



# KYALAMI

NOISE MEASUREMENTS

**AYRTON**

## 1 Test instructions

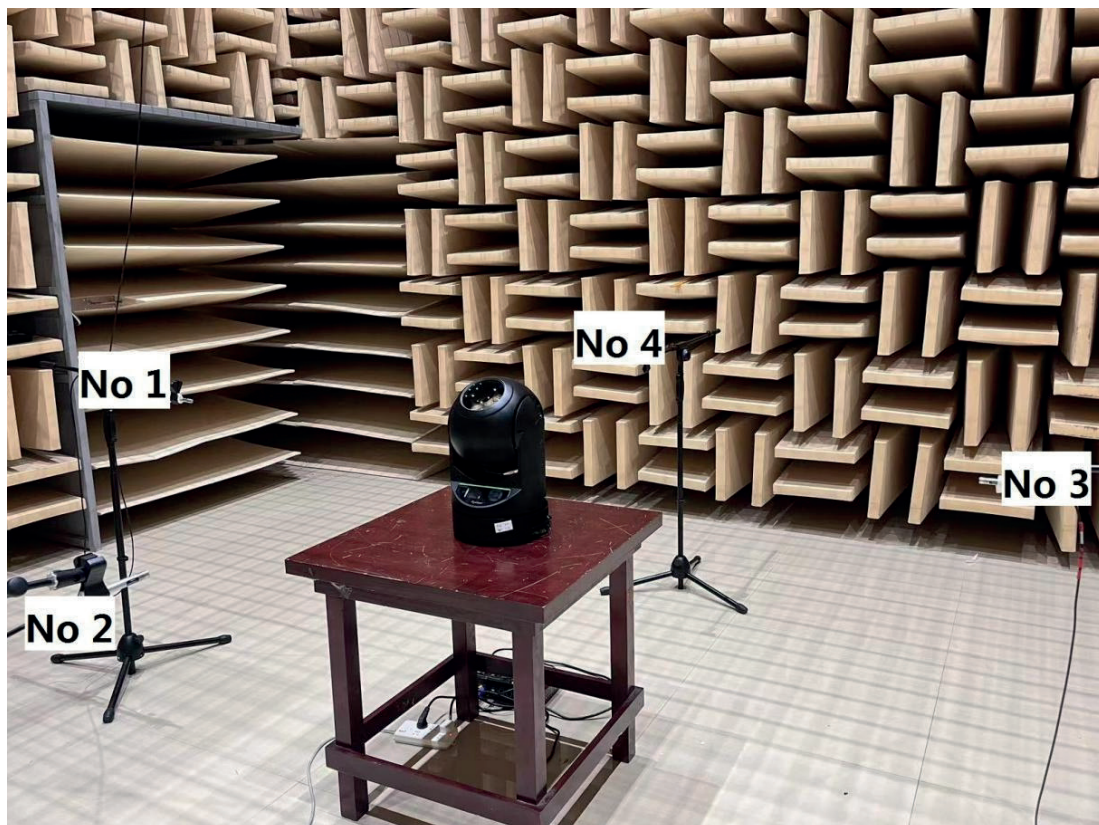
This test was conducted in the semi-anechoic room of Guangzhou Quality Supervision and Testing Institute, with indoor ambient noise less than 10dB (A).

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

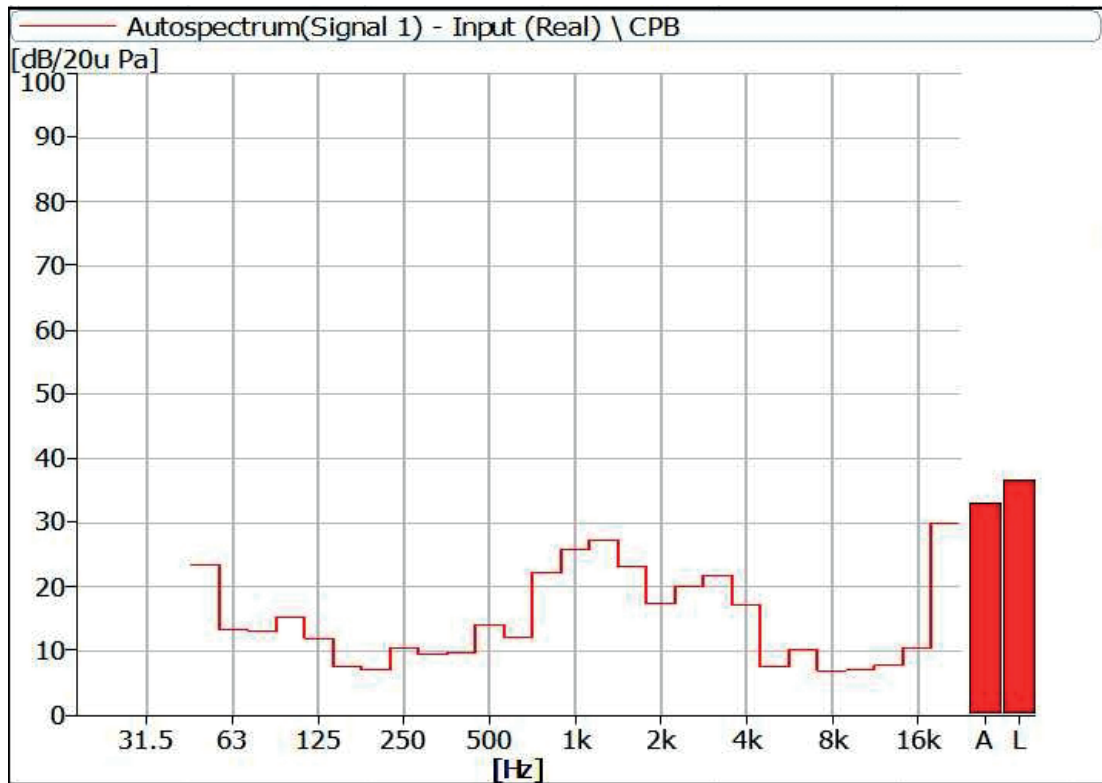


**Figure 2** Sample serial number information

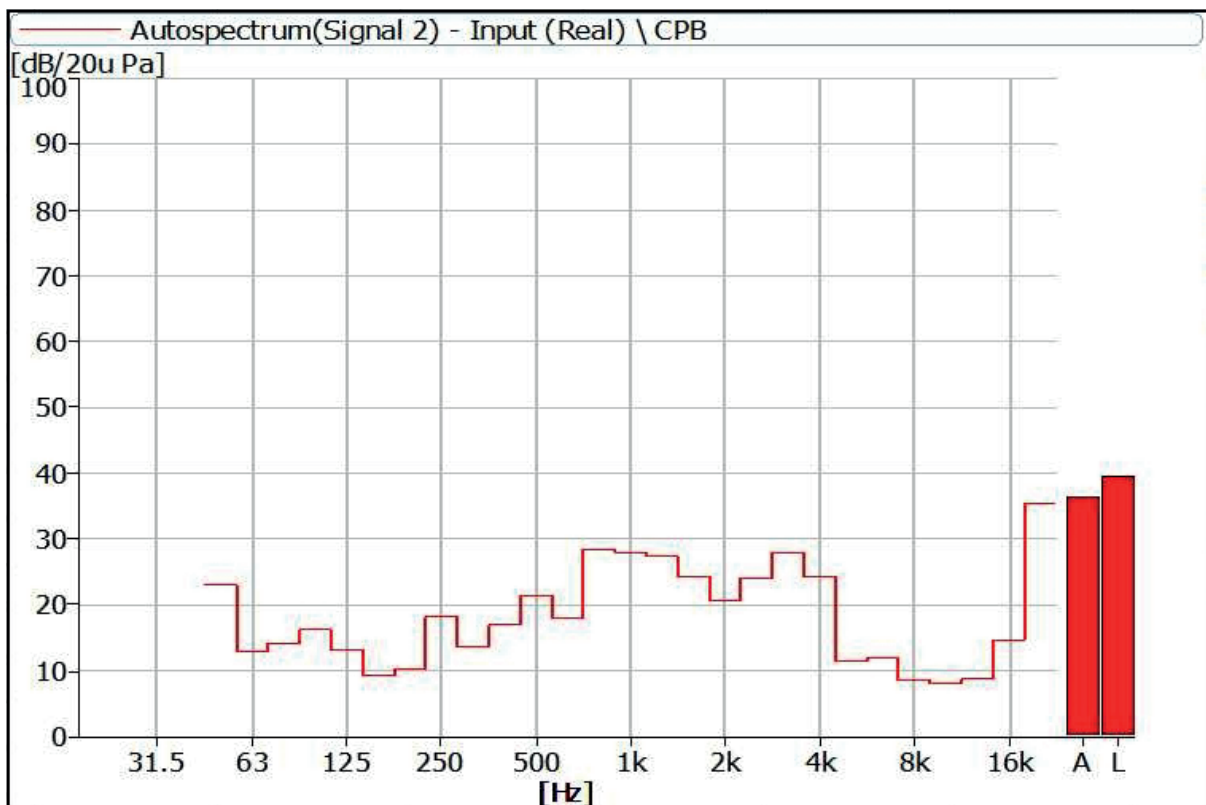
## 2 Noise Detection Results of Stage Luminaires (The Auto mode)

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	23.4	23.1	24.5	22.1	24.1	23.7	25.1	22.8
63	13.4	13.0	12.3	13.5	13.4	13.8	12.6	13.4
80	13.1	14.2	13.5	14.3	18.6	23.3	22.0	21.1
100	15.4	16.2	18.0	14.8	23.5	24.7	23.9	23.8
125	11.9	13.3	11.2	14.1	19.8	23.1	21.0	20.8
160	7.5	9.2	9.2	8.8	21.1	22.5	22.3	21.6
200	7.1	10.2	7.5	9.0	21.5	22.9	23.5	22.6
250	10.5	18.2	10.9	19.4	29.8	30.9	31.1	30.6
315	9.5	13.7	11.1	15.9	37.5	37.2	37.0	37.0
400	9.8	17.0	18.7	13.1	30.7	29.2	32.2	30.5
500	14.1	21.5	23.4	16.9	30.7	32.8	32.2	31.6
630	12.1	18.1	18.5	17.6	31.1	33.2	32.4	30.5
800	22.2	28.5	31.4	28.1	32.4	33.8	32.4	31.9
1000	25.8	28.1	27.7	21.4	32.5	32.7	33.2	33.1
1250	27.3	27.4	40.6	37.6	35.8	34.0	33.8	35.0
1600	23.2	24.4	34.2	30.0	35.4	34.2	36.3	33.9
2000	17.5	20.7	27.9	21.8	31.3	32.5	33.5	30.4
2500	20.1	24.2	26.2	27.5	25.9	27.1	25.8	26.1
3150	21.8	28.0	26.8	27.3	28.2	28.5	27.7	27.5
4000	17.3	24.3	25.4	20.6	24.7	24.8	23.2	24.2
5000	7.5	11.4	12.2	9.5	12.0	13.9	12.2	12.3
6300	10.1	12.0	14.1	11.6	9.9	11.6	12.1	11.5
8000	6.9	8.5	8.5	7.9	8.0	9.7	8.8	9.3
10000	7.0	8.1	8.6	7.7	7.2	8.9	8.3	8.3
12500	7.8	8.7	9.4	7.9	7.6	9.1	8.2	8.2
16000	10.4	14.7	10.8	10.3	14.8	15.7	14.7	14.3
20000	29.9	35.4	28.8	29.2	34.0	35.1	34.0	32.7

