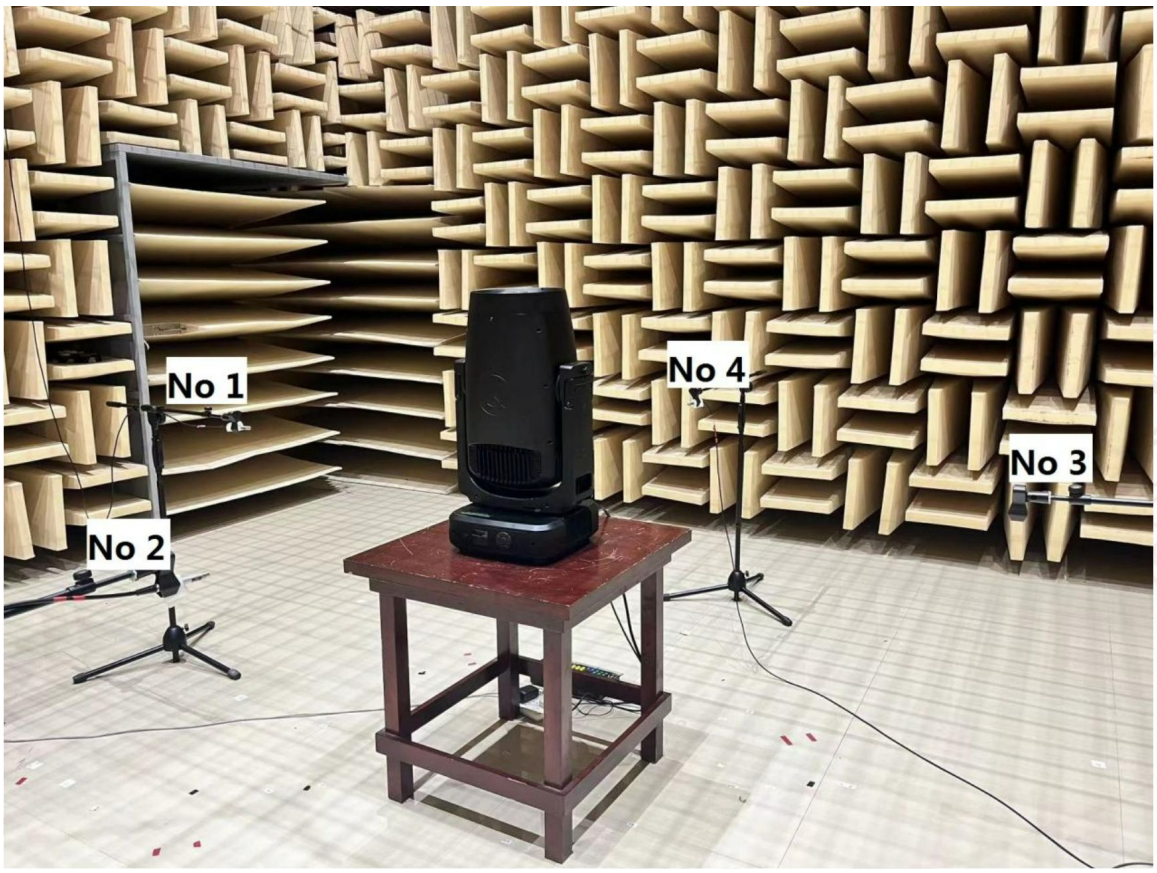

Figure 1 Test setup



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			
	Input power: 619.4w				Input power: 664.0w			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
50	23.6	22.4	22.5	23.4	23.0	20.7	22.0	22.2
63	16.1	21.3	15.6	21.6	20.1	20.7	18.9	18.3
80	16.1	22.0	14.6	21.7	21.9	25.1	21.7	21.7
100	18.7	23.0	17.9	23.5	24.9	23.5	23.5	23.9
125	15.4	23.0	14.0	22.5	24.9	26.5	26.3	26.9
160	19.7	33.0	16.9	32.6	36.2	38.5	34.6	37.8
200	18.1	27.8	17.2	27.6	36.7	37.8	37.9	39.2
250	22.9	33.1	21.5	32.7	36.9	37.4	34.9	35.9
315	25.1	34.7	24.4	34.5	34.9	35.1	35.1	34.8
400	32.4	38.9	30.9	40.7	41.8	42.7	42.3	40.3
500	28.3	33.4	28.8	34.3	39.9	40.8	39.1	40.5
630	30.9	33.8	31.1	35.3	38.7	37.8	38.2	37.0
800	37.0	40.1	35.1	37.5	40.1	40.1	38.7	39.1
1000	32.7	37.3	34.6	31.7	39.3	38.8	36.5	37.5
1250	32.3	40.5	34.3	34.3	39.7	38.2	36.4	35.9
1600	31.2	34.5	31.4	33.4	37.4	37.9	37.7	34.6
2000	28.0	31.4	30.3	33.0	34.0	36.2	34.8	32.9
2500	25.2	30.8	25.5	30.1	31.7	32.9	31.7	30.6
3150	23.8	31.4	24.2	27.7	32.0	32.9	31.4	30.0
4000	20.7	24.2	21.8	25.5	26.8	28.2	27.6	26.5
5000	18.2	22.4	17.8	20.6	23.5	25.7	24.1	23.8
6300	16.8	19.7	16.7	18.9	23.4	23.4	22.3	20.7
8000	12.5	15.9	11.9	14.7	18.1	18.4	18.0	16.8
10000	9.7	13.2	8.9	12.7	13.8	14.3	13.6	13.1
12500	9.4	11.6	8.3	12.1	12.4	12.7	11.3	11.9
16000	13.1	16.6	12.8	15.3	16.7	16.5	15.1	16.9
20000	24.7	29.7	32.6	28.6	35.7	34.3	33.6	36.6

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	Input power: 619.4w				Input power: 664.0w			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	42.9	47.6	43.0	46.5	49.8	50.2	49.3	49.1
A-weighted dB (A)	41.2	46.3	41.7	44.1	47.7	47.9	46.8	46.2
Average sound pressure level dB (A)	43.3				47.2			

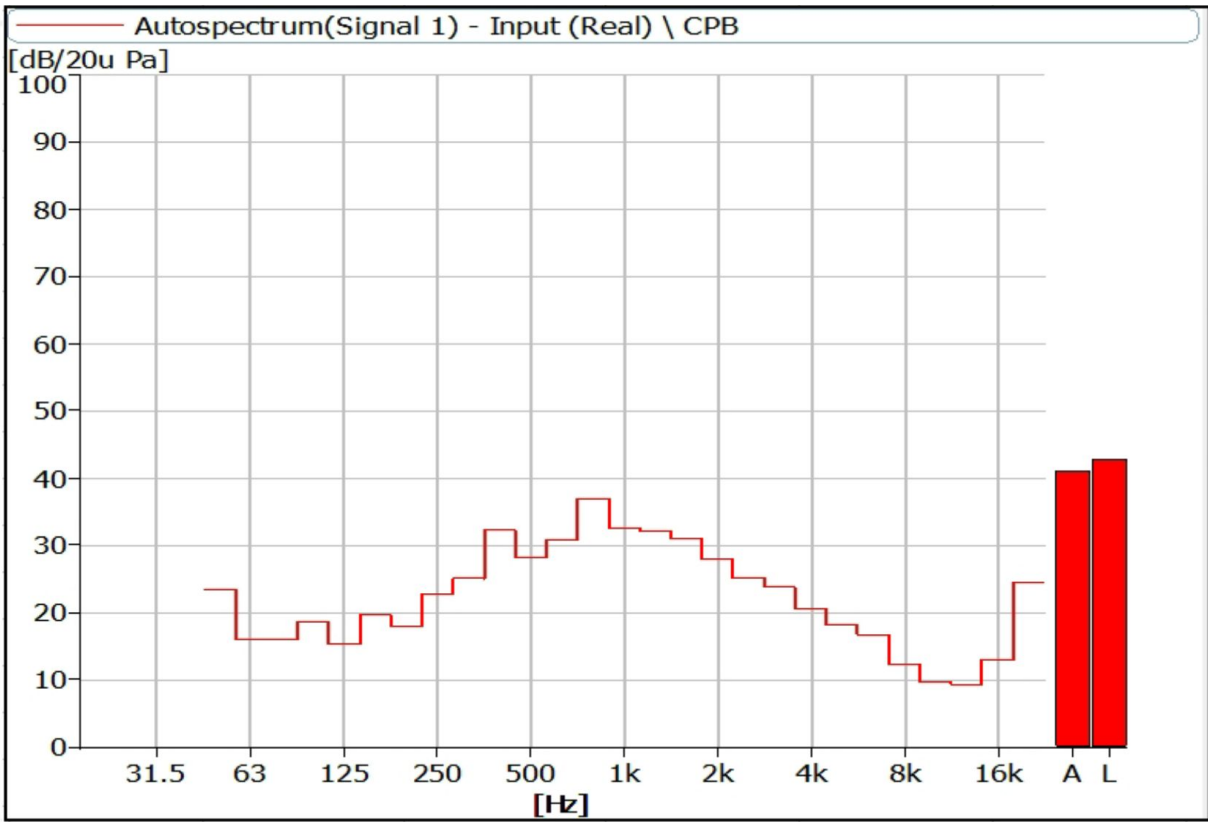

Figure 3 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 1)

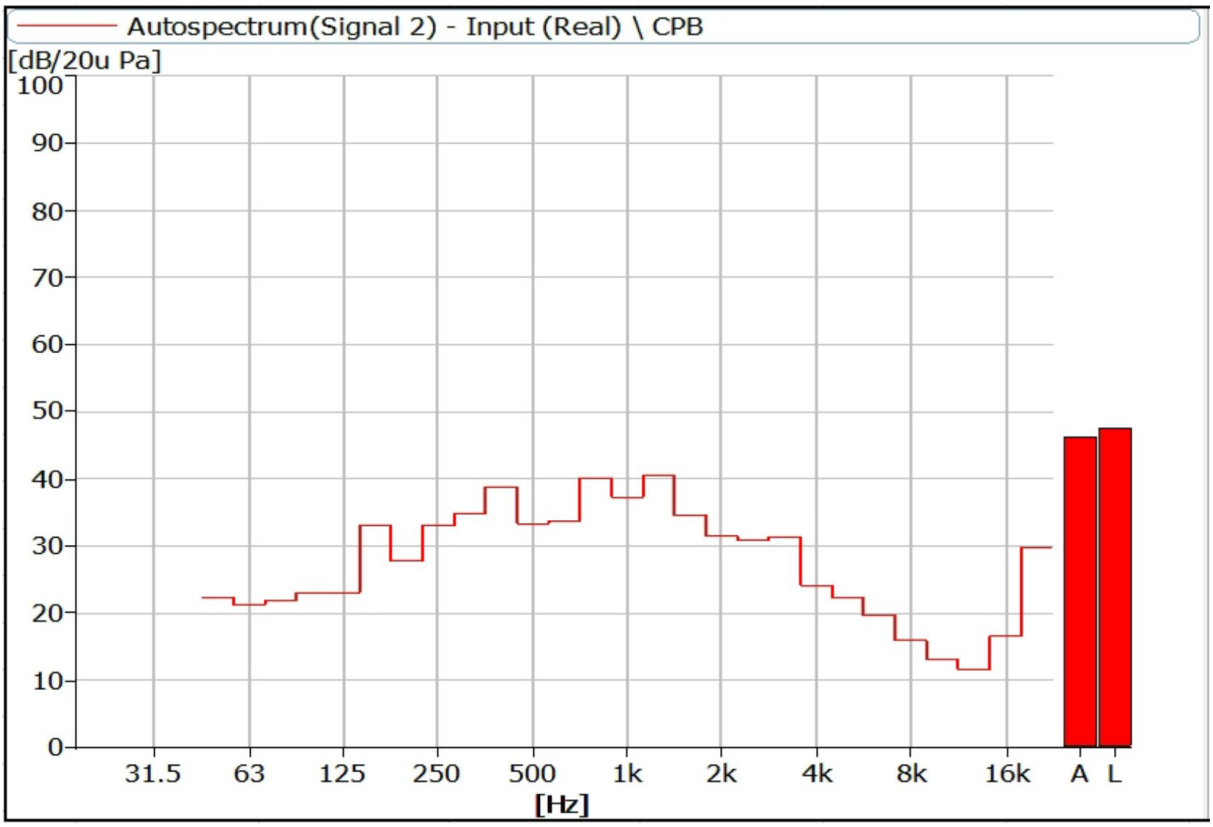

Figure 4 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 2)

