Environmental Monitoring

161 DRURY LANE WC2B 5PN

McAleer & Rushe

INTRODUCTION

This document provides details for the support of environmental monitoring procured from Campbell Associates Limited and details how our systems work and what service you will receive from us.

The document includes examples of the hardware and software to enable you to conduct environmental monitoring on site easily.

LONDON BOROUGH OF CAMDEN REQUIREMENTS

Camden's requirements for real-time dust monitoring are consistent with Camden and GLA policy and industry best practice guidance. The AQA submitted at part of the planning application found that the proposed development is consistent with Policy A1 of LB of Camden's Local Plan, as the development will not have a significant detrimental effect on air quality, and hence the amenity of existing communities. It is also consistent with Policy CC4, as the development does not increase exposure to poor air quality.

The Air Quality Assessment submitted at planning will be sent alongside this document.

Real-time dust monitoring can be used to enable effective on-site management of the air quality impacts of demolition and construction activities through comprehensive preventative dust mitigation and, in the case of triggering a dust alert from the monitoring equipment, through the application of additional reactive dust mitigation measures.

Ultimately, the purpose of real-time dust monitoring is to ensure that the air quality impacts of demolition and construction activities are minimised as far as possible for the protection of amenity and health, both for local residents, the general public, and operatives on-site.

DEVELOPMENT INFORMATION

Campbell Associates Limited has been commissioned by McAleer & Rushe to undertake Air Quality monitoring for 3 months prior to work commencing on site. Additionally, the Air Quality monitoring will continue during demolition and construction of the office development at 161 Drury Lane, Covent Garden, London WC2B 5PN. The site location is shown in Appendix A.

THE WORKING HOURS

Permitted hours for noisy works are 8 AM to 6 PM - Monday to Friday

No works at any time on - Saturday, Sunday and Public Holidays

Air Quality monitoring is being undertaken in order to protect nearby sensitive receptors from the effects of dust exposure as a consequence of the ongoing construction works.

The monitors shall be retained and maintained on site in the locations agreed with the local planning authority for the duration of the development works, monthly summary reports and

automatic notification of any exceedances provided in accordance with the details thus approved. Any changes to the monitoring arrangements will be submitted to the Local Planning Authority and approved in writing.

OUR MONITORING SUPPLIER

Campbell Associates Limited provides solutions for measuring noise, vibration, dust, air quality, wind, and crack monitoring. Their systems are used on industrial, construction and demolition, racetracks, defense, and other sites where the environmental impact needs to be monitored in real-time via an automated and remote monitoring system.

Campbell Associates provide hardware and software solutions for hire and sale with expertise and experience in monitoring construction sites. They have qualified acousticians and engineers to ensure their customers receive expert advice and support for the equipment they buy or rent.

Campbell Associates has been operating for over 24 years and has built a reliable reputation to supply simple and quality products and services.

Campbell Associates provide a:

- Simple to use environmental instruments and software.
- Automated Remote monitors that work efficiently and reliably.
- Remote access using WIFI and cellular connections to communicate with devices.
- Limit Breach Alerts remote monitors provide real-time email and SMS alerts.
- Connectivity Alerts Our remote monitors provide two-way communications with alerts for power and errors.
- Reports can be automated from our cloud system to your email. The system can be scheduled weekly, fortnightly, or monthly.

Campbell Associates Limited are based in Great Dunmow, Essex, CM6 1HD and have been trading since 1999 and are members of the Institute of Acoustics. Their technical director Ian Campbell is an Honorary Fellow of the IOA. Their sales director John Campbell is on the local committee of instrumentation & measurement. Their sales team hold various relevant degrees and/or IOA relevant qualifications, which includes qualifications in Noise at Work, Sound Insulation, Environmental Noise, and Acoustic's diplomas as well as health and safety and construction related qualifications to ensure the monitoring is installed safely and appropriately.

Campbell Associates hold various certificates and accreditations for working safely on construction and demolition sites. They hold various training qualifications such as Working at Height certificates, Health and Safety awareness trained and certified, PASMA trained and certificated, they hold CSCS cards and are a CHAS accredited company. Campbell Associates is also a UKAS accreditation for its calibration laboratory.

