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SIST EN ISO/IEC 17025  
LK-008



LOTRIČ  
METROLOGY

## CERTIFICATE OF CALIBRATION

Certificate No: 275-141-16-1

Page 1 of 25

### CALIBRATION OF:

Sound Level Meter:	2238-4188-BZ7126	No: 2562571
Microphone:	4188	No: 2555341
Date of receipt:	2016-04-13	
Certificate No:	275-141-16-1	

### CLIENT:

Politie Eenheid Noord Nederland  
Balkengracht 3  
9405 CH Assen  
Netherlands

Order No: 00146

### CALIBRATION CONDITIONS:

Preconditioning: 6 hours at 23 °C  
Temperature: 24.4 °C ± 3°C  
Air Pressure: 98.1 kPa ± 3 kPa  
Rel. humidity: 36.3 %RH ± 20 %RH

### PROCEDURE:

Calibration was performed according to the standards SIST IEC 60651 and 60804 type 1 and internal manual ML10N60.

### RESULTS:

Results with uncertainty are stated from the page 2 onward.

Date of Calibration: 2016-04-15

Certificate issued: 2016-05-06

Franc Celestina  
Calibration Technician



Digitally Signed by Franc  
Celestina  
Date: 06.05.2016 12:02

Luka Dolenc  
Approved signatory

Digitally Signed by Luka  
Dolenc  
Date: 2016.05.10 12:12:50  
+0200

Kalibrator.



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## CERTIFICATE OF CALIBRATION

Certificate No.:275-142-16-1

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### CALIBRATION OF:

Calibrator: Brüel & Kjær 4231 No: 2564381  
Date of receipt: 2016-04-13 IEC Class: 1

### CLIENT:

Politie Eenheid Noord Nederland  
Balkengracht 3  
9405 CH Assen  
Netherlands

Order No: 00146

### CALIBRATION CONDITIONS:

Preconditioning: 4 hours at 23 °C  
Temperature: 24.96 °C  
Air Pressure: 98.58 kPa  
Rel. Humidity: 39.5 %RH

### PROCEDURE:

Calibration was performed according to the standards SIST IEC60942 and internal manual ML10N60.

### RESULTS:

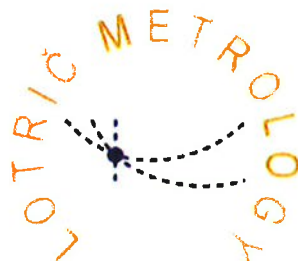
Results with uncertainty are stated from the page 2 onwards.

Date of Calibration:2016-04-19

Certificate issued:2016-05-06

Franc Celestina  
Calibration Technician

Luka Dolenc  
Approved Signatory



Digitally Signed by Franc  
Celestina  
Date:06.05.2016 12:11

Digitally Signed by Luka  
Dolenc  
Date: 2016.05.10 12:15:08  
+0200

*The verdict "Passed/Failed" does not take the calibration uncertainty into consideration; therefore this certificate is not a conformance statement. "Passed" only means that the measured value is within the limits stated on the certificate (in most cases tolerances and uncertainties are equal to the ones in IEC standards).*

**Measurement uncertainty**

*The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA Publication EA-4/02.*

*The results and uncertainties quoted refer only to the measured value at the time of measurement and carry no implication regarding the long term stability of the instrument.*

*Place of Calibration:*

**Lotric Metrology Ltd., Selca 163, 4227 Selca  
QS IMS, PE Ljubljana, Cesta Ljubljanske brigade 23a, Ljubljana.**

**Sound Pressure Levels**

All stated values are valid at environmental reference conditions

Nominal Level [dB]	Accept Limit Lower [dB]	Accept Limit Upper [dB]	Measured Level [dB]	Measurement Uncertainty [dB]
94	93.60	94.40	93.98	0.11
114	113.60	114.40	113.97	0.11

**Frequency**

Nominal Frequency [Hz]	Accept Limit Lower [Hz]	Accept Limit Upper [Hz]	Measured Frequency [Hz]	Measurement Uncertainty [Hz]
1000	990.00	1010.00	999.97	0.10

**Total Distortion**

Distortion mode:  TD  THD

Calibration Level [dB]	Accept Limit [%]	Measured Distortion [%]	Measurement Uncertainty [%]
94	3.00	0.59	0.13
114	3.00	0.22	0.13

**Environmental Reference Conditions:**

Pressure: 101.3 kPa, Temperature: 23 °C, Relative Humidity: 50%

**Instrument List**

<i>Instrument Model</i>	<i>Instrument Name</i>	<i>Serial no.</i>
3560	PULSE Analyzer	2387695
4192	Transfer Microphone	2360360
4228	Reference Sound Source	1756640

**Comments**

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## Instruments

<u>Category:</u>	<u>Type:</u>	<u>Manufacturer:</u>	<u>Serial No.:</u>
Generator	Pulse Generator	Brüel & Kjær	2423619
Amplifier/Divider	3111 Output Module	Brüel & Kjær	2334521
Adaptor	WA0302A, 12 pF	Brüel & Kjær	2358776
Calibrator	4226	Brüel & Kjær	2288488
Voltmeter	DMM34970A	Agilent	MY41000875