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	36.7	39.6	43.1	41.0	44.5	44.8	44.9	44.2
A-weighted dB(A)	33.0	36.5	43.1	40.2	42.8	42.7	43.0	42.1
Average sound pressure level dB(A)	38.2				42.6			



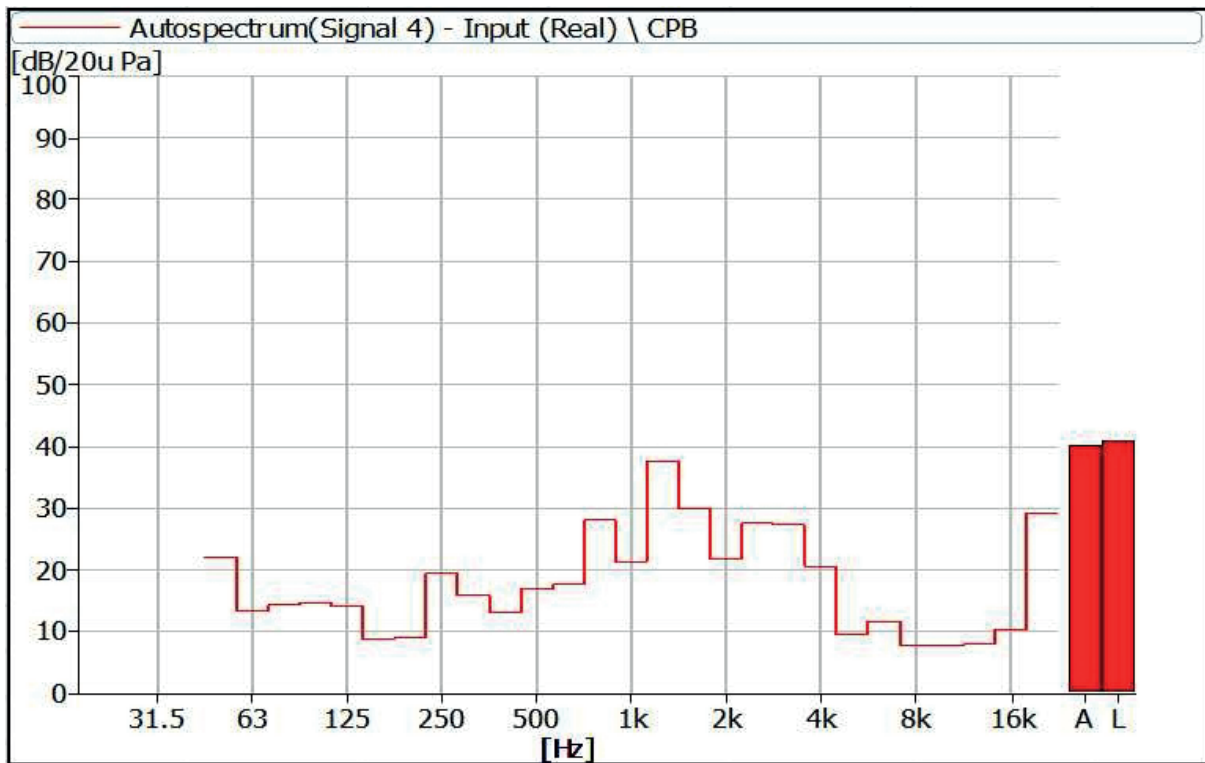
**Figure 3** Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 1)



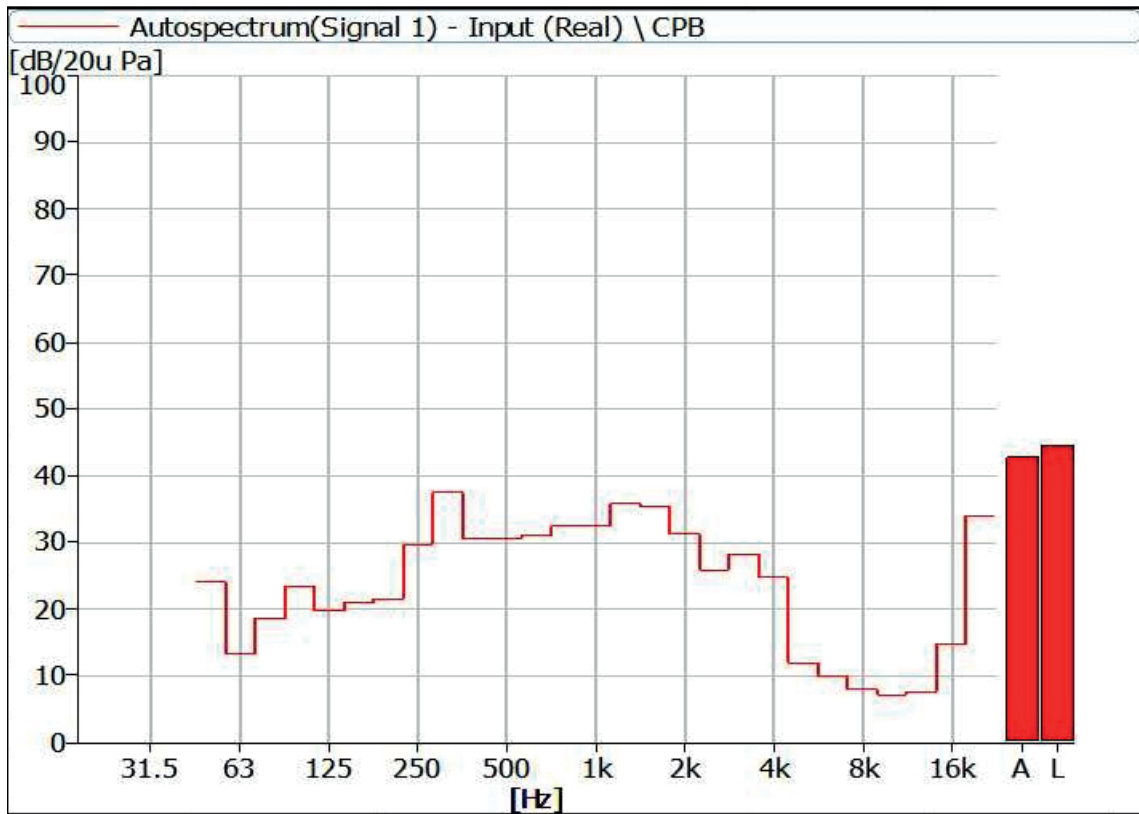
**Figure 4** Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 2)



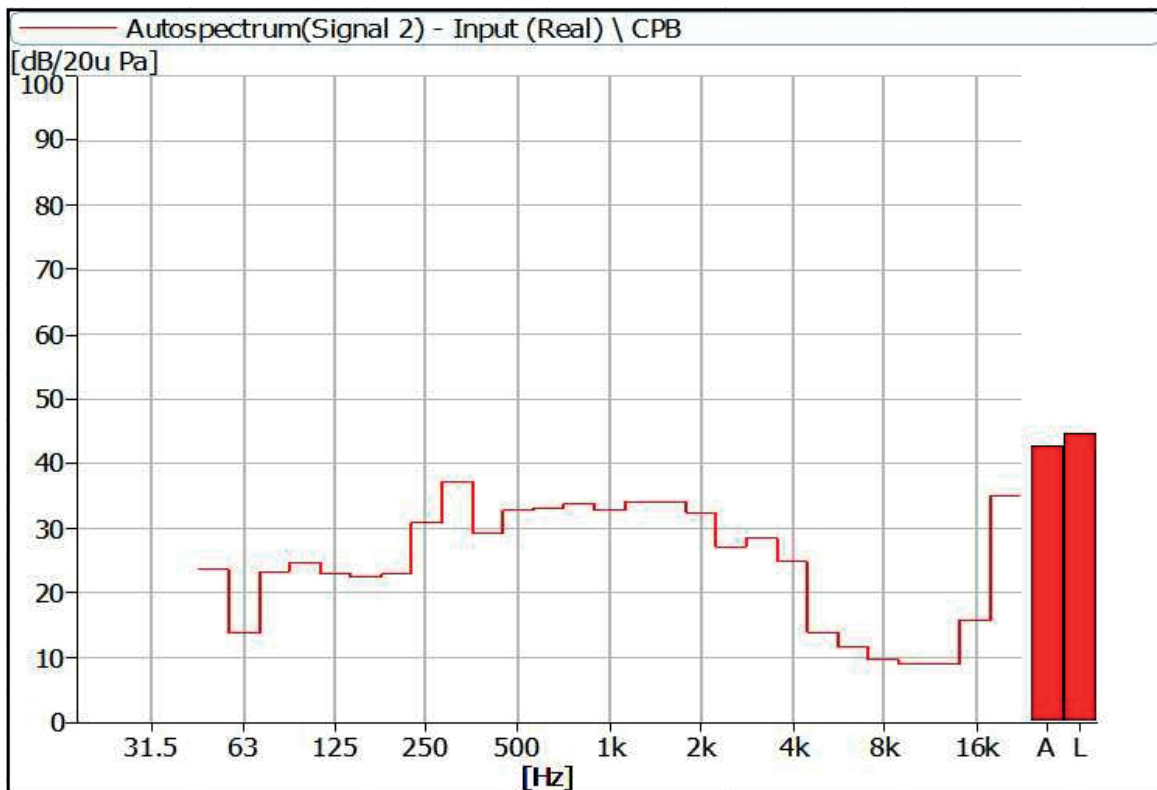
**Figure 5** Noise Spectrum of Stage Luminaires (The Auto mode, Static, No 3)