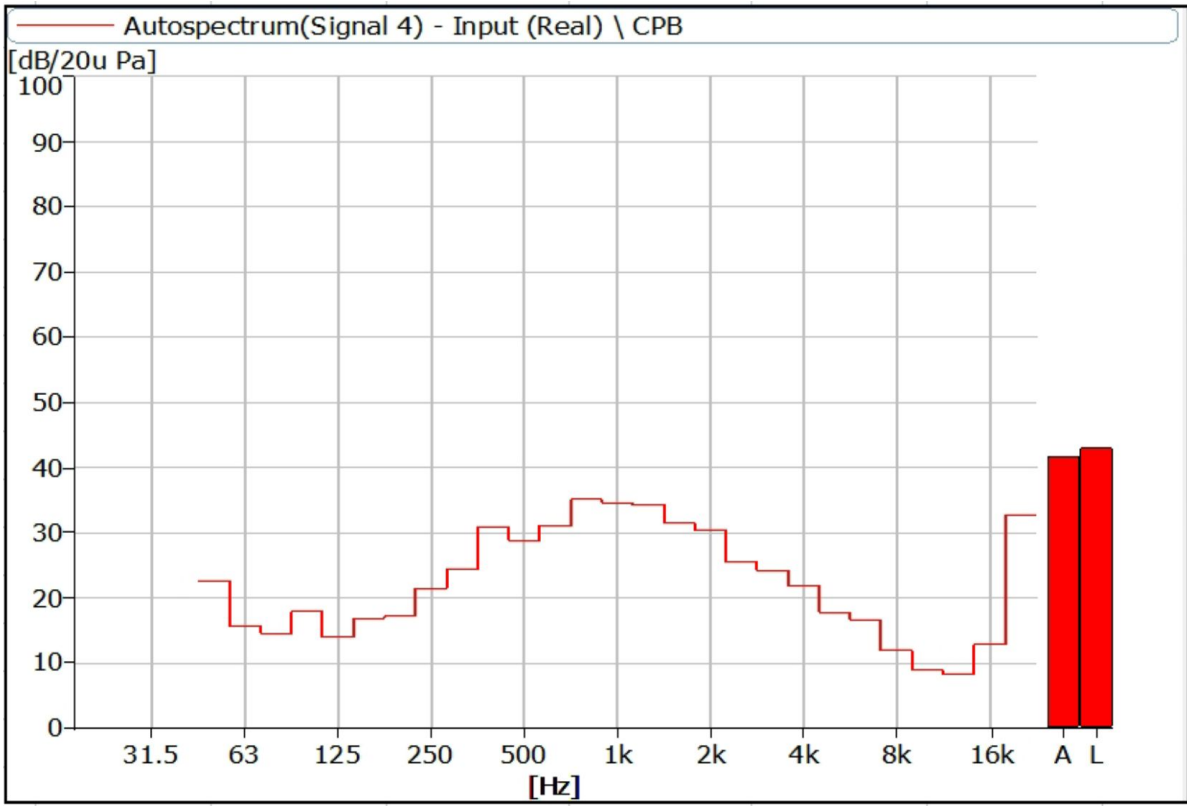

Figure 5 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 3)

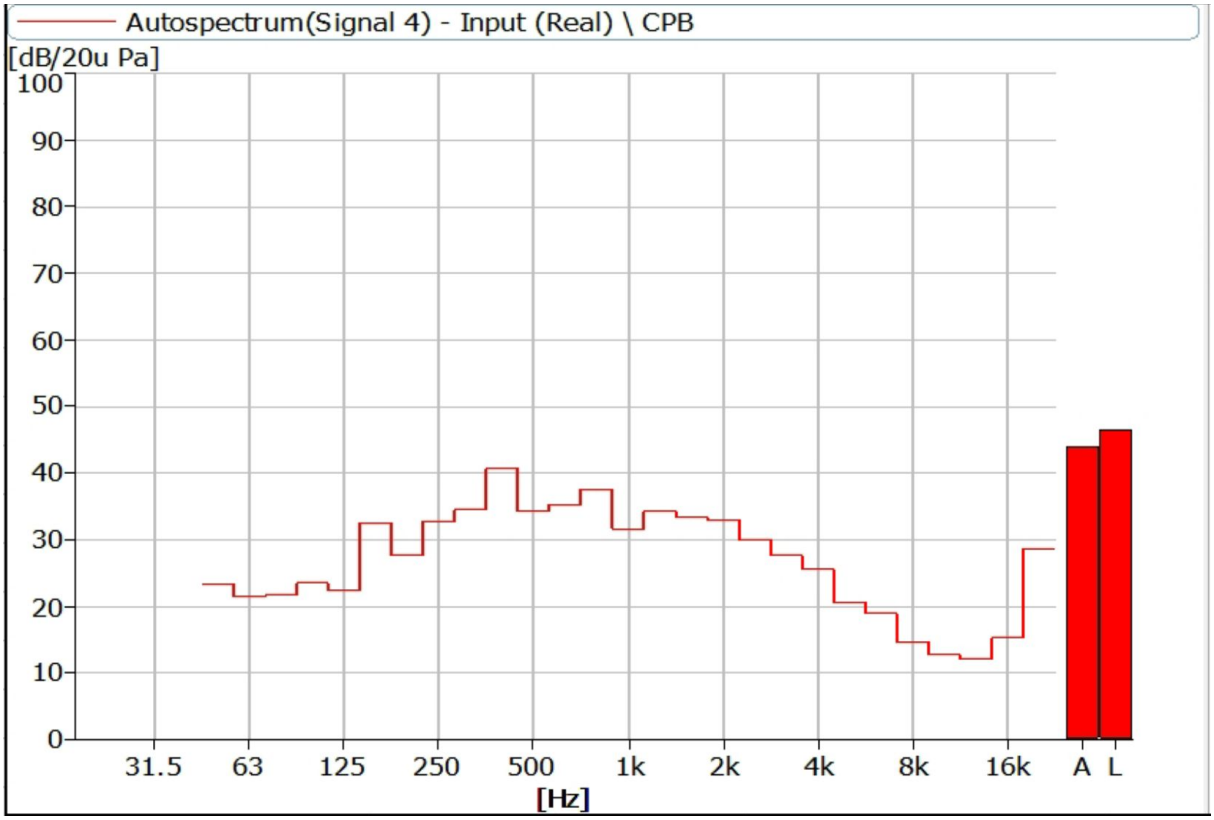

Figure 6 Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 4)

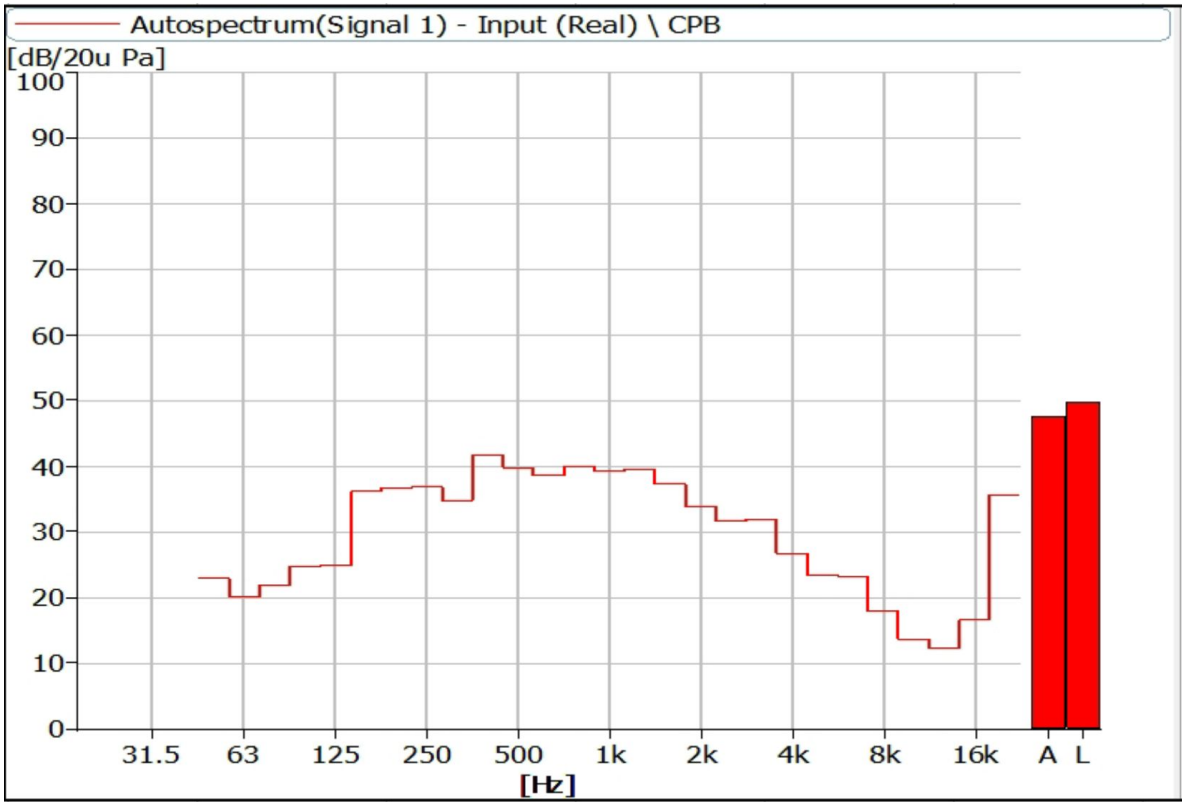

Figure 7 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 1)

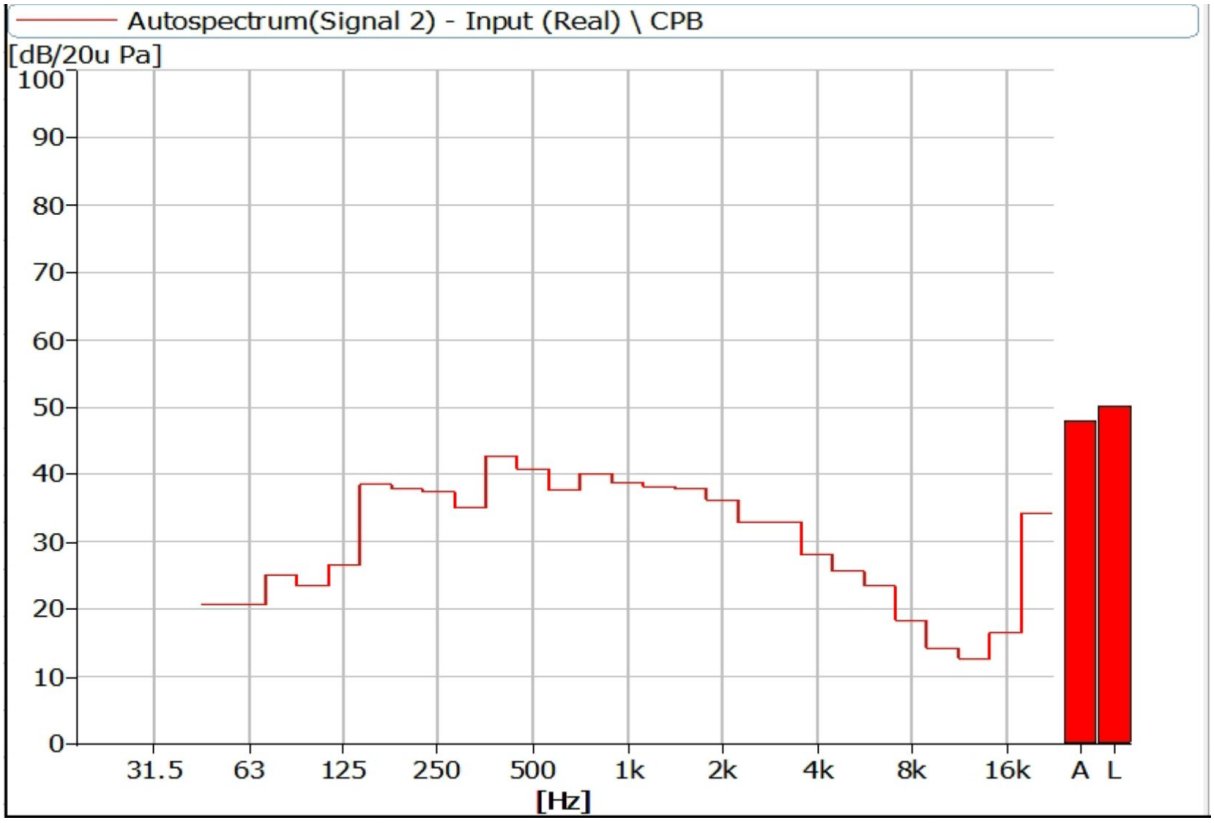

Figure 8 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 2)