Campbell Associates Ltd is accredited in accordance with International Standard ISO/IEC 17025:2017 – General Requirements for the competence of testing and calibration laboratories

MONITORING HARDWARE

Manufacture: Aeroqual | Dust Monitor [Mcerts certified] Model: Dust Sentry A

- MCERTS certified PM10 dust monitor
- Measures TSP, PM10, PM2.5 or PM1
- (Specify Dust Sentry Pro for logging of all parameters not Mcerts compliant)
- Includes SMS and email alerts for breaches and connectivity alerts
- 110v or 240v power required (Mains power only)
- Automatic upload of data to the cloud for reporting
- Optional Windsonic weather station
- Option to add gases such as VOC and NO2



MONITORING LOCATIONS







EQUIPMENT SPECIFIED & CALIBRATION INFO

| Noise | Vibration | Dust |
|-------|-----------|-----------------------------|
| | | 2 Dust Sentry Dust Monitors |

For dust (PM10) monitoring at the 161 Drury Lane site, we will be using Aeroqual Dust Sentry dust monitors at two locations. These monitors are certified to the MCERTS Indicate standard as required by Camden Council. s/n 539 | AER-DS #39 was last serviced on 10th October 2023, s/n 1868 | AER-DS #236 was last calibrated on 29 July 2022,

Measurement Position 1:

The Dust Sentry PM10 monitor is positioned to the North of the site, on the roof of 161 Drury Lane. The air intake is located approximately 1.5 meters above ground level.

Approximately 1.5 meters from Drury Lane façade

Measurement Position 2:

The Dust Sentry PM10 monitor is position to the South West of the site, on the balcony of 161 Drury Lane The air intake is located approximately 1.5 meters above ground level.

Approximately 0.5 meters from rear building boundary.

SONITUS CLOUD & REPORTS AND ALERTS

Sonitus Cloud enables access all the environmental monitoring data in one location from any internet enabled device. Check real time data, generate reports, and configure your systems to manage your projects efficiently. The simple interface means anyone can run the projects with simple calendar overviews, detailed daily data, and user definable alerts. Sonitus Cloud also allows you to set user and access rights for projects to ensure everyone can see exactly what they need.

- Real-time Data
- Safe and Secure

SONITUS CLOUD

- SMS & Email Alerts for breaches
- SMS & Email Alerts for connectivity
- Weekly, Bi-weekly, or monthly Reports
- Calendar View for note logging.
- Plot data to PDF or Image types
- Unlimited number of users and permissions







From top to bottom : data plotted over a day, calendar overview, user right permissions

ACCESS OUR SYSTEM ON ANY DEVICE, ANYWHERE IN THE WORLD



The limits are set and adjusted on the cloud on the following page.



ALERTS

Here is an example of a notification alert via email.



Here is an example of a notification alert via SMS.

| ••••• AT&T LT | 4:10 PM | ન 80% 🔳 |
|--|--|----------------|
| < Back | Campbell Associ | Contac |
| | Today 4:07 PM | |
| breach h your mor Court, Po Road al C limit leve mdasuret on chann latest rea limit setti account. https://a | as been recorded by iltor at London Crown sition 1, on Redfield 8:08; 27 July, The I is 5 mm/s, and the I value is 0.352 mm/s ei 1, Io view the dings or adjust your ngs, log into your pp.sonitussystems.com | n |
| io iMes | sage | Send |

Dust Limits: Dust limits for construction and demolition are normally based on local guidance written by the local authority in their code of practice or otherwise taken IAQM which has guidance on dust levels for construction based on case studies carried out. A more recent report by King's College has evaluated measurement data from nine construction sites. The monitoring was based on reference-equivalent samplers, and the analysis included 1.8 million data points. The outcome of this research recommends a Site Action Level of 190 µg/m3, measured as a 1-hour mean.

PM10 particles are sized as course 10 μm in diameter. These particles have damaging effects on our health and wellbeing.