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



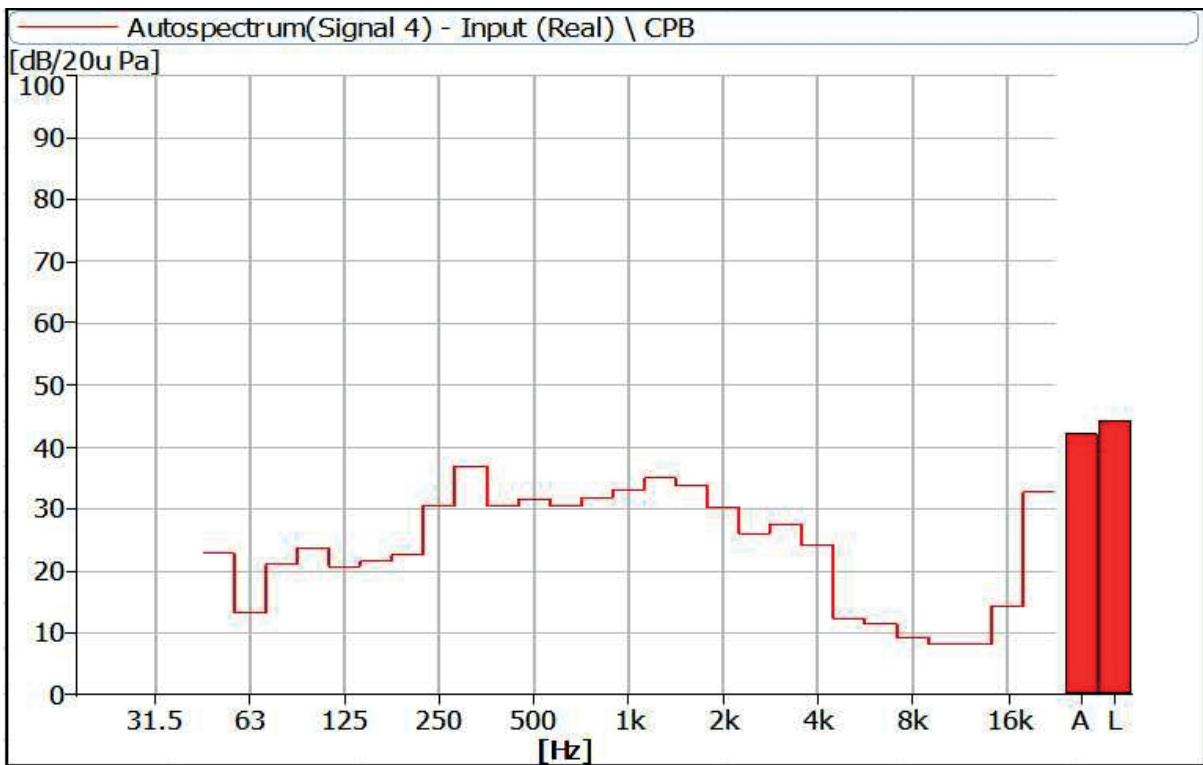
**Figure 7** Noise Spectrum of Stage Luminaires (The Auto mode, Dynamic, No 1)



**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	23.2	23.8	25.1	22.9	23.5	23.4	25.1	22.6
63	13.1	13.8	12.6	14.7	15.0	15.0	14.4	15.5
80	12.2	12.7	13.6	16.2	18.8	23.1	23.0	21.1
100	15.3	16.3	19.0	14.9	22.8	23.7	25.4	23.3
125	11.9	13.9	11.6	14.6	19.9	22.7	21.9	20.1
160	8.0	10.6	9.4	10.7	20.3	21.7	22.5	20.5
200	9.1	13.7	9.5	12.9	21.2	22.5	23.9	22.4
250	11.8	17.0	12.2	17.1	29.3	30.0	29.8	30.1
315	13.6	19.3	14.7	19.2	36.9	35.9	35.7	35.8
400	19.1	27.5	21.3	27.1	31.6	31.2	32.9	32.0
500	18.9	25.4	21.7	22.8	30.6	33.1	32.9	31.6
630	19.6	22.1	21.8	20.8	30.1	32.0	30.9	29.9
800	25.4	26.7	26.5	24.9	30.9	32.8	31.7	31.0
1000	25.7	28.0	25.5	23.2	29.7	31.0	31.7	31.4
1250	29.6	28.2	34.9	31.7	33.3	31.7	32.8	32.0
1600	31.9	31.6	39.0	34.6	38.0	35.9	37.4	36.0
2000	27.7	28.2	35.7	29.6	33.3	33.9	34.4	32.9
2500	27.9	29.9	30.1	32.3	30.7	32.3	30.6	30.9
3150	28.3	31.4	32.8	30.0	32.7	33.2	32.4	32.4
4000	25.4	33.3	33.4	30.3	32.8	32.2	31.3	32.3
5000	17.0	20.3	22.4	17.3	19.2	20.6	18.5	19.0
6300	14.7	16.1	22.7	16.9	16.7	16.7	17.0	18.3
8000	9.9	10.6	13.5	10.2	10.1	11.9	11.3	10.8
10000	8.6	9.0	12.2	8.5	8.5	9.7	9.1	9.3
12500	8.5	8.8	12.3	8.2	8.3	9.4	8.7	8.9
16000	13.1	8.8	12.8	9.3	14.1	15.4	14.7	13.8
20000	33.3	21.1	31.1	26.2	32.8	34.5	33.9	32.1

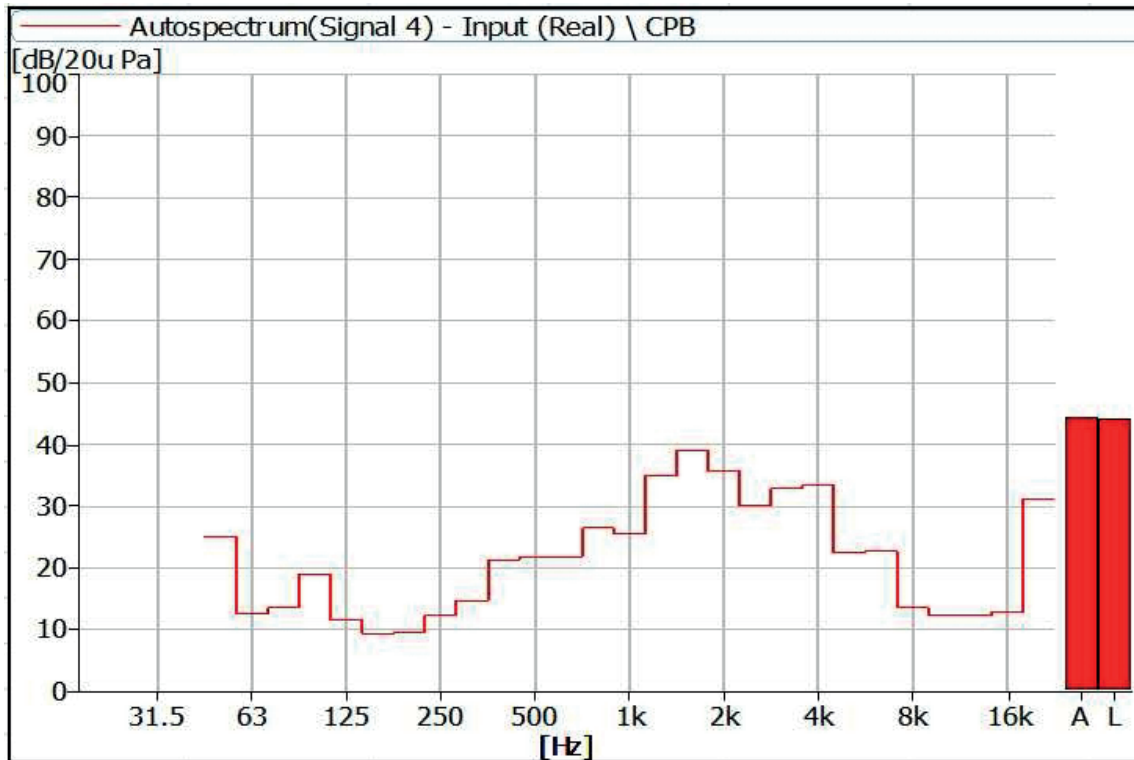
Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	40.1	40.8	44.1	41.7	45.1	45.1	45.2	44.7
A-weighted dB(A)	38.6	40.4	44.4	41.1	44.0	43.7	43.9	43.2
Average sound pressure level dB(A)	41.1				43.7			



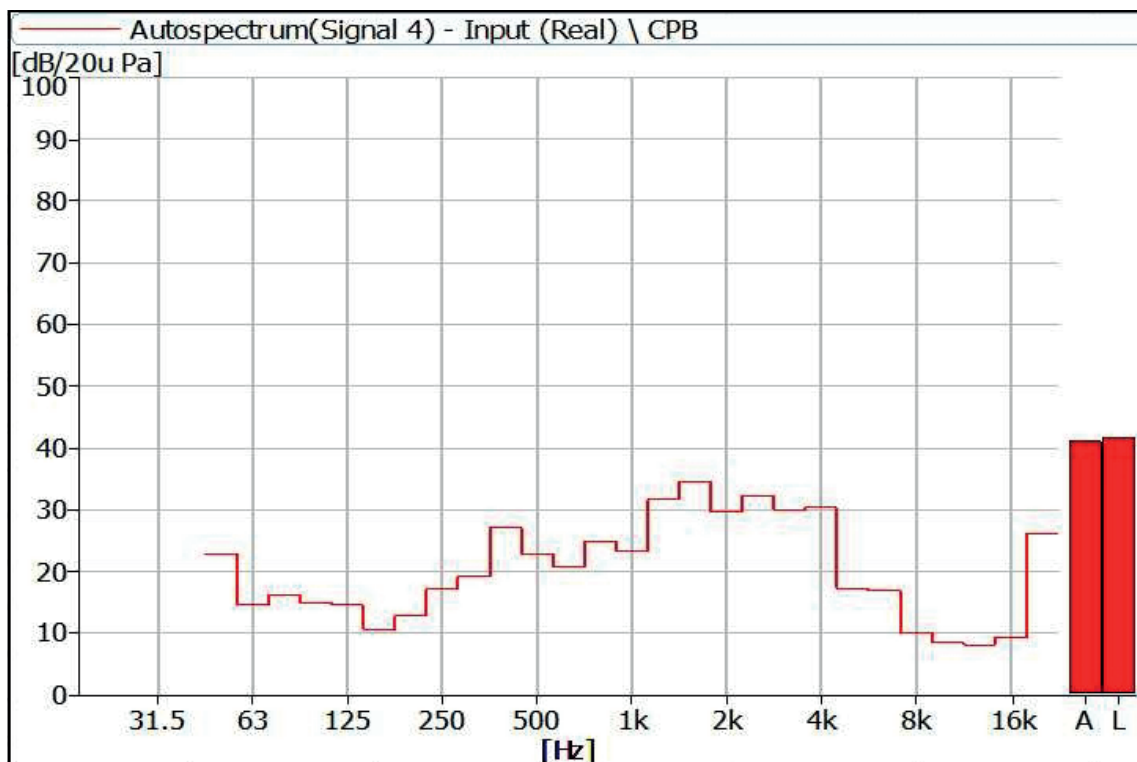
**Figure 11** Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 1)