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

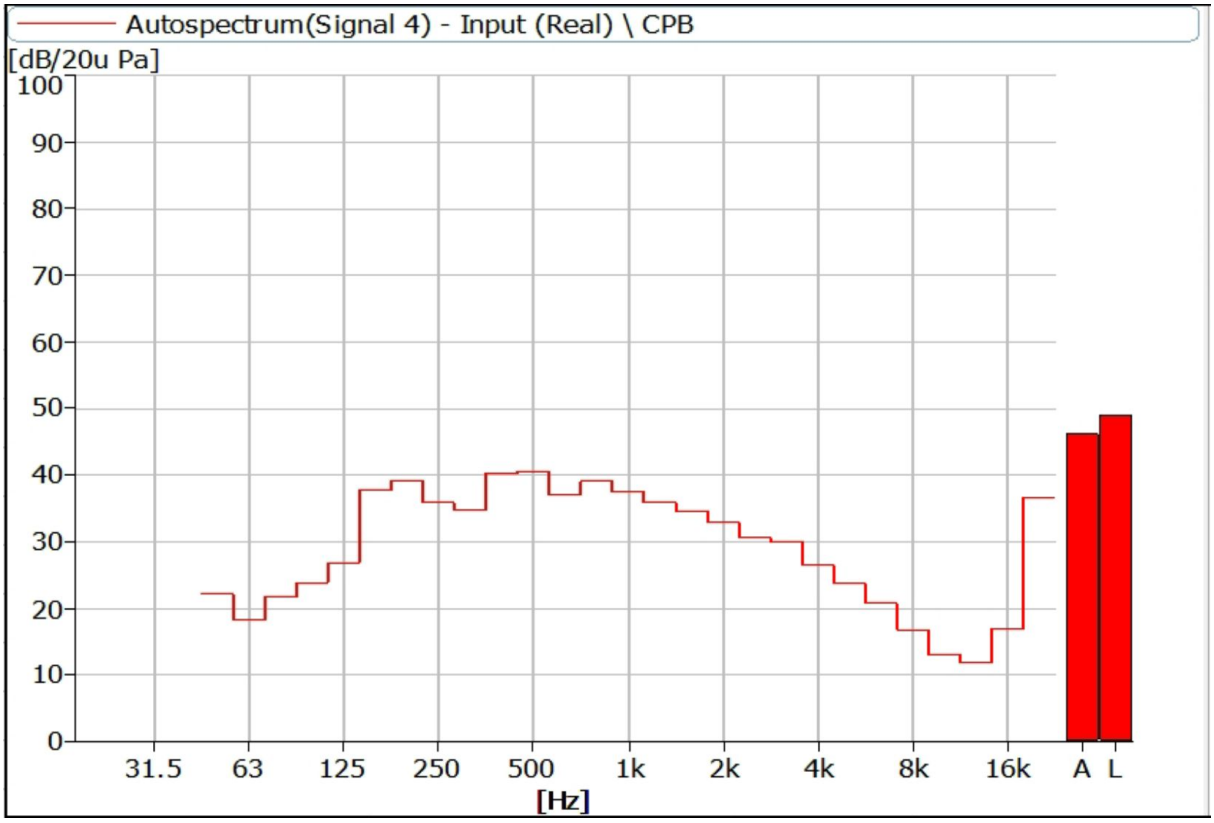

Figure 10 Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 4)

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

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	Input power: 655.6w				Input power: 688.3w			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
50	22.7	22.2	30.4	22.9	23.6	20.8	21.5	21.3
63	16.2	22.9	18.0	22.6	21.4	21.6	19.6	18.6
80	17.6	23.4	15.5	23.3	24.0	25.4	22.3	21.8
100	19.5	25.3	19.3	25.5	24.9	23.6	23.5	24.3
125	15.9	25.7	17.2	24.0	25.5	27.4	27.1	26.5
160	25.6	33.1	21.4	30.0	36.4	38.6	34.9	37.7
200	19.2	28.8	17.9	28.7	37.3	38.1	38.0	39.9
250	24.4	34.1	23.0	33.6	37.5	37.7	34.9	36.6
315	26.7	36.2	24.8	35.9	35.5	35.5	35.4	34.8
400	36.6	41.9	28.0	44.0	41.7	42.8	42.4	40.4
500	32.7	38.0	33.2	39.4	40.2	41.1	39.5	40.9
630	32.0	35.2	32.5	36.6	39.4	38.4	38.6	37.4
800	38.4	42.8	38.5	39.4	40.1	40.4	38.6	39.1
1000	34.6	39.6	36.2	33.5	39.2	38.8	36.5	37.6
1250	33.9	42.8	35.9	36.8	39.7	38.2	36.3	35.9
1600	33.9	37.5	33.8	35.8	37.4	37.9	37.6	34.4
2000	30.9	34.3	33.0	36.0	34.0	36.3	34.9	33.0
2500	28.3	34.0	28.8	33.1	31.7	33.0	31.7	30.7
3150	27.9	33.8	27.8	29.9	31.8	32.7	31.6	30.0
4000	24.0	27.7	24.4	29.7	26.6	28.1	27.5	26.6
5000	21.8	26.0	21.3	25.4	23.5	25.7	24.1	24.0
6300	20.1	23.3	20.3	21.6	23.3	23.5	22.3	20.7
8000	15.1	19.3	14.2	18.5	18.1	18.4	17.5	16.9
10000	11.0	16.4	10.3	14.9	13.8	14.3	13.6	13.2
12500	10.1	13.9	9.3	13.2	12.4	12.8	11.4	11.9
16000	10.6	18.0	12.2	13.0	16.1	16.0	14.5	16.7
20000	20.3	32.4	31.7	24.7	34.1	32.6	32.1	36.2

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	Input power: 655.6w				Input power: 688.3w			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	44.9	50.0	44.9	48.9	50.0	50.3	49.2	49.3
A-weighted dB(A)	43.5	48.9	44.0	46.8	47.8	48.0	46.8	46.3
Average sound pressure level dB(A)	45.8				47.2			

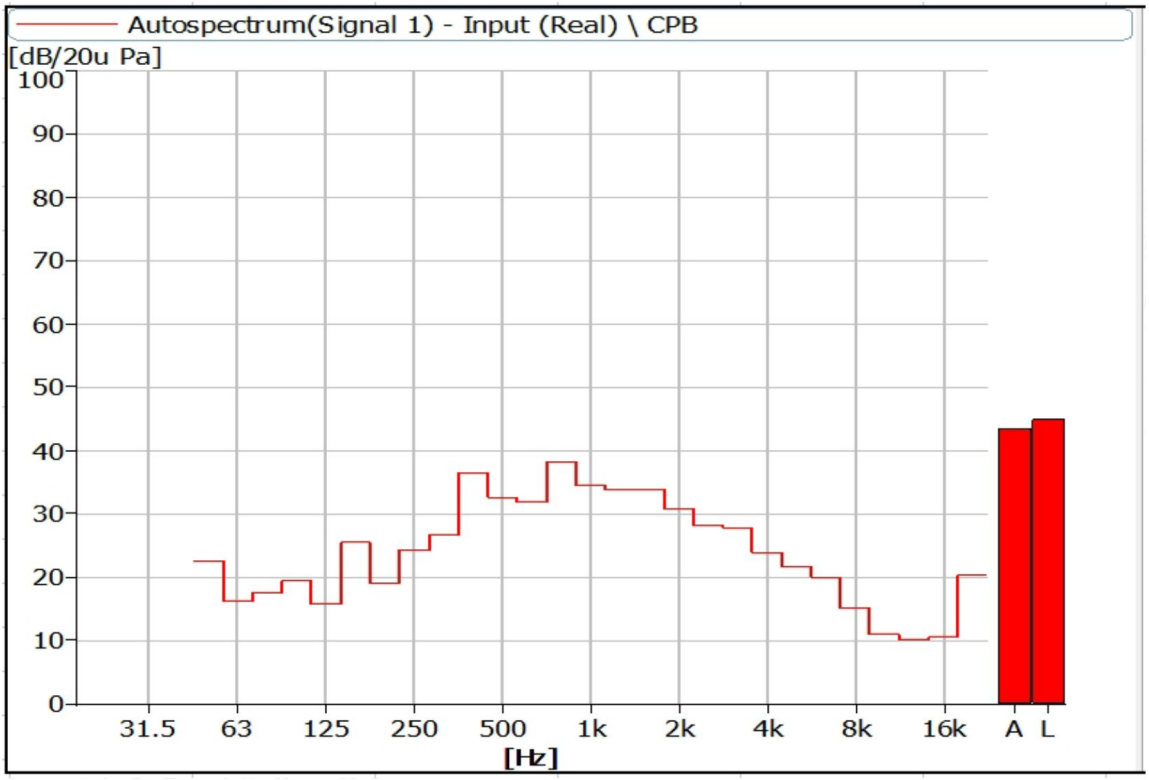

Figure 11 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 1)

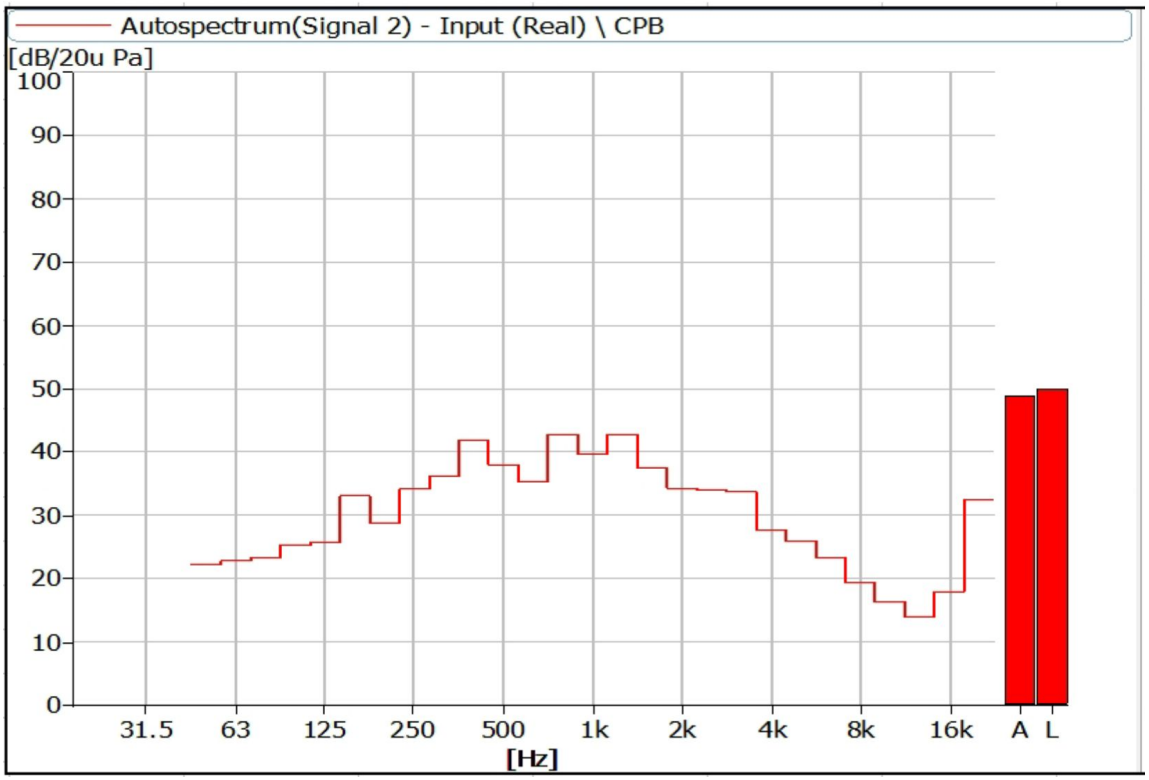

Figure 12 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 2)

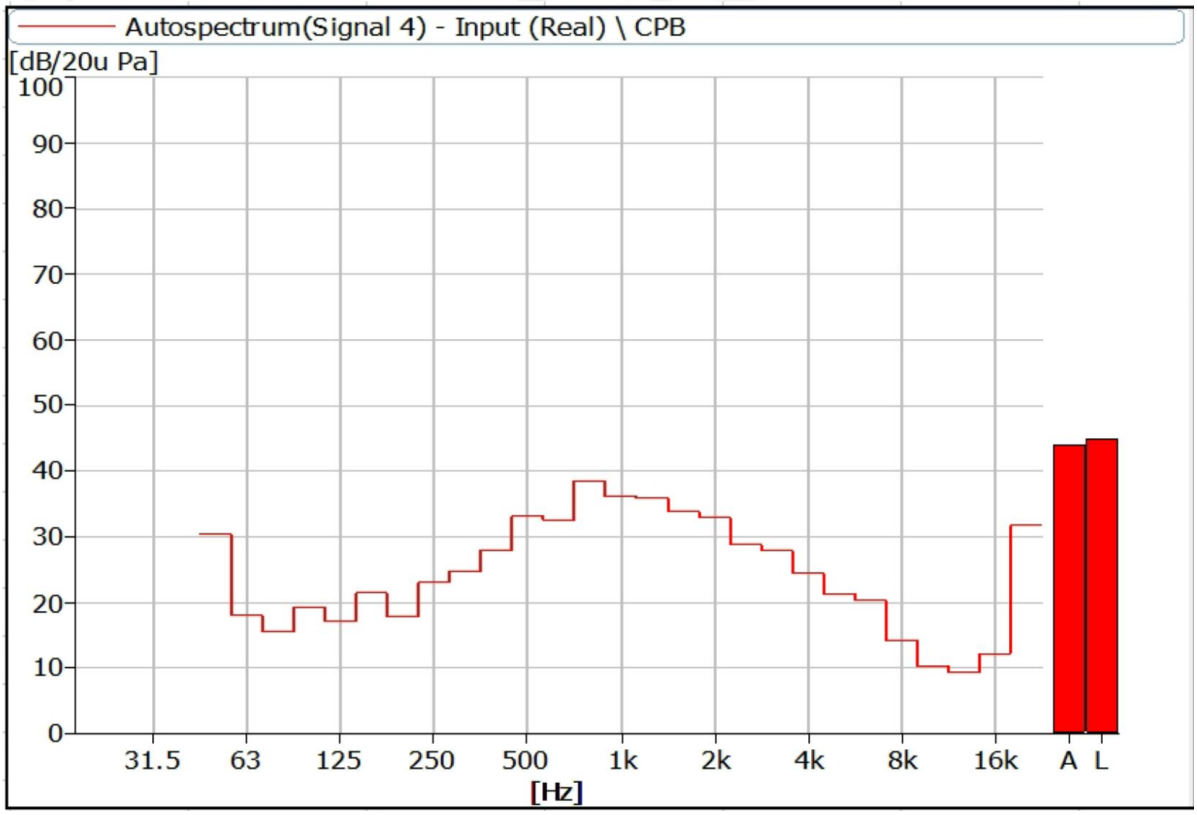

Figure 13 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 3)