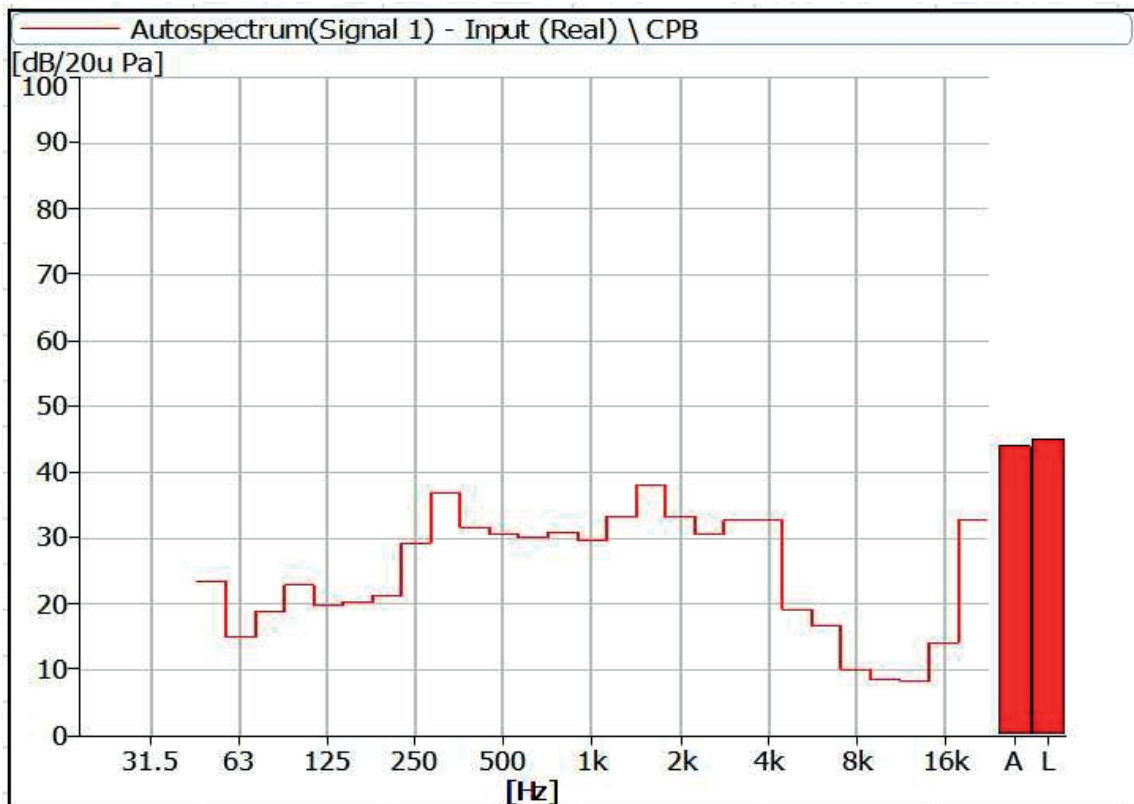
**Figure 12** Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 2)



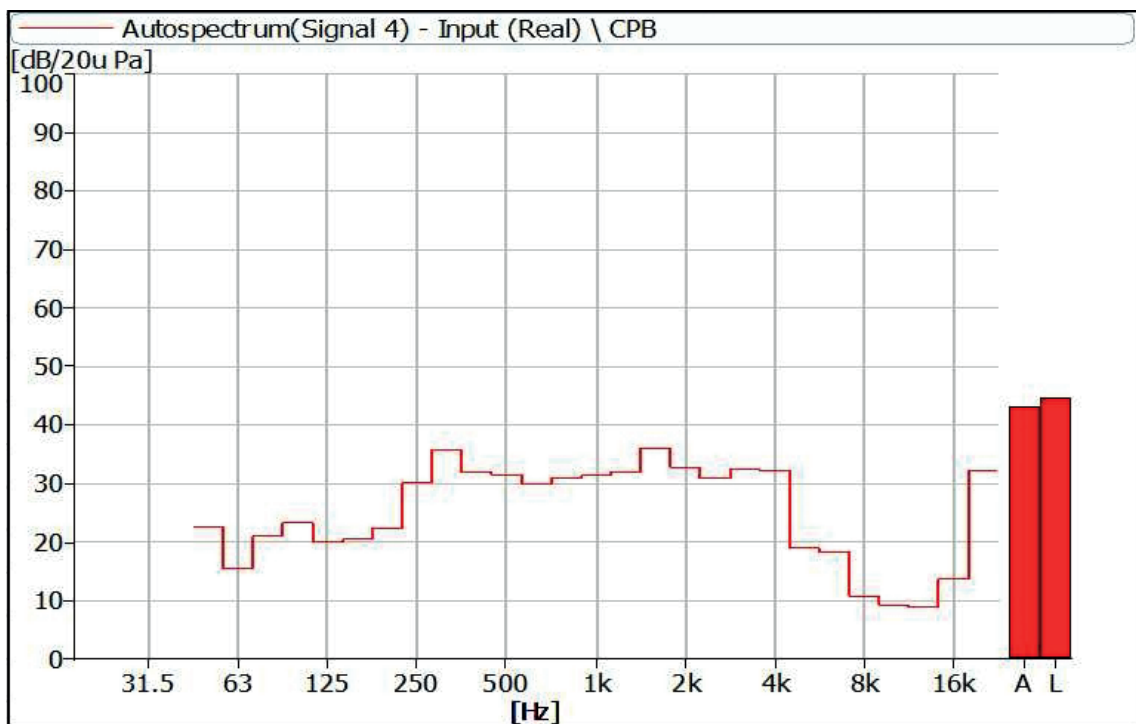
**Figure 13** Noise Spectrum of Stage Luminaires (The Stage mode, Static, No 3)



**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)

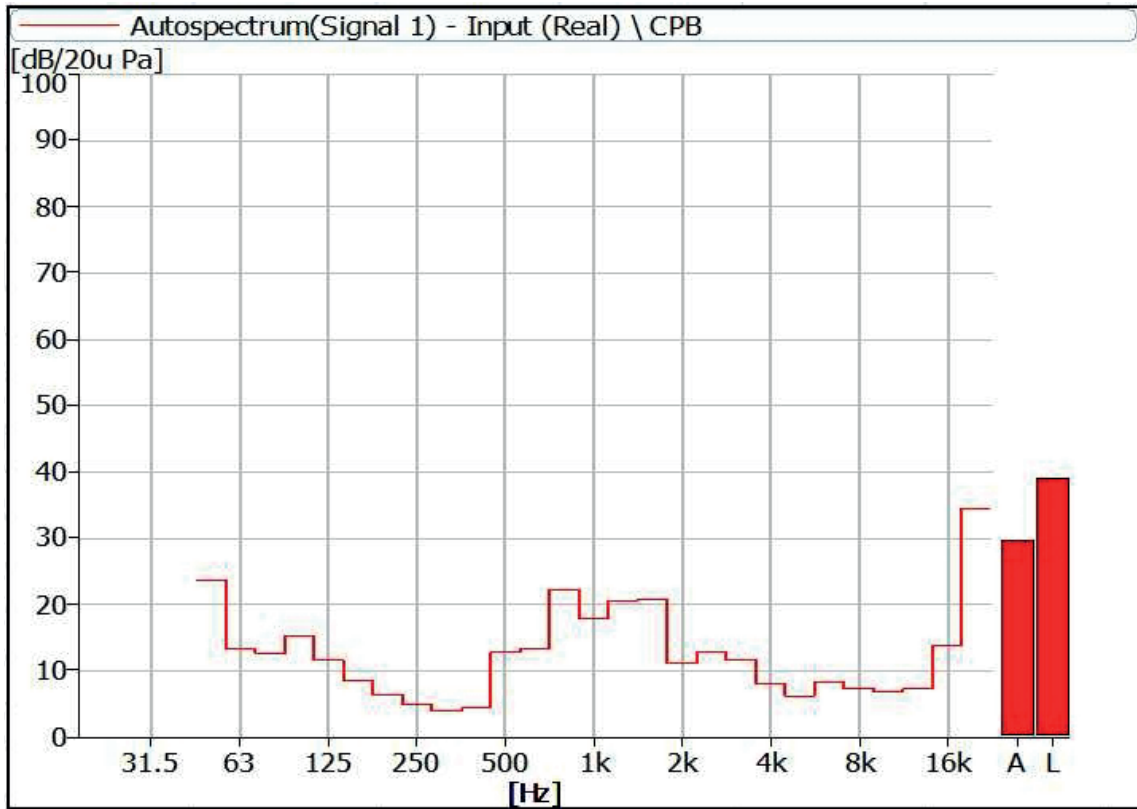


**Figure 18** Noise Spectrum of Stage Luminaires (The Stage mode, Dynamic, No 4)

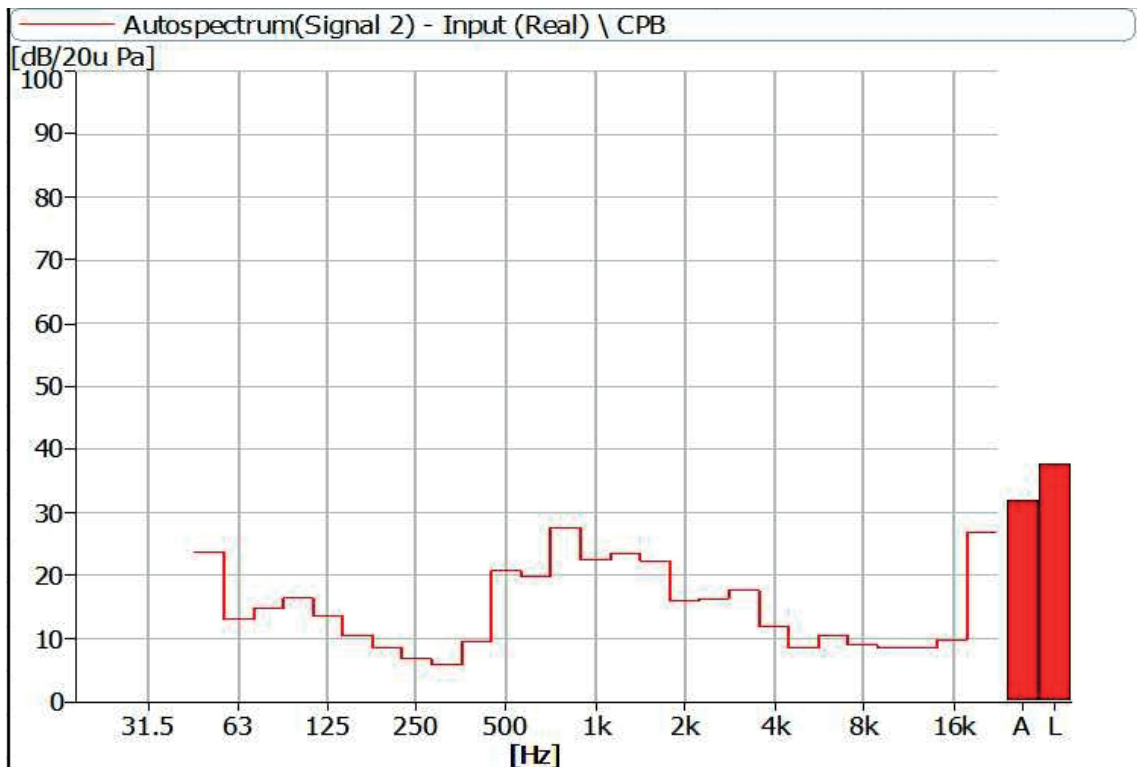
#### 4 Noise Detection Results of Stage Luminaires (The Silence mode)

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	23.7	23.8	24.4	22.4	23.9	23.9	24.8	22.9
63	13.4	13.1	12.6	14.2	13.9	14.2	13.7	14.2
80	12.7	14.7	13.2	15.2	20.4	25.0	22.5	22.3
100	15.2	16.4	18.1	15.6	24.3	25.8	25.1	24.9
125	11.6	13.6	11.2	14.6	19.8	22.6	20.2	20.6
160	8.5	10.5	10.1	9.6	20.1	21.5	21.8	20.2
200	6.4	8.5	6.3	7.9	21.2	21.6	23.3	21.6
250	4.9	6.8	5.6	6.3	28.5	28.6	29.3	29.1
315	3.9	5.9	5.4	6.0	36.4	35.4	34.8	35.4
400	4.3	9.5	7.1	7.1	30.5	28.7	31.4	30.1
500	12.8	20.7	16.9	18.1	30.2	32.6	32.8	31.0
630	13.3	19.8	20.5	21.6	32.5	32.7	30.1	31.5
800	22.2	27.6	31.5	31.3	33.8	33.9	31.0	32.9
1000	17.9	22.5	21.1	24.7	30.1	30.3	30.9	32.6
1250	20.6	23.4	32.2	27.8	31.5	29.3	30.4	30.6
1600	20.7	22.4	29.3	26.4	34.6	33.3	35.5	32.4
2000	11.1	15.9	22.5	15.4	31.2	31.3	32.8	28.9
2500	13.0	16.3	16.5	18.9	20.7	21.8	21.2	22.0
3150	11.6	17.6	15.6	15.8	20.1	20.7	19.2	17.9
4000	8.1	11.9	11.9	10.8	15.8	16.4	16.1	16.2
5000	6.2	8.4	7.4	7.8	11.2	13.2	10.5	11.6
6300	8.3	10.4	11.2	9.7	8.6	10.0	9.2	9.7
8000	7.3	9.0	8.2	8.7	8.6	9.9	8.3	9.9
10000	6.8	8.5	8.2	8.0	7.2	8.9	8.0	8.7
12500	7.2	8.5	8.2	7.7	7.0	8.7	7.7	7.7
16000	13.8	9.8	13.4	10.7	13.7	14.8	14.0	13.5
20000	34.5	26.8	33.8	29.5	32.4	33.9	33.4	32.1

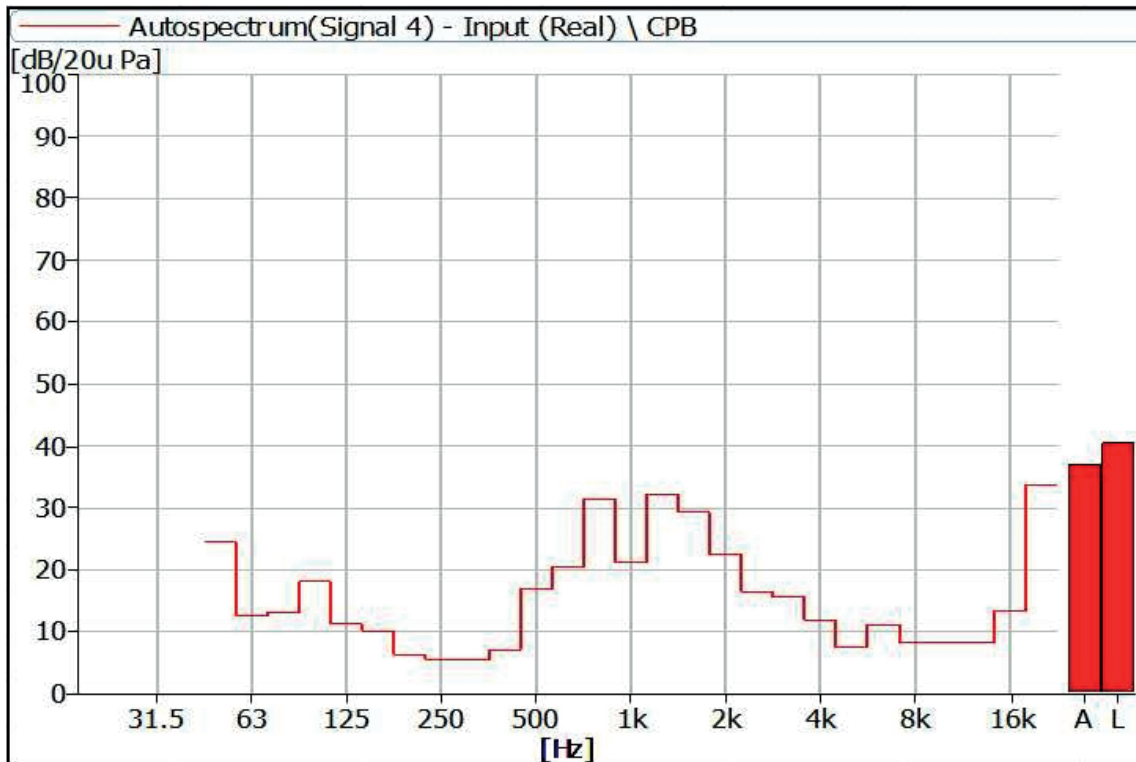
Frequency (Hz)	Sound Pressure Level in Auto Mode (dB)							
	Static				Dynamic			
	No 1	No 2	No 3	No 4	No 1	No 2	No 3	No 4
Leq	38.9	37.7	40.5	38.8	43.6	43.5	43.7	43.2
A-weighted dB(A)	29.7	31.8	37.1	34.9	41.3	40.9	41.4	40.5
Average sound pressure level dB(A)	33.45				41.0			



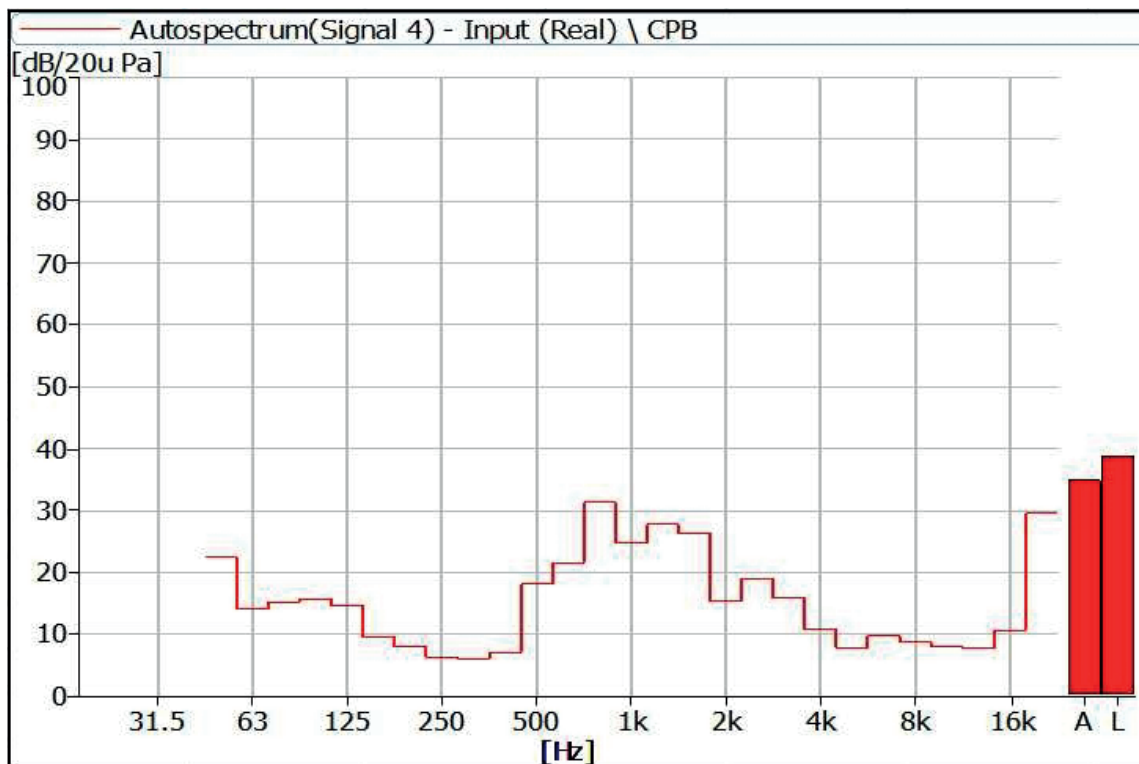
**Figure 19** Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 1)