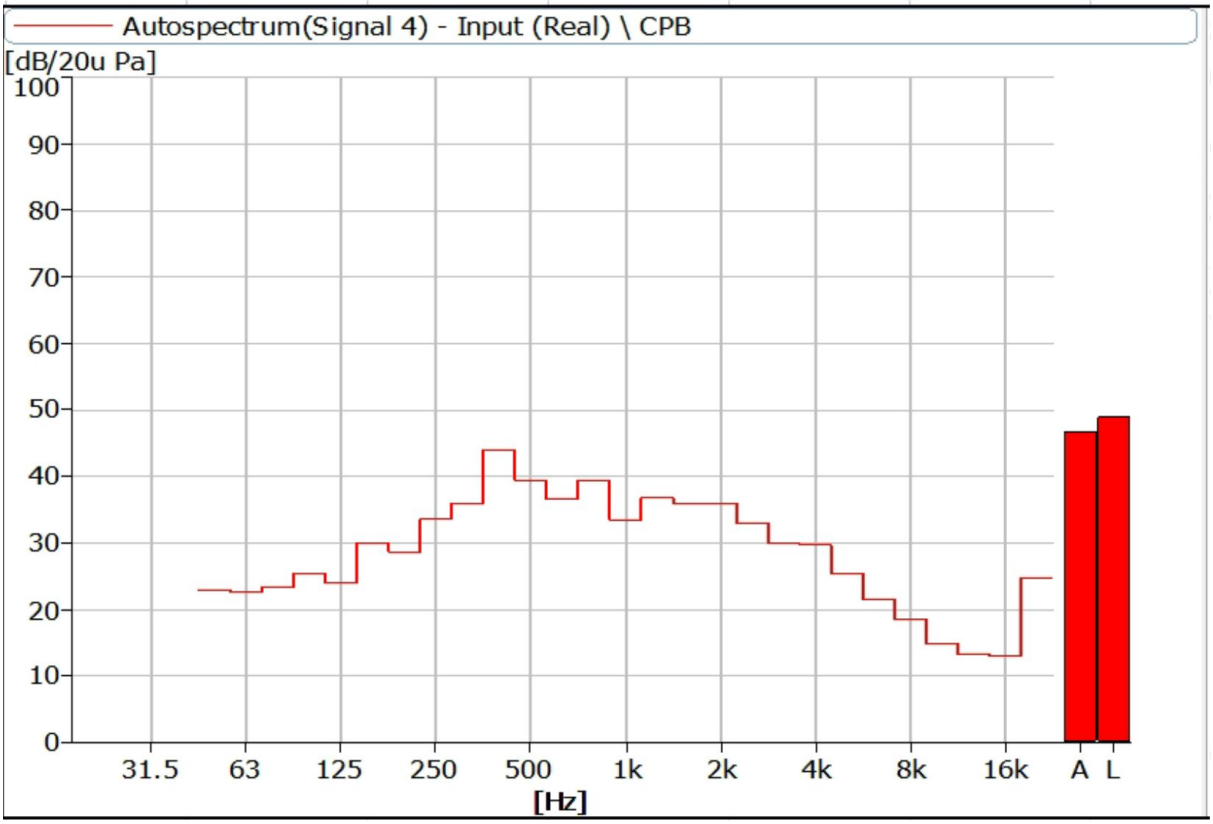

Figure 14 Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 4)

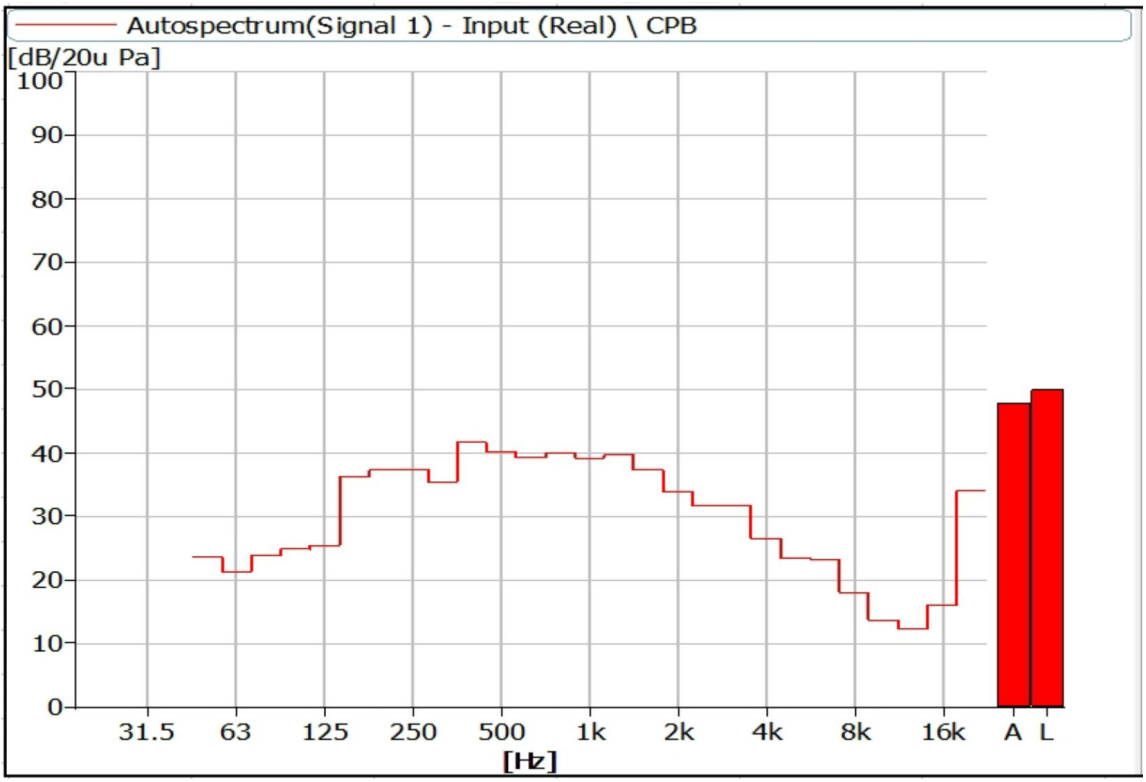

Figure 15 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 1)

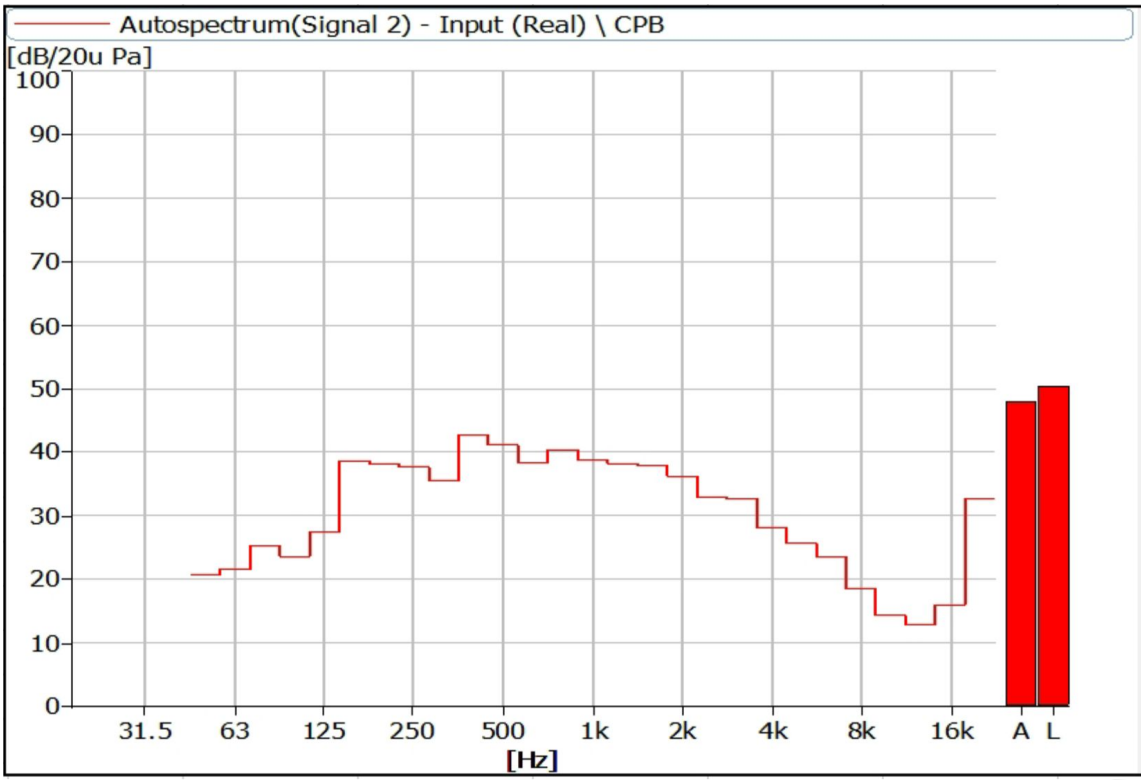

Figure 16 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 2)

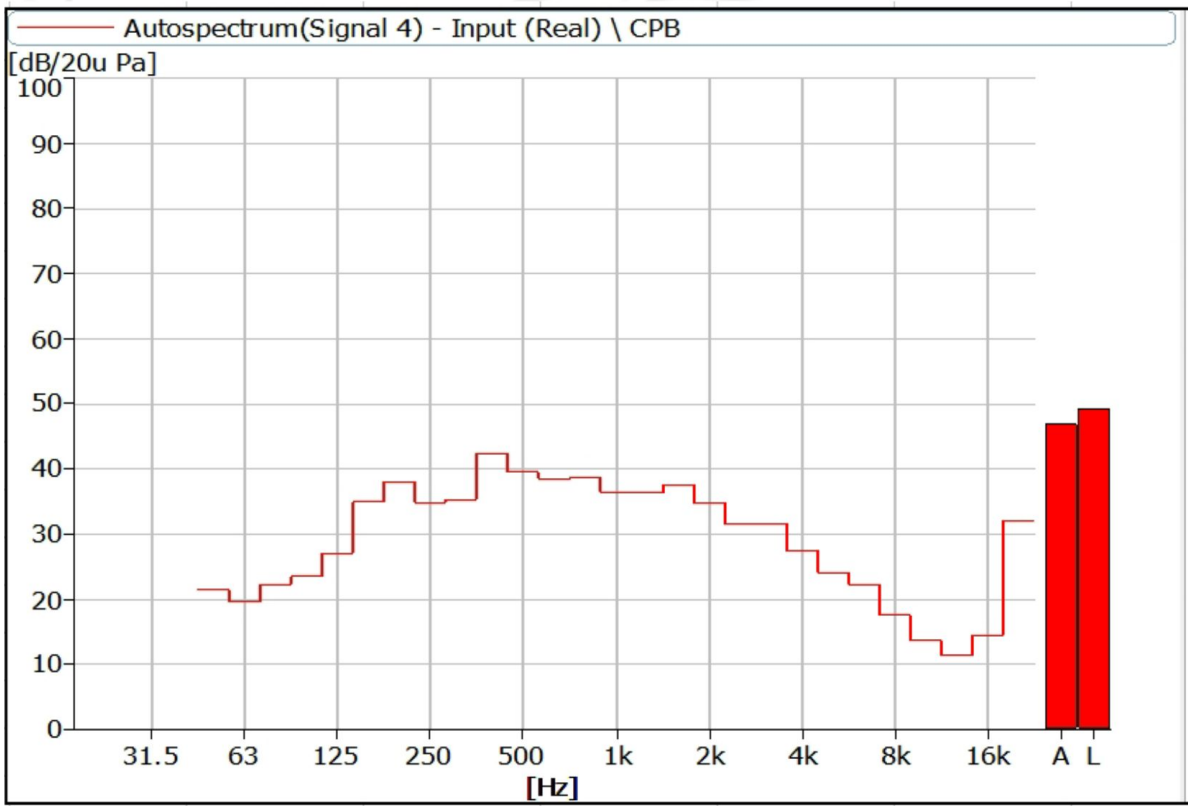

Figure 17 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 3)