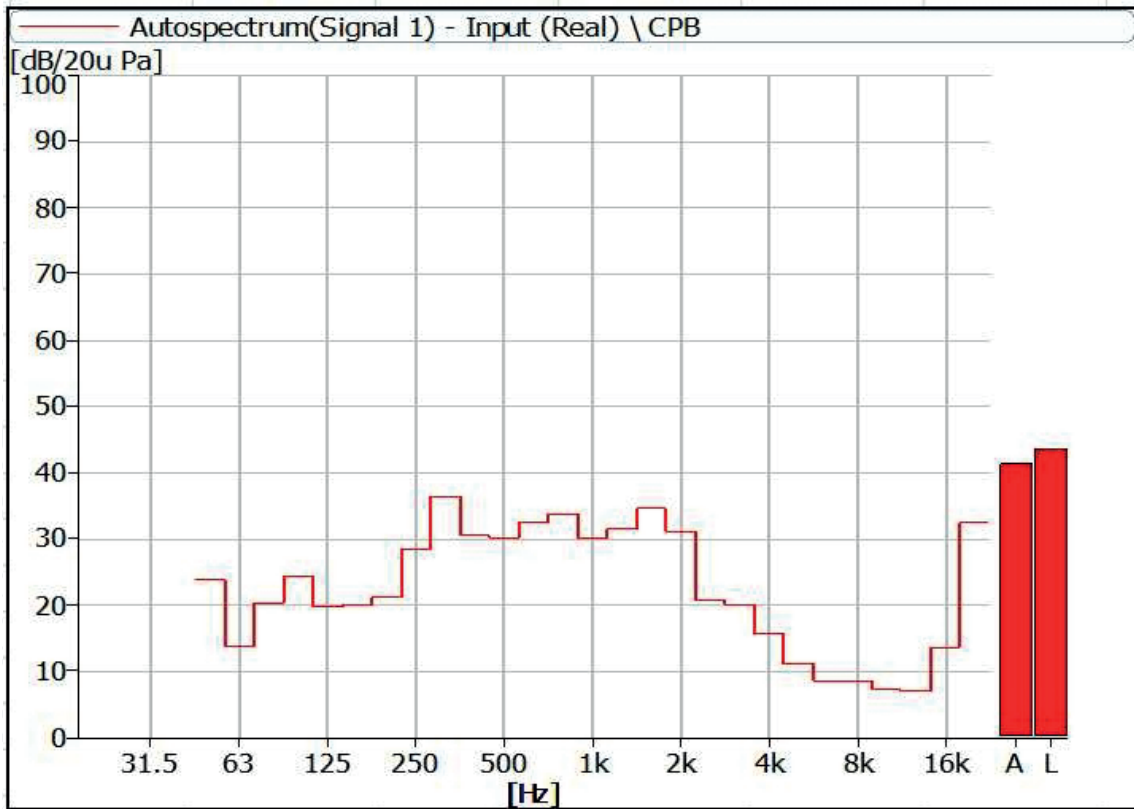
**Figure 20** Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 2)



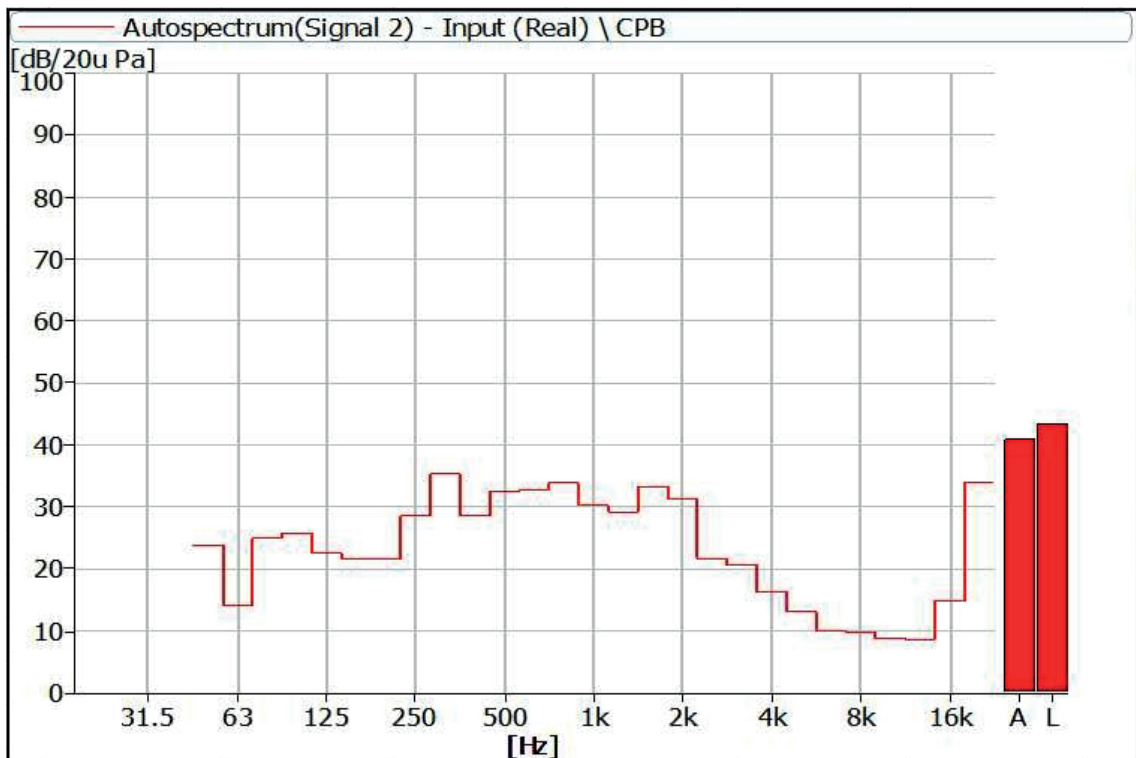
**Figure 21** Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 3)



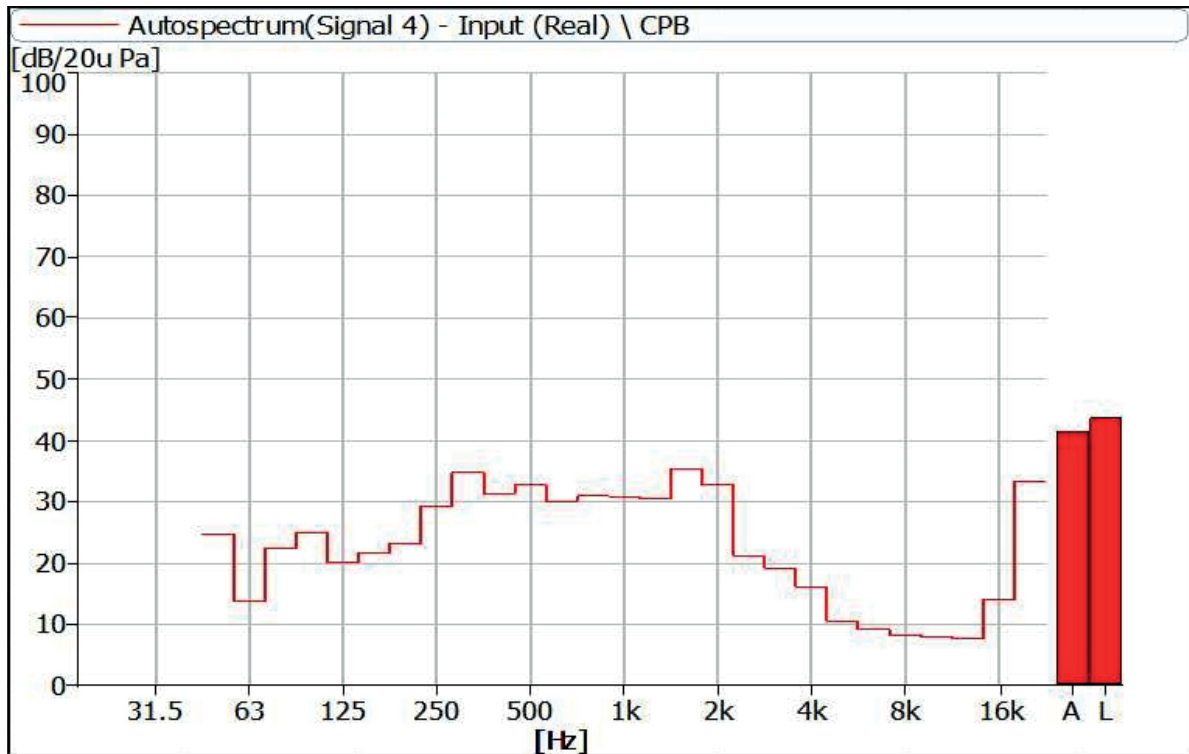
**Figure 22** Noise Spectrum of Stage Luminaires (The Silence mode, Static, No 4)



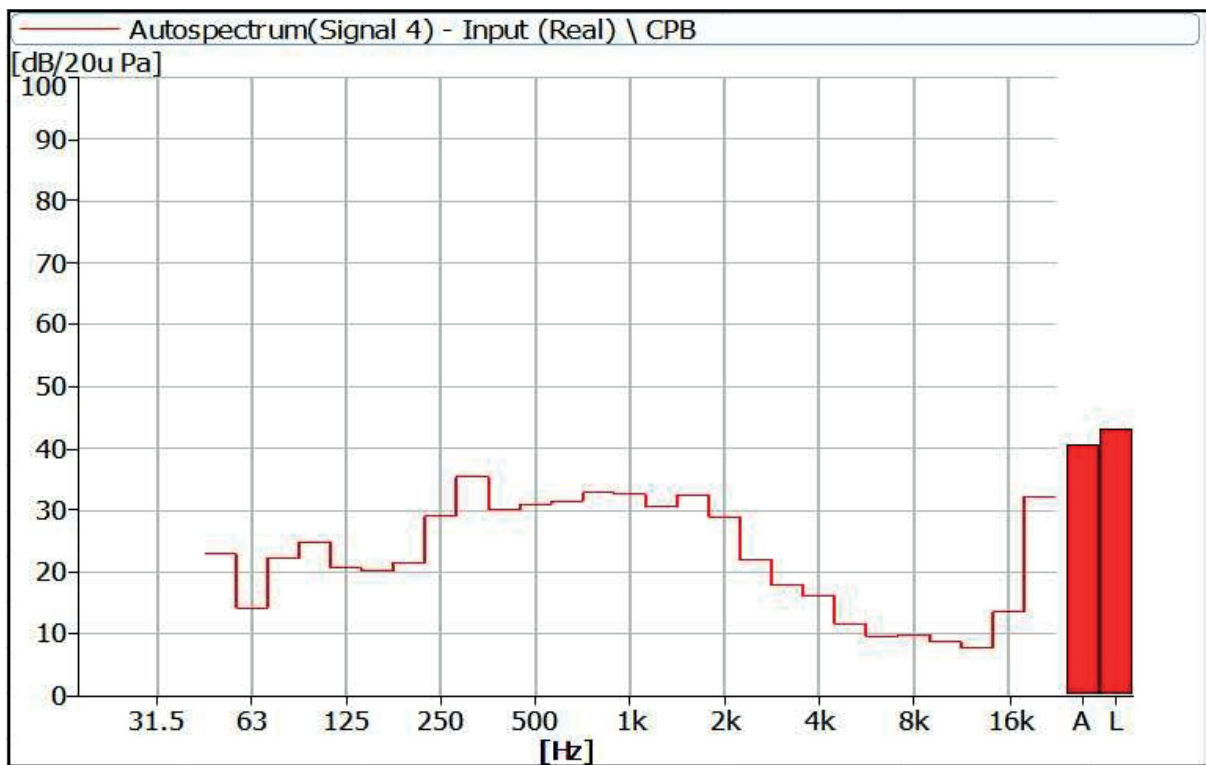
**Figure 23** Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 1)



**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)

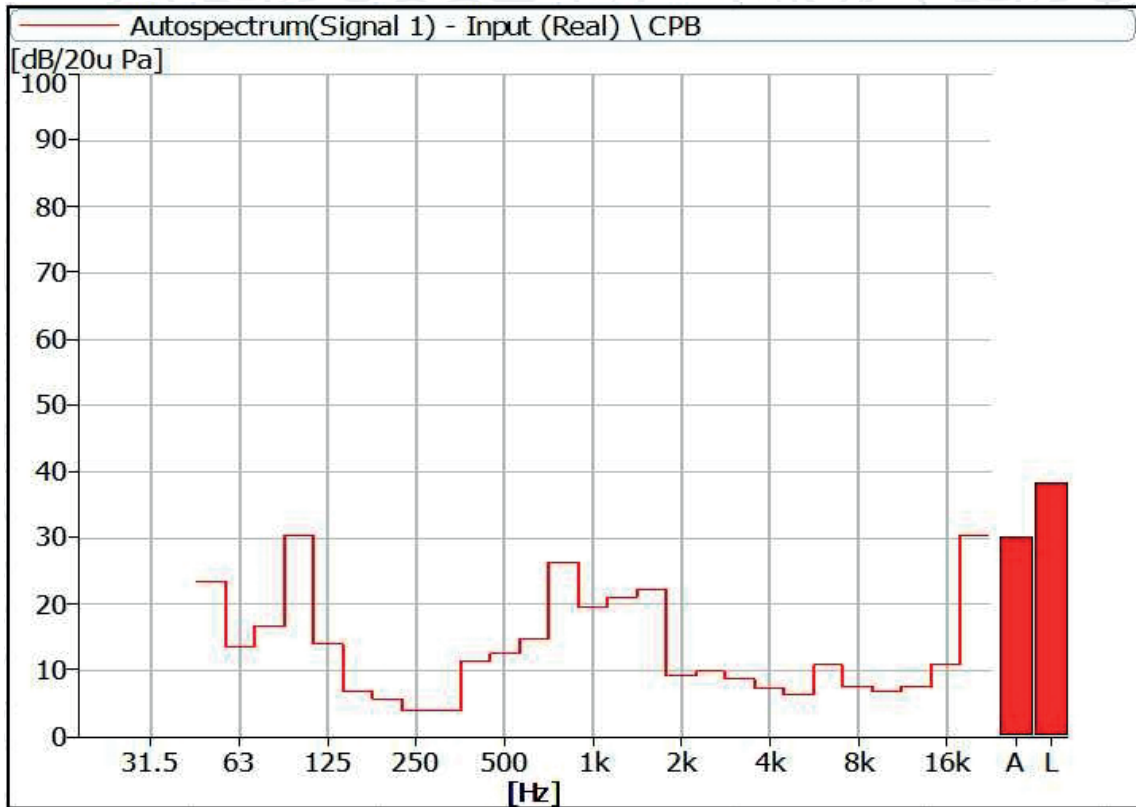


**Figure 26** Noise Spectrum of Stage Luminaires (The Silence mode, Dynamic, No 4)

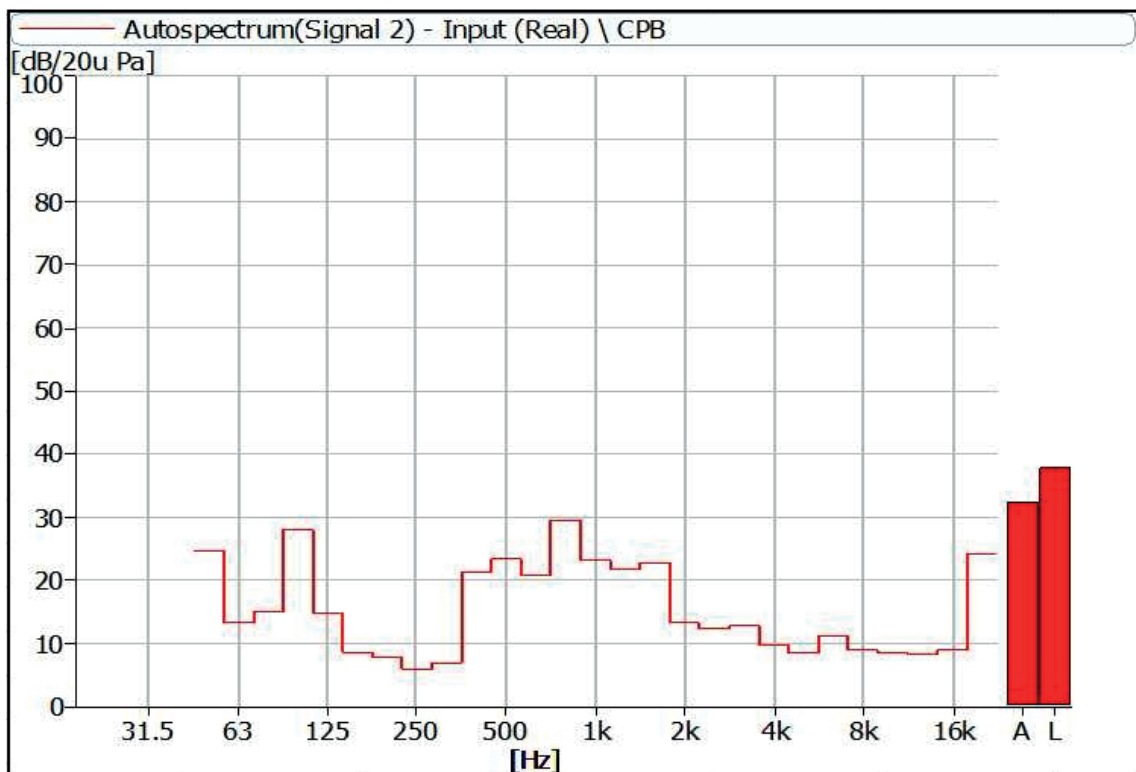
## 5 Noise Detection Results of Stage Luminaires (The Super Silence mode)

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	23.5	24.7	24.4	22.2	24.0	24.1	25.0	22.9
63	13.6	13.3	12.1	14.2	14.4	14.9	13.1	15.0
80	16.7	15.1	17.4	15.3	20.9	25.4	23.8	23.4
100	30.4	28.0	31.5	14.6	24.8	26.9	25.8	25.6
125	13.9	14.8	13.6	14.7	20.0	22.2	20.0	20.7
160	6.9	8.6	9.2	9.1	20.2	21.4	22.2	20.8
200	5.7	7.9	5.8	7.1	22.0	22.1	23.4	22.1
250	4.0	6.0	5.2	6.4	28.6	28.2	28.3	29.1
315	4.0	6.9	5.3	10.0	36.0	34.7	33.6	35.4
400	11.3	21.3	19.9	11.8	30.3	28.7	31.7	30.4
500	12.6	23.4	23.9	26.0	30.2	32.8	33.4	31.6
630	14.8	20.8	19.2	16.2	29.3	31.7	30.6	29.9
800	26.4	29.5	29.6	27.8	31.4	32.7	31.6	30.9
1000	19.5	23.2	23.9	19.3	29.0	29.7	30.9	31.8
1250	21.1	21.7	31.0	26.6	30.3	27.6	29.2	29.2
1600	22.3	22.9	30.2	26.0	34.1	33.1	34.9	31.7
2000	9.2	13.3	19.8	12.1	31.5	32.3	33.2	28.2
2500	9.9	12.4	13.3	12.7	18.2	19.8	19.5	19.7
3150	8.7	12.8	11.6	10.9	16.7	17.4	16.1	15.9
4000	7.3	9.7	9.1	8.7	13.8	15.0	14.8	13.7
5000	6.3	8.5	7.4	7.4	10.2	12.5	10.4	10.4
6300	10.8	11.2	12.3	9.5	9.3	10.2	9.6	9.8
8000	7.6	9.0	9.1	9.7	8.0	9.6	8.7	10.8
10000	6.9	8.6	8.1	8.3	7.3	9.0	8.1	9.2
12500	7.6	8.4	7.9	8.0	7.2	8.8	7.9	8.3
16000	10.8	8.9	8.2	9.7	13.8	14.7	13.8	14.2
20000	30.5	24.2	21.5	27.7	32.1	33.0	33.1	32.7

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	38.4	37.8	39.4	39.2	43.3	43.3	43.6	43.4
A-weighted dB(A)	30.2	32.4	36.3	33.0	40.4	40.5	41.2	39.6
Average sound pressure level dB(A)	33.0				40.4			



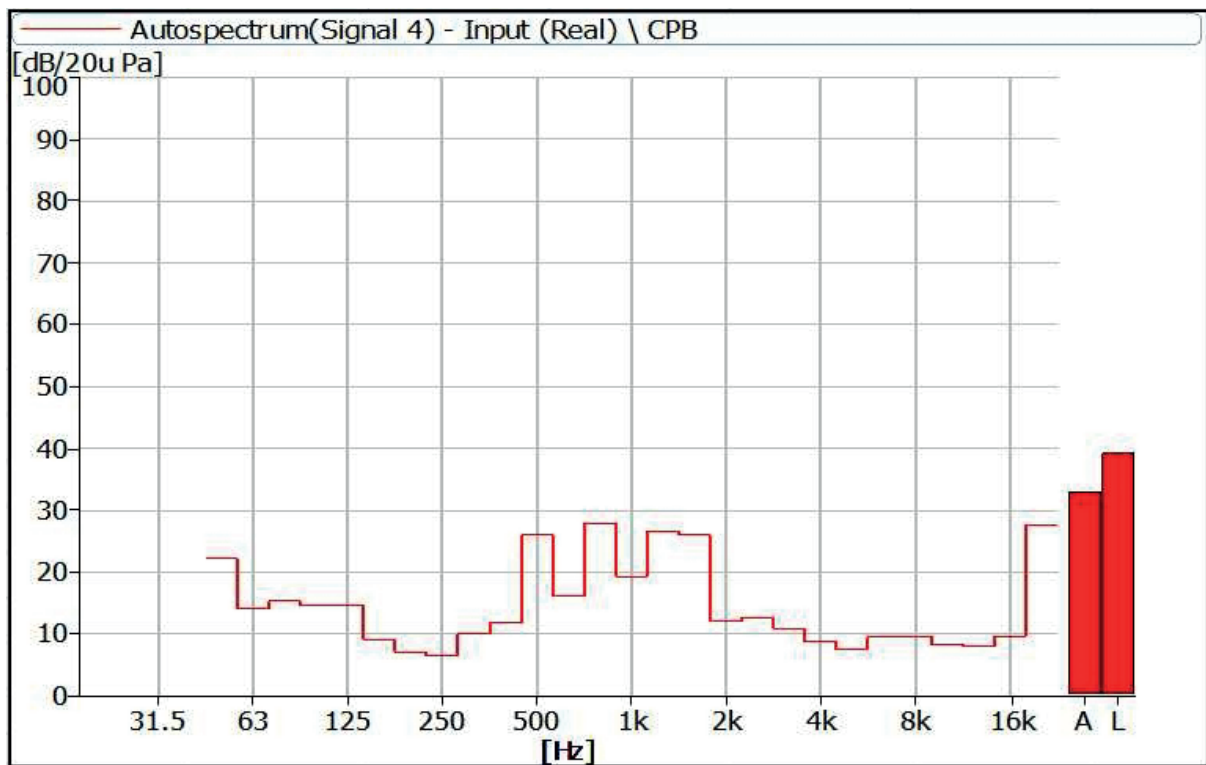
**Figure 27** Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 1)