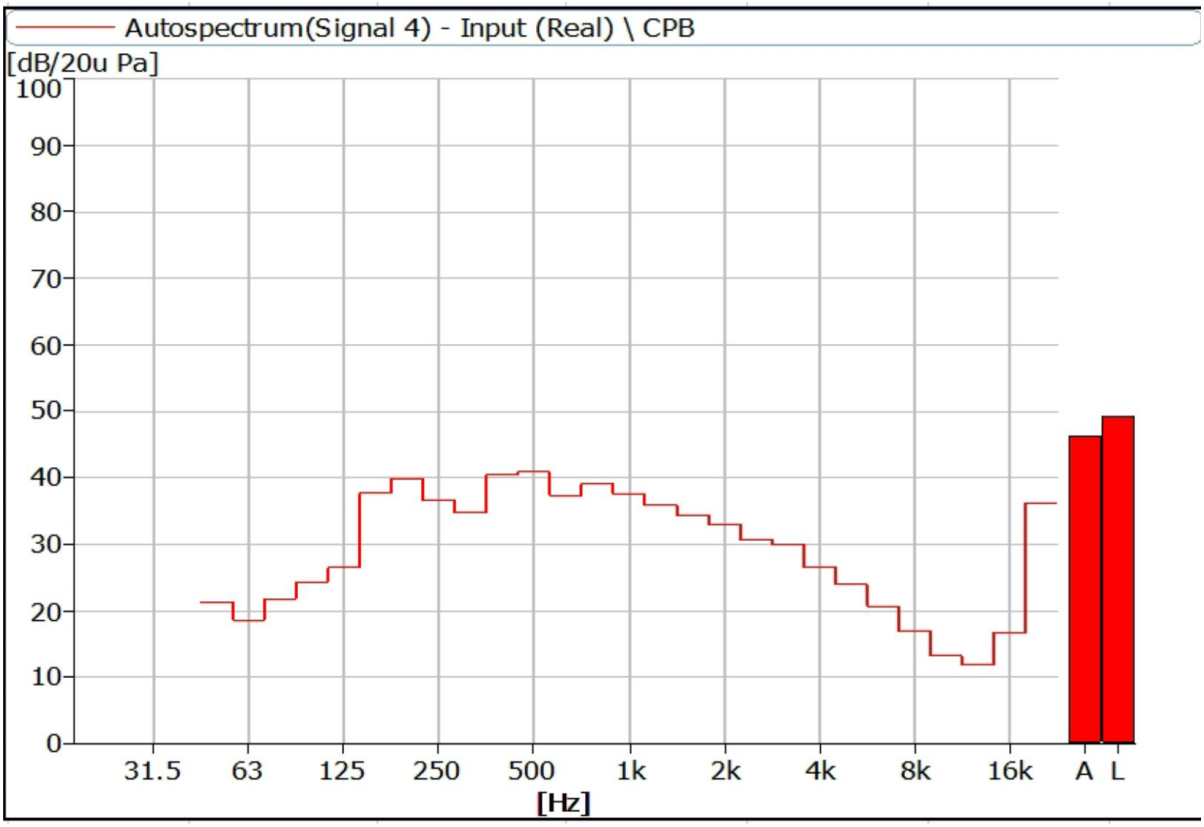

Figure 18 Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 4)

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

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	Input power: 535.0w				Input power: 561.4w			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
50	22.3	20.1	19.8	20.1	24.3	20.0	20.8	19.4
63	13.8	15.1	12.5	15.4	18.4	20.6	17.1	16.7
80	13.6	15.5	12.2	15.6	21.4	25.3	21.2	21.1
100	18.6	17.9	18.7	19.5	25.1	23.7	23.7	24.7
125	18.1	19.9	13.6	20.1	24.5	26.4	25.7	26.0
160	32.5	33.8	26.9	34.3	34.6	37.7	33.8	34.9
200	14.8	22.7	13.8	23.0	37.1	37.9	37.9	39.5
250	27.4	34.5	25.9	34.5	37.5	37.9	35.5	35.8
315	17.8	25.3	20.7	24.9	35.8	35.7	34.9	36.4
400	21.3	23.8	22.6	25.6	37.0	39.5	38.8	37.9
500	22.2	26.2	23.4	27.5	39.8	41.1	39.0	40.8
630	21.8	24.0	22.1	24.8	38.5	37.8	37.7	36.6
800	26.2	28.3	23.8	26.2	30.0	31.2	30.6	31.3
1000	21.9	25.7	22.8	21.8	28.0	27.4	26.4	29.7
1250	23.5	31.2	24.3	27.9	29.8	28.3	28.0	29.3
1600	21.7	23.6	21.2	24.8	25.1	25.3	25.4	26.6
2000	17.5	21.8	21.2	22.0	23.3	24.0	23.5	25.1
2500	15.6	20.8	16.4	17.2	22.9	23.3	24.2	23.4
3150	17.4	21.9	15.0	17.2	21.4	22.8	21.0	21.7
4000	12.1	15.1	12.6	13.6	14.9	15.4	16.4	16.9
5000	10.1	11.3	9.7	10.3	12.7	14.1	13.0	15.4
6300	9.3	9.7	9.4	11.2	11.1	11.1	11.7	11.3
8000	8.8	9.9	8.4	10.1	10.6	10.8	10.1	10.4
10000	8.6	9.2	7.9	10.2	9.5	9.8	9.3	9.2
12500	8.6	9.5	8.1	11.7	9.4	9.7	9.0	9.5
16000	11.5	18.3	14.4	15.3	18.0	19.3	17.5	19.0
20000	27.6	29.4	32.7	29.7	34.1	32.9	32.0	35.6

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	Input power: 535.0w				Input power: 561.4w			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	38.9	41.0	37.8	40.9	46.9	47.7	46.4	47.3
A-weighted dB(A)	32.1	36.5	32.5	35.1	42.2	42.8	41.8	42.5
Average sound pressure level dB(A)	34.1				42.3			

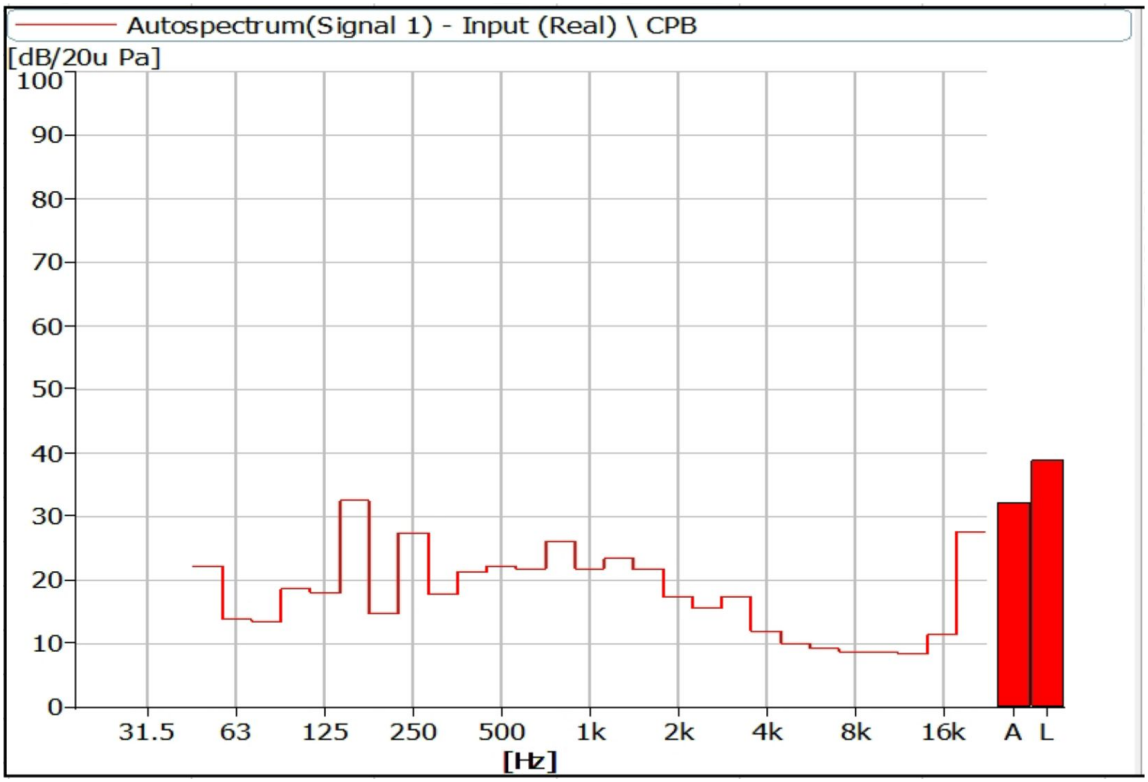

Figure 19 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 1)

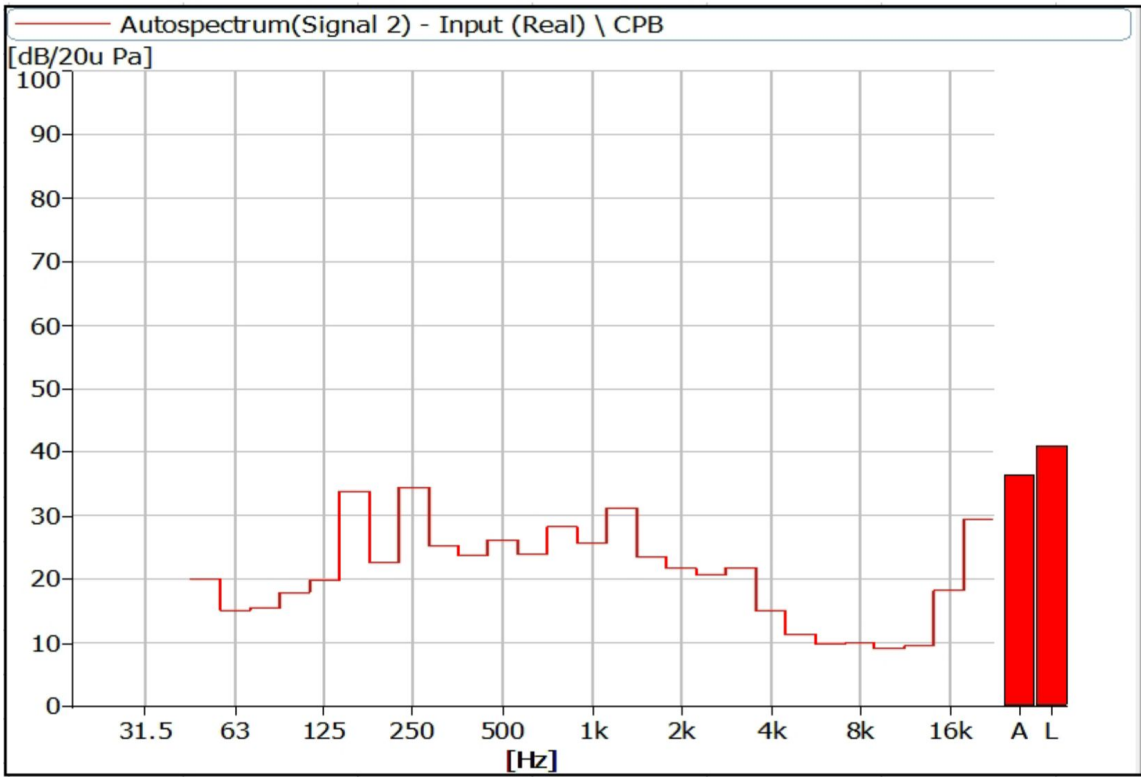

Figure 20 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 2)

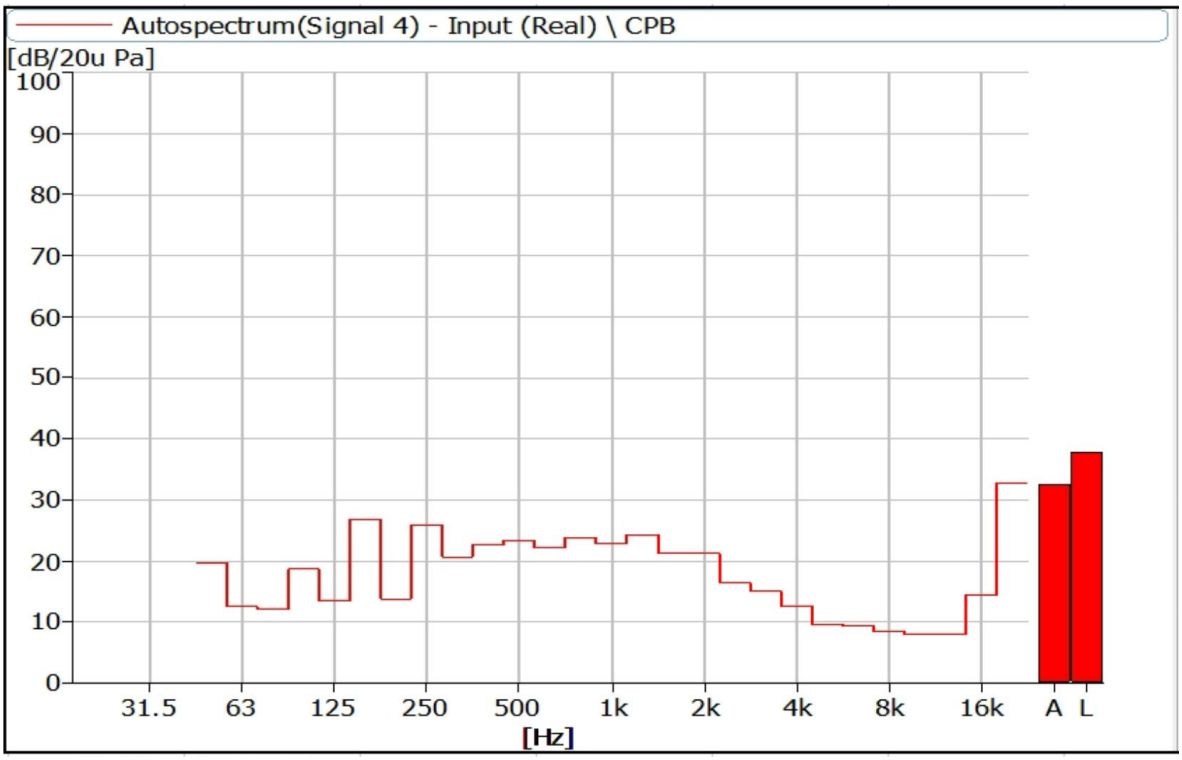

Figure 21 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 3)