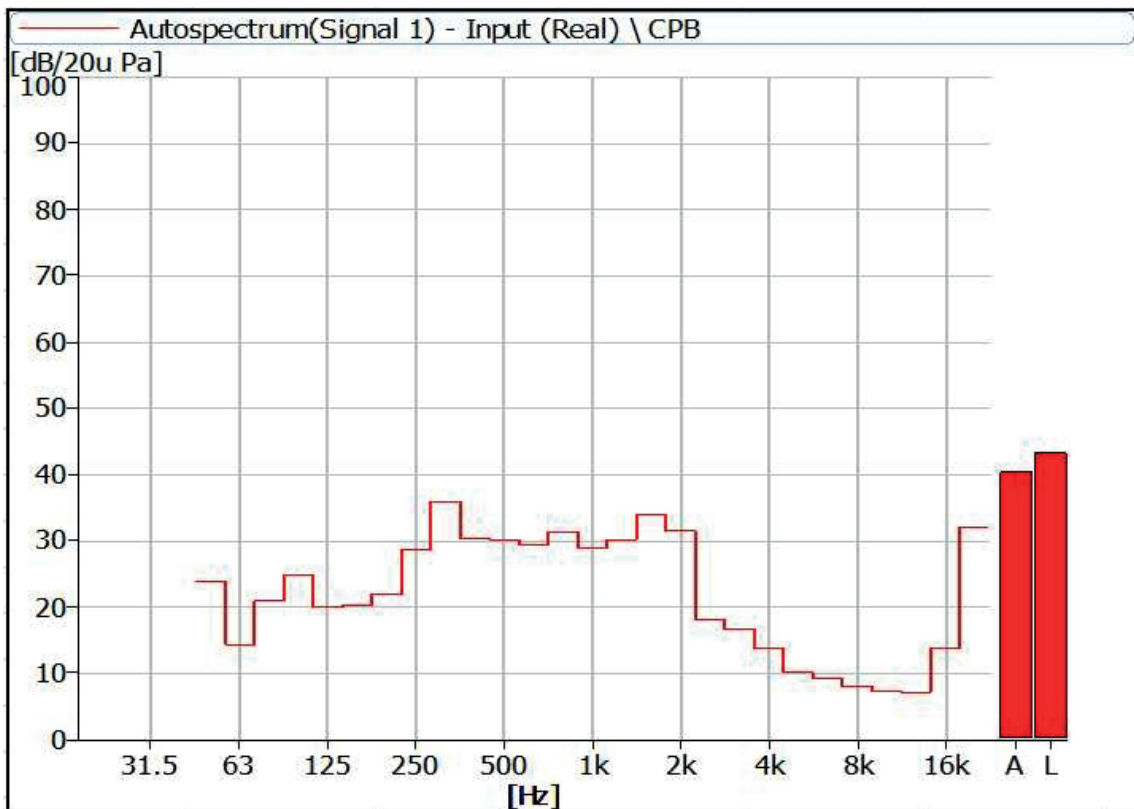
**Figure 28** Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 2)



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



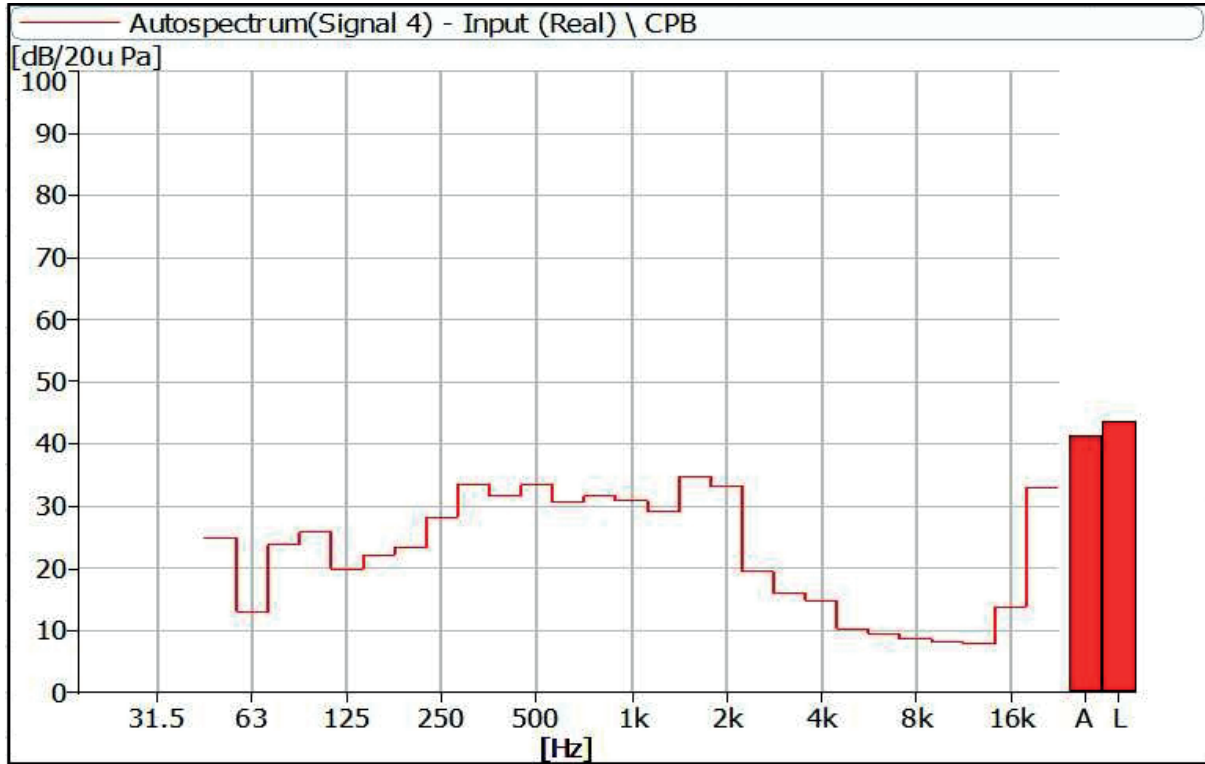
**Figure 30** Noise Spectrum of Stage Luminaires (The Super Silence mode, Static, No 4)



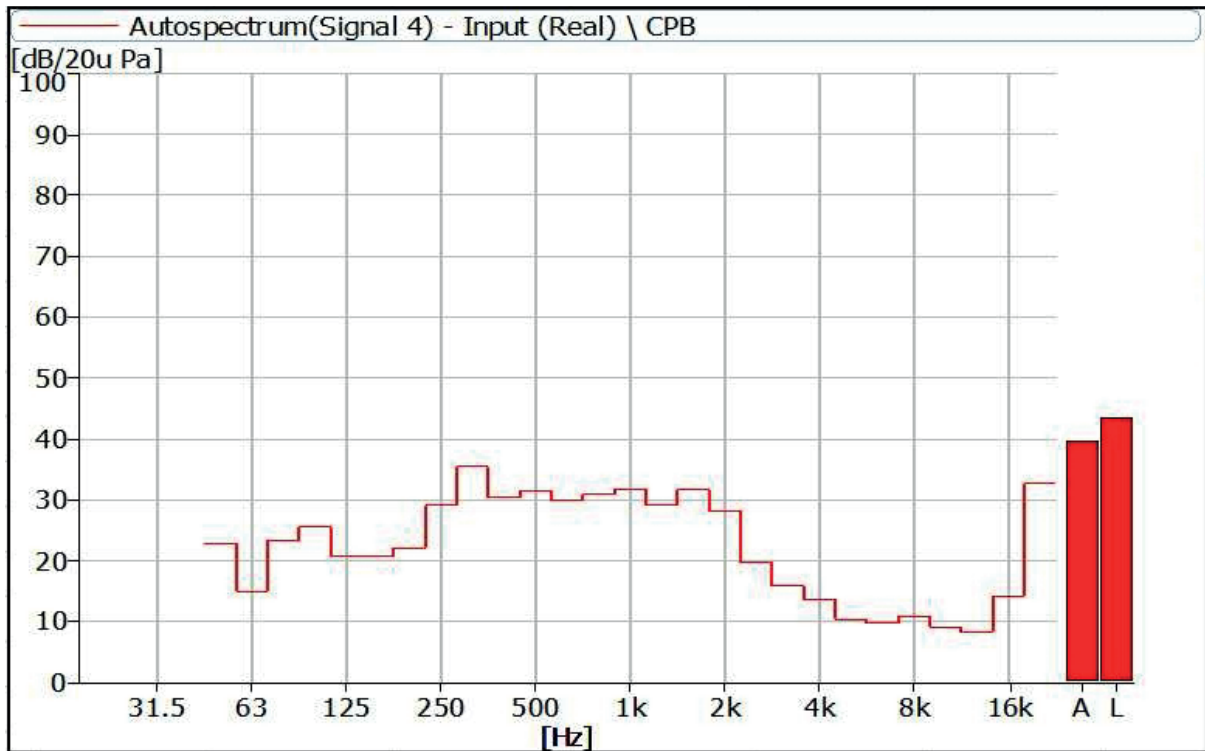
**Figure 31** Noise Spectrum of Stage Luminaires (The Super Silence mode, Dynamic, No 1)



**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