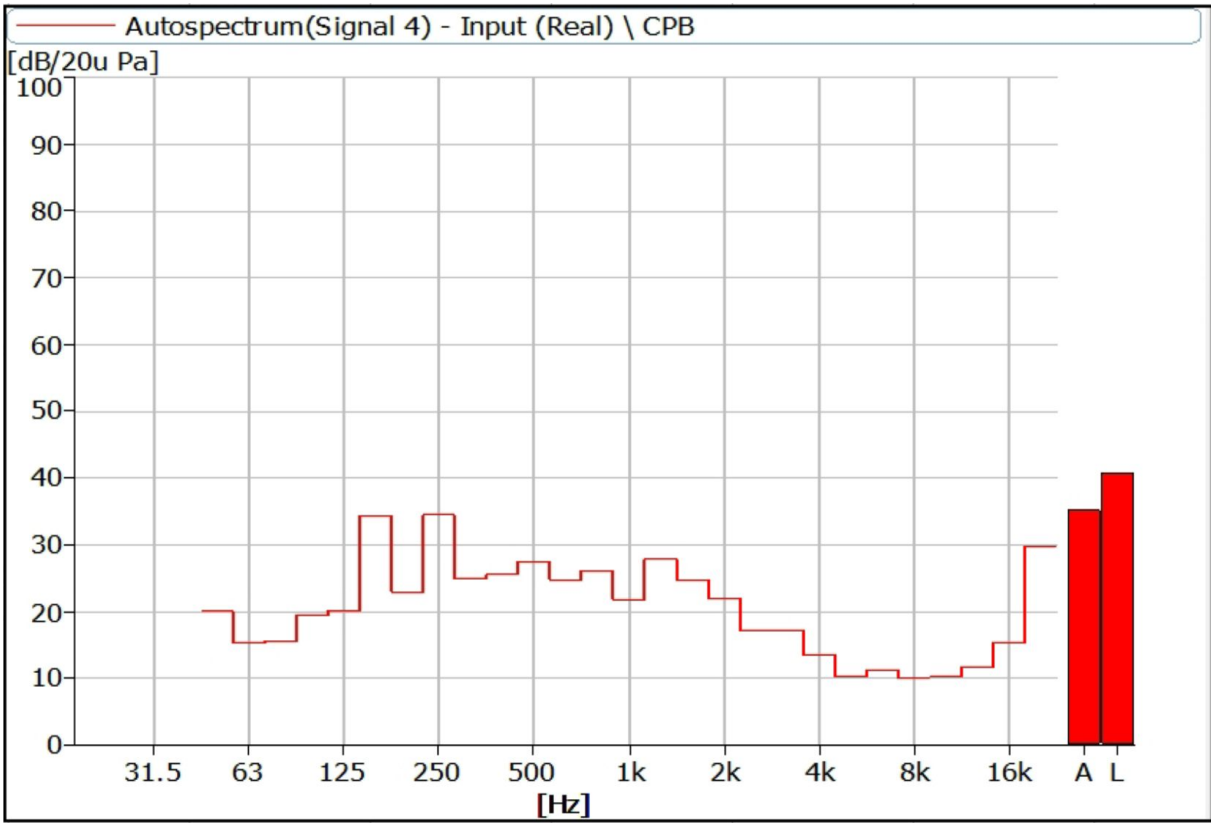

Figure 22 Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 4)

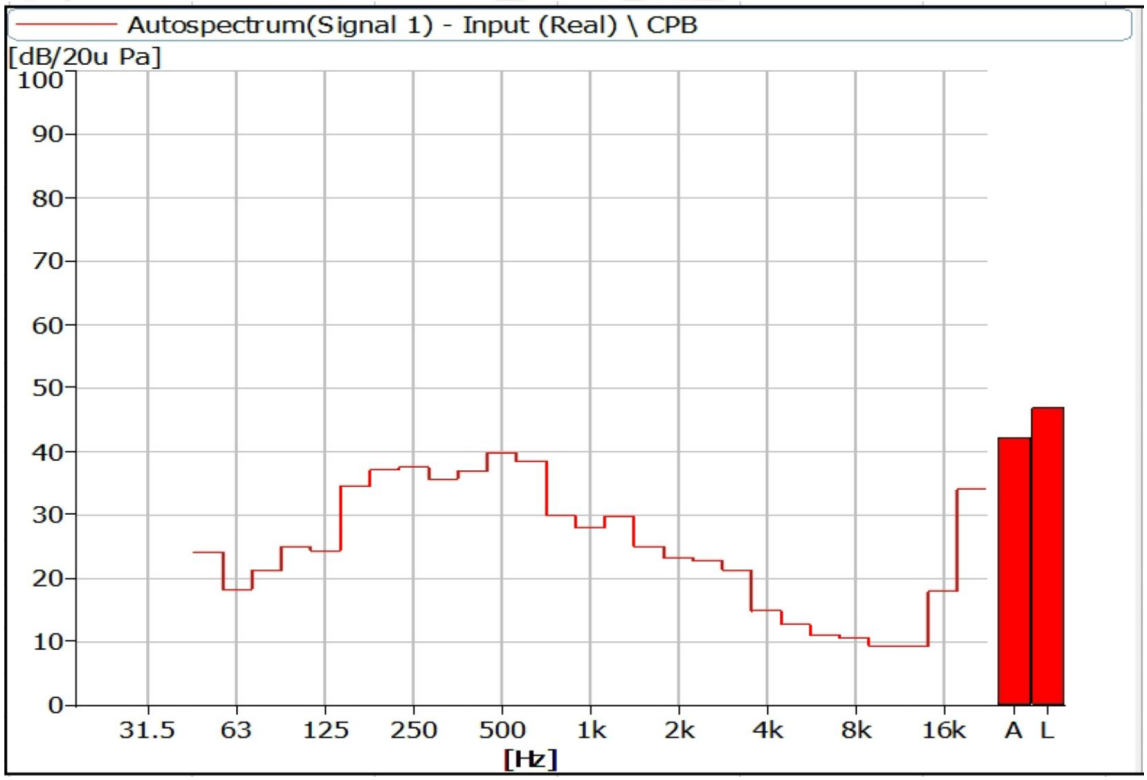

Figure 23 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 1)

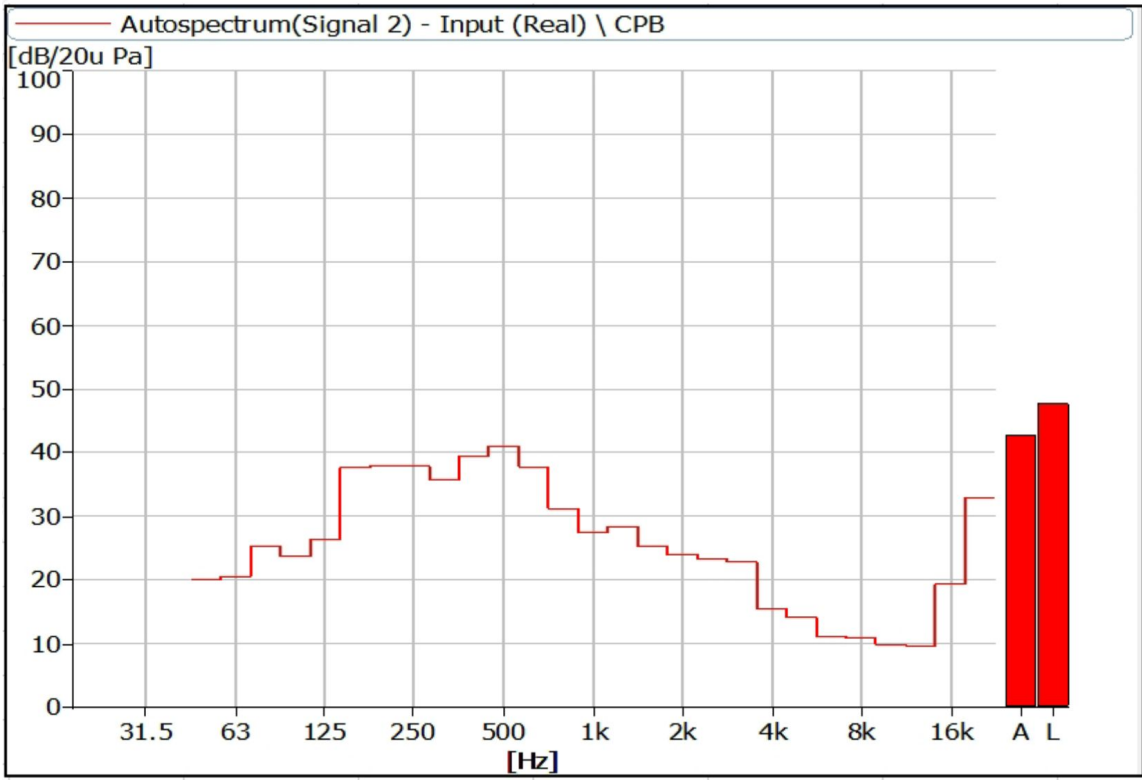

Figure 24 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 2)

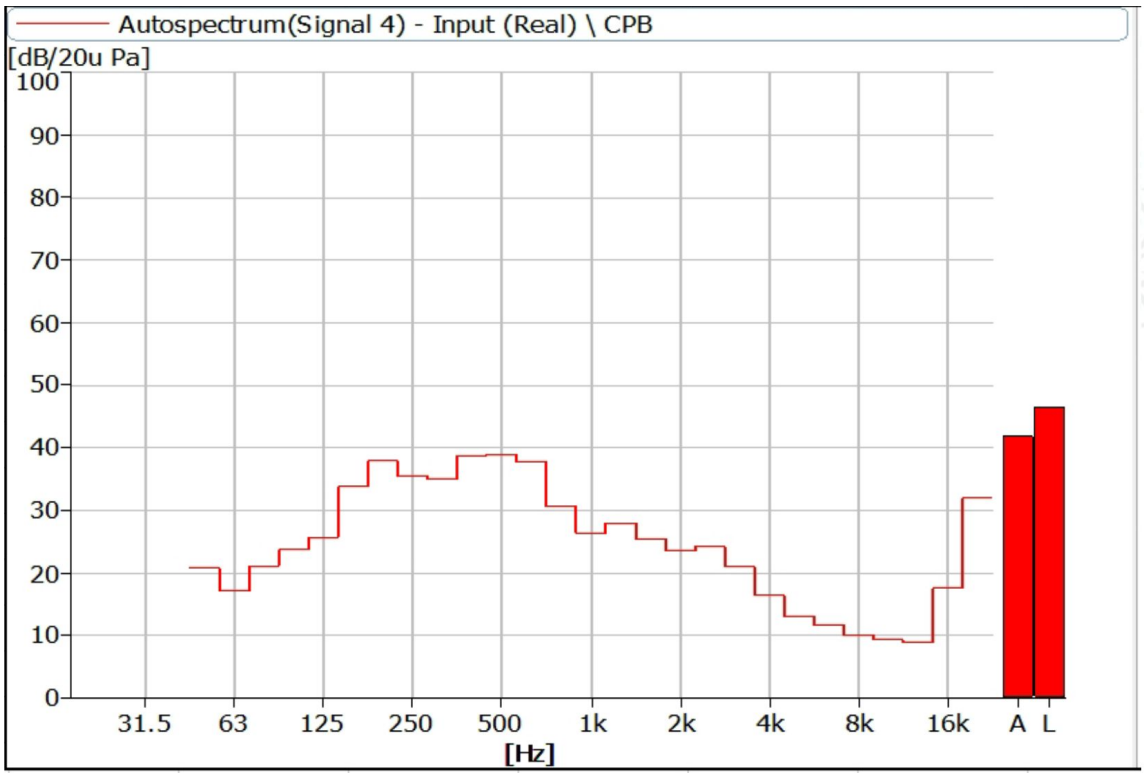

Figure 25 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 3)

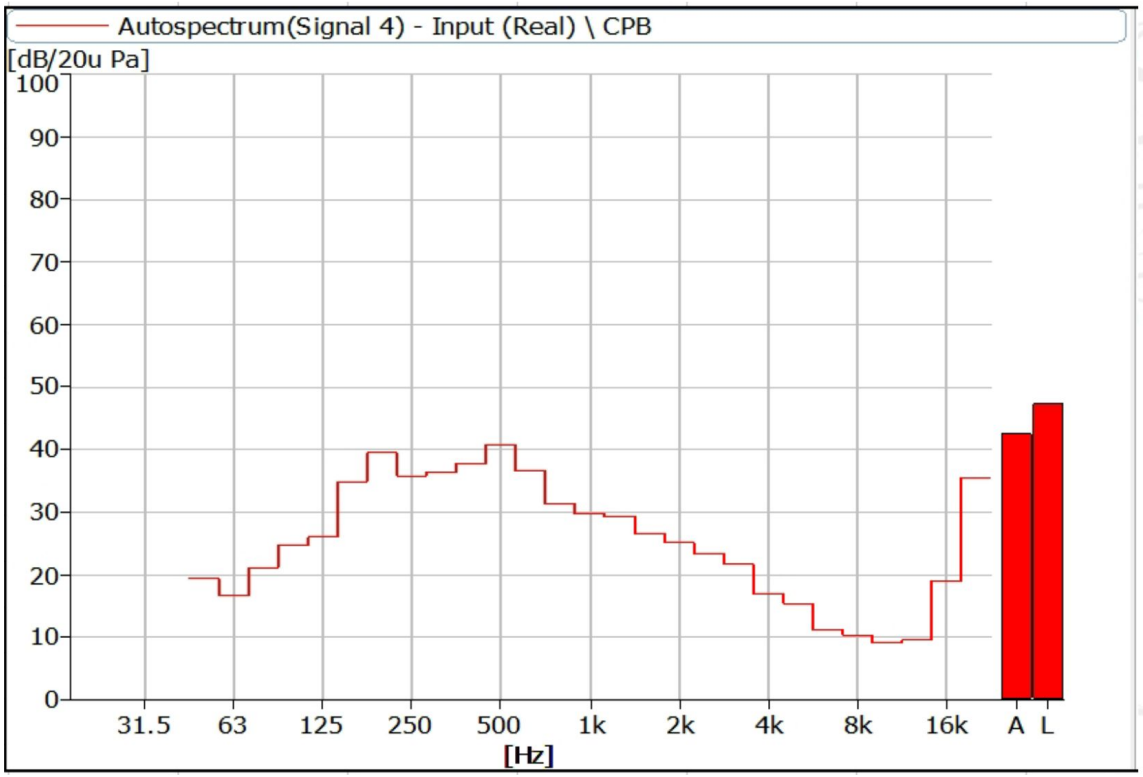

Figure 26 Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 4)

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

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	Input power: 501.1w				Input power: 541.5w			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
50	22.5	20.1	20.7	18.3	23.8	20.8	21.1	34.8
63	14.4	14.2	12.5	13.8	21.7	24.4	19.8	28.9
80	13.9	15.1	12.5	14.0	23.8	29.1	24.2	27.9
100	18.4	16.6	18.5	18.4	27.0	25.7	25.9	27.6
125	21.0	19.3	20.6	25.6	26.1	29.3	27.4	28.5
160	37.1	28.3	31.4	37.9	35.9	39.6	34.1	37.1
200	19.4	27.1	18.9	26.8	37.1	38.8	38.4	40.4
250	12.2	19.3	11.7	19.6	40.2	39.1	37.9	39.3
315	16.1	19.8	14.7	20.3	37.7	37.3	36.9	35.7
400	13.7	18.7	13.1	20.1	39.1	42.5	40.7	41.2
500	15.4	18.6	15.7	20.3	44.9	46.5	43.1	46.4
630	15.5	18.0	17.9	19.3	37.6	36.7	38.0	36.9
800	17.7	21.6	17.1	18.5	30.9	33.1	31.6	31.9
1000	15.1	19.0	15.7	14.1	29.0	29.3	28.0	28.8
1250	18.8	25.3	22.3	20.8	29.4	28.6	29.4	28.4
1600	27.7	23.2	28.0	23.9	26.3	27.3	26.7	25.7
2000	25.7	29.9	24.4	22.5	25.2	24.6	25.9	25.1
2500	11.7	17.0	14.2	13.2	24.8	25.7	26.2	25.4
3150	14.3	19.4	12.3	12.9	23.5	23.8	22.7	22.4
4000	8.8	11.1	8.7	9.5	17.6	17.0	16.8	16.5
5000	9.9	15.4	11.8	13.0	15.5	15.8	15.6	17.6
6300	8.3	9.0	7.6	8.3	12.0	11.3	12.3	11.7
8000	8.9	10.5	8.1	9.8	11.7	11.6	11.4	11.8
10000	8.2	10.5	7.9	11.1	10.3	9.8	9.8	9.8
12500	8.6	9.6	8.1	12.0	10.3	10.3	9.5	10.2
16000	13.4	18.8	13.4	16.9	19.5	21.5	18.9	18.5
20000	25.6	23.3	31.3	28.7	35.2	34.8	34.3	36.0

Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	Input power: 501.1w				Input power: 541.5w			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	38.1	37.8	37.8	40.2	49.2	50.4	48.5	57.1
A-weighted dB(A)	32.0	34.1	32.5	31.5	44.5	45.8	44.0	45.5
Average sound pressure level dB(A)	32.5				44.9			

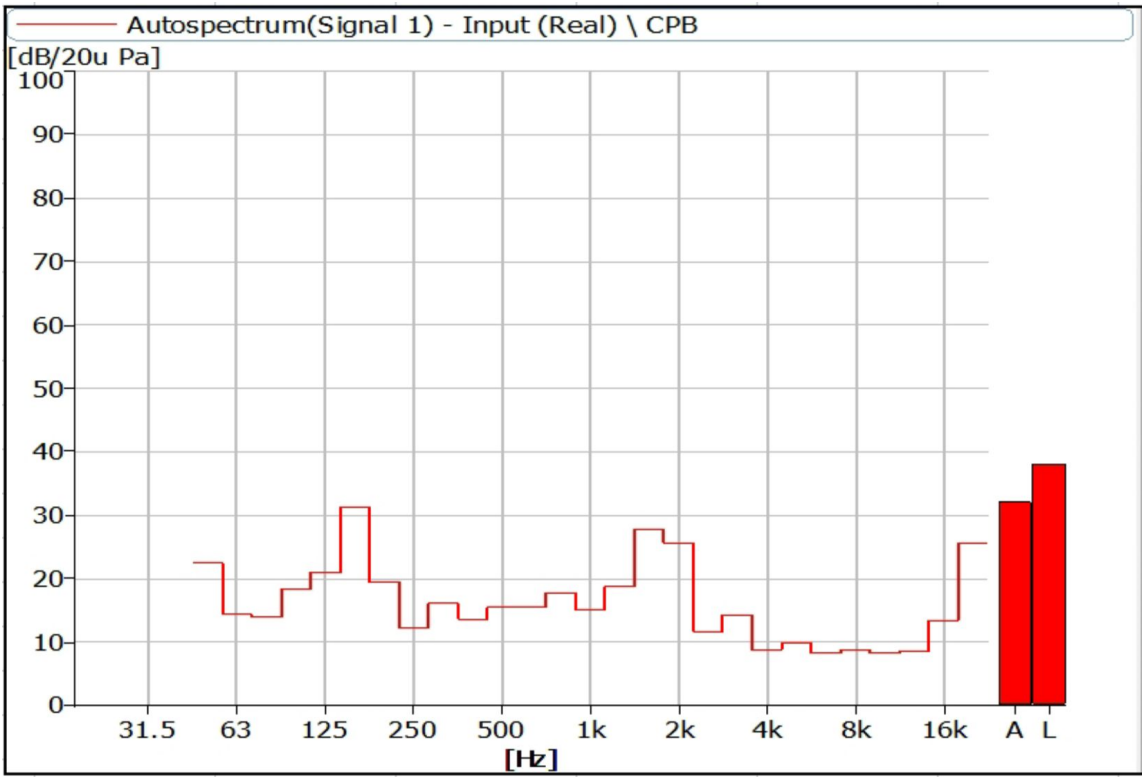

Figure 27 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 1)

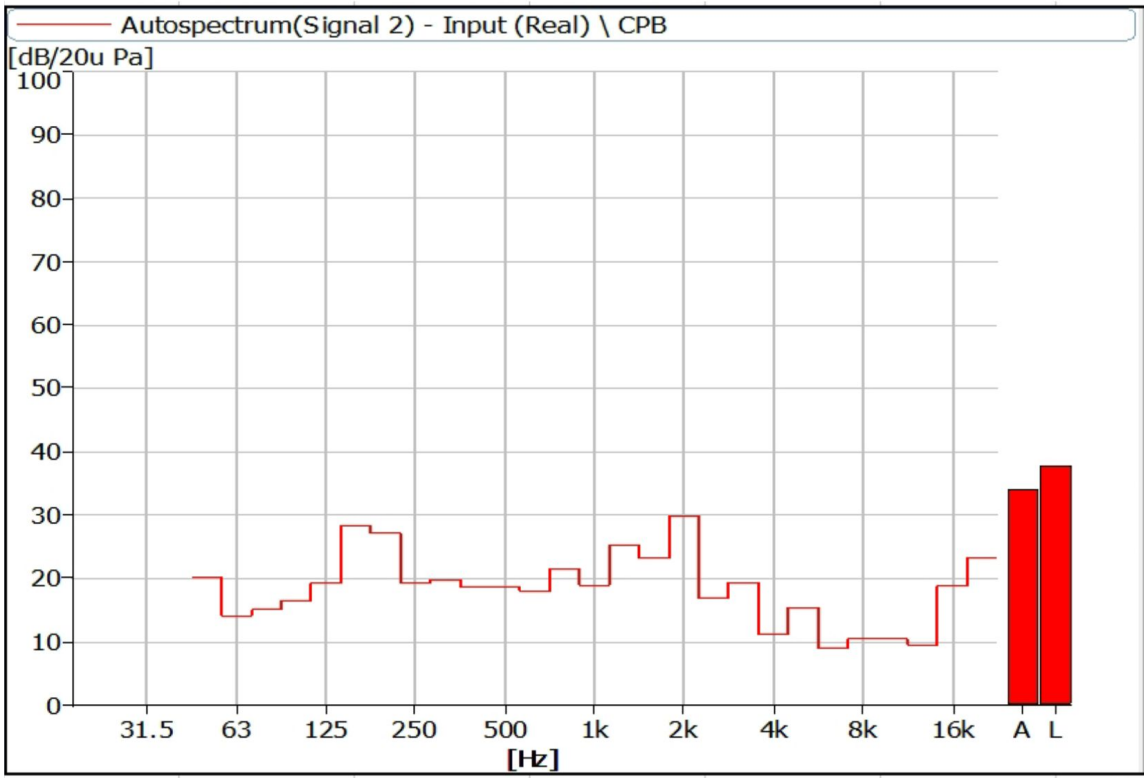

Figure 28 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 2)

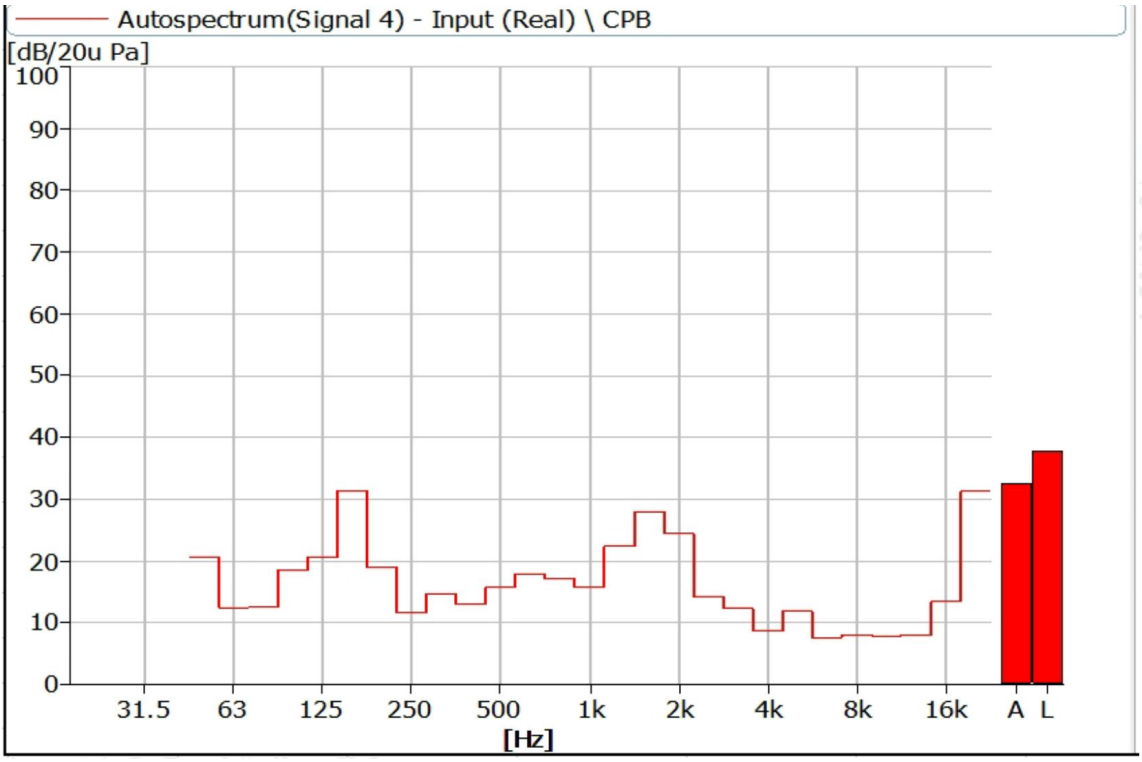

Figure 29 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 3)

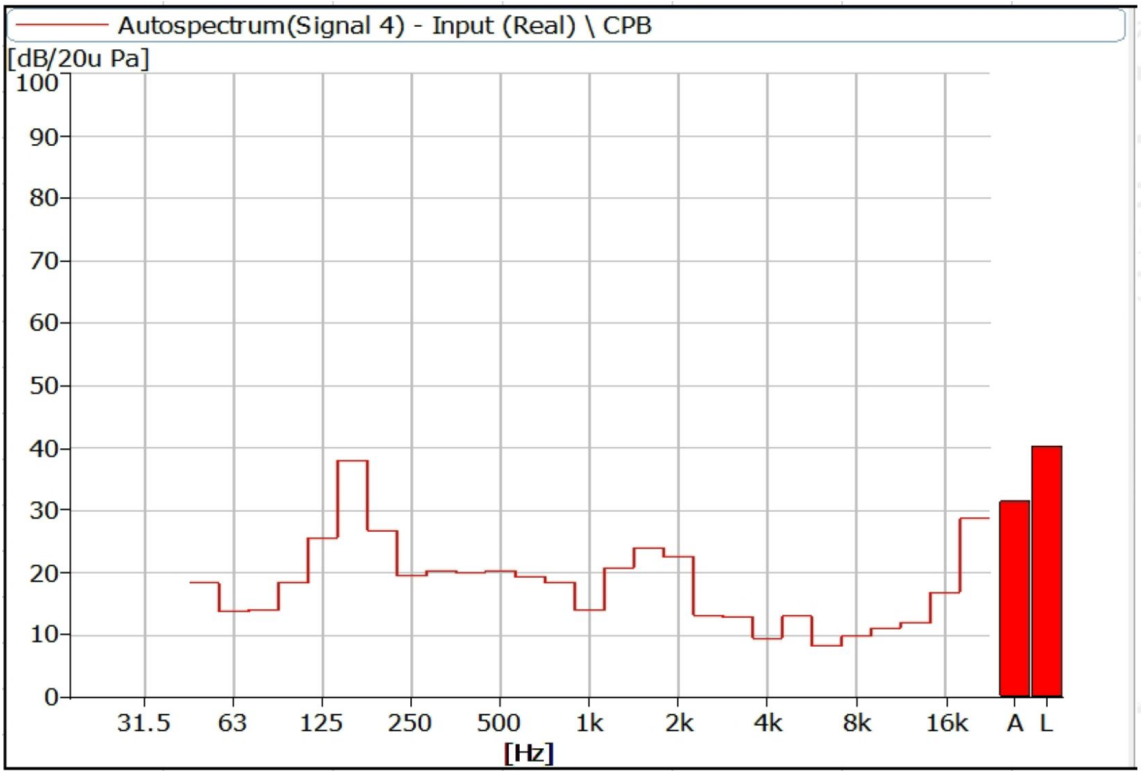

Figure 30 Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 4)

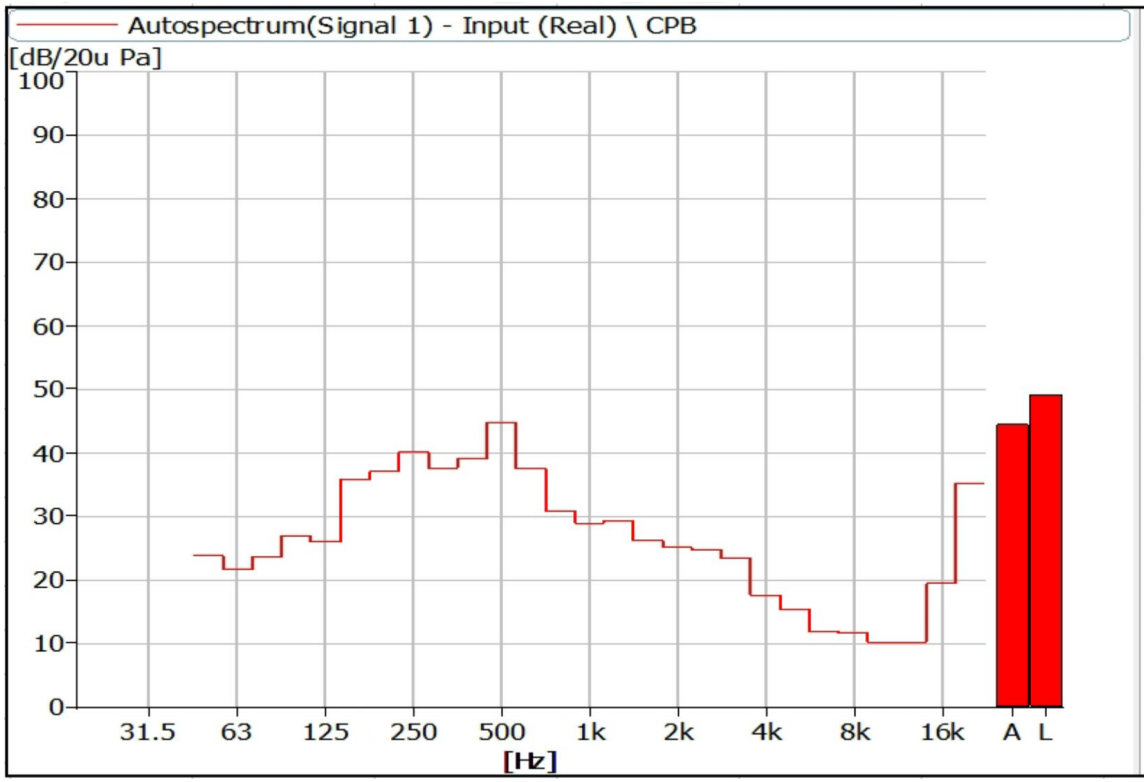

Figure 31 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 1)

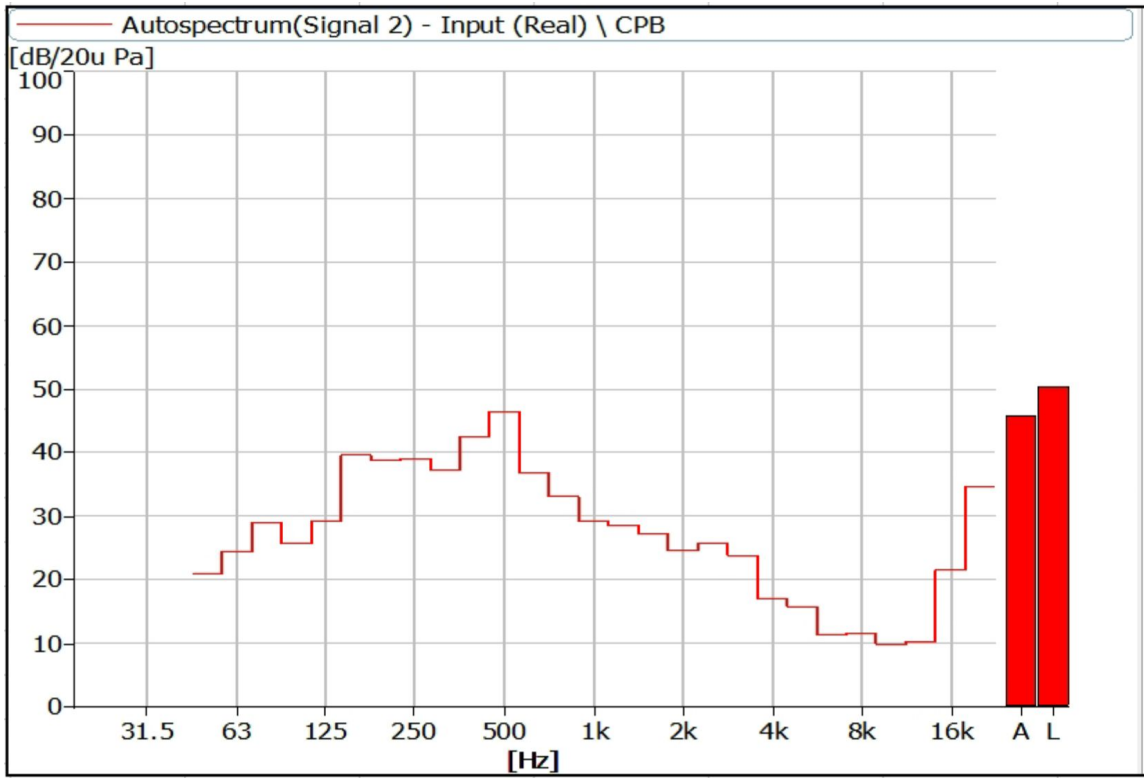

Figure 32 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 2)

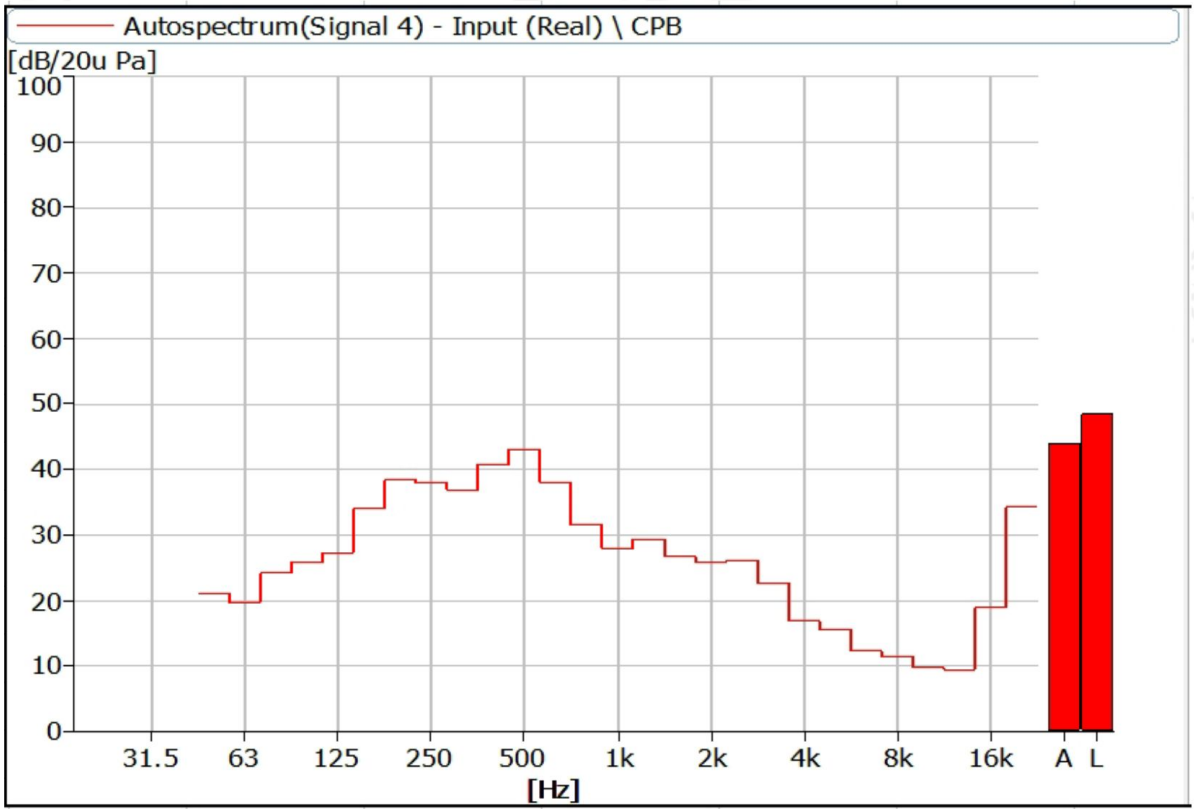

Figure 33 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 3)

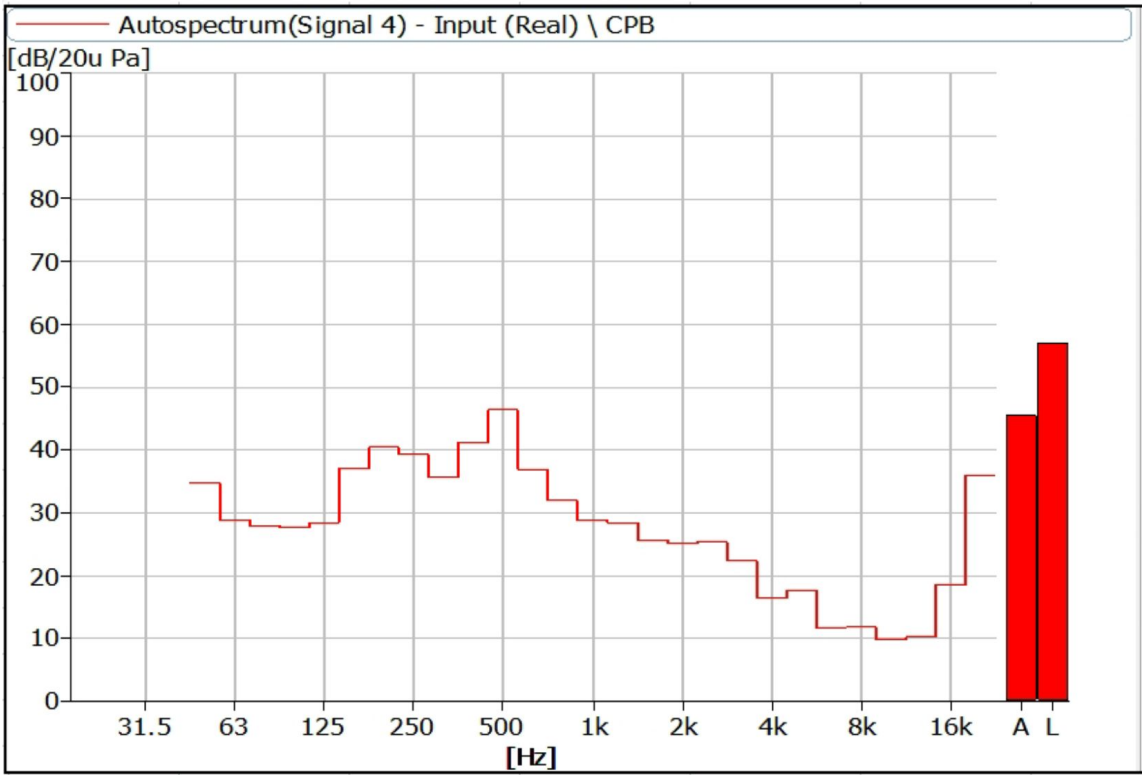

Figure 34 Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 4)

Instrumentation

No	Equipment	Type	Number	Calibration Period
1	Anechoicrooms	-	R40010	2026-07-12
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	2025-05-11
5	Steel Tap	5m	ad040	2025-02-02

AYRTON

Digital Lighting