The IAQM (Institute of Air Quality Management - Guidance on the assessment of dust from demolition and construction) recommend a PM10 limit of:

- 1-hour mean average of 190 µg/m3 for PM10
- 15 -Min mean average of 250 ug/m3 for PM10

SUMMARY OF LIMITS

The limits will be setup on our cloud portal as follows:

DUST

| Dust Limit | Alert Period | Parameter | Alerts | Notification |
|------------|--------------|-----------|------------|-------------------|
| 190 ug/m3 | 1 hr | PM10 | Weekdays & | Dust Action Alert |
| 250 ug/m3 | 15 Min | PM10 | Saturdays | Dust Action Alert |

EXAMPLE REPORT

The Sonitus Cloud system provides automatic week, fortnight, or monthly reports directly to your email or to our cloud system which can be downloaded.



NVD Project - Noise, vibration, dust

EXAMPLE Environmental Monitoring Report

11 - 17 Jul 2022

Your Company Name

youremail@yourcompany.com

INTRODUCTION

Intro text that will be included in the report

MONITORS

AIR MONITORS

| Model | Label | Location | Calibration Date |
|-------|----------------|------------|------------------|
| DM30 | Dustsens 00142 | Sonitus HQ | 2020-12-10 |

NOISE MONITORS

| Model | Label | Location | Calibration Date |
|-----------|-------|-------------------------------------|------------------|
| EM2030-AO | 00391 | PERMANENT DEMO UNIT - Sonitus HQ | 2020-05-18 |

VIBRATION MONITORS

| Model | Label | Location | Calibration Date |
|--------------|-------------------------------------|------------|------------------|
| AvaTrace M80 | Vibration Monitor s/n 0123 - MP1 | Sonitus HQ | 2018-01-01 |

AIR MONITORING

LIMITS

Dustsens 00142 - Limits

| Parameter | Limit Level | Averaging Period | Weekdays | Saturdays | Sundays |
|-----------|-------------|---------------------|----------|-----------|---------|
| PM10 | 50 | 24 hours | Yes | No | No |

BREACHES

Dustsens 00142 - Breaches No limit breaches at this monitor.

DAILY AVERAGES

Dustsens 00142 - Daily Averages

| Date | Parameter | Average µg/m ³ |
|------------|-----------|---------------------------|
| 2022-07-11 | PM2.5 | 2.18 |
| 2022-07-11 | PM10 | 9.51 |
| 2022-07-11 | PM1 | 0.92 |

If an exceedance has occurred a **RED** line will appear in the calendar view in the day entry which includes the limit level, actual level and further important information.



Notes can be inputted by the site manager on any day using the web and mobile app.

Local weather data is collected from the nearest Met Office weather station (44,000 sensors are UK based). The data shown is based on the nearest local sensor to the defined coordinates for the selected sensor.

| Monitor | | Month | | Year | | |
|---|----------------------------|---|--|---------------------|----------------------------|----------------------------|
| Dustsens 00142: Sonitus H | IQ 🗍 | November | \$ | 2022 | ¢ | iew |
| SUN | MON | TUE | WED | тни | FRI | SAT |
| | | 1 12.26 µg/m³ | 2 9.71 µg/m³ | 3 10.97 µg/m³ | 4 9.25 µg/m³ | 5 11.4 µg/m² |
| 6 7.59 µg/m³ | 7 9.34 µg/m³ | DAILY AVERAG | nd November 2022 | 10 2 | 11 7.18 µg/m³ | 12 8.55 µg/m³ |
| 13 15.63 µg/m ³ | 14 7.58 μg/m³ | PM10 PM2.5 | 9.71 µg/m ³ 4.43 µg/m ³ | 17 5 | 18 9.27 μg/m³ | 19 6.69 µg/m³ |
| 20 9.28 µg/m³ | 21 9.29 µg/m³ | View charts for WEATHER Temperature | this day View grid for t | this day 24 | 25 | 26 |
| 27 | 28 | 10° - 14° NOTES Add note for th | 70% 42km/hi SSW | | | |

APPENDIX

| INSTRUMENT | MODEL | ACCURARY | FUNCTION | OTHER |
|-----------------|-----------------------|--|------------------------------------|---|
| AEROQUAL | DUST SENTRY | Certified Indicative Mcerts for PM10 | PM10, PM2.5, PM1 OR TSP. | Heated Inlet |
| AEROQUAL | DUST SENTRY PRO | Indicative | PM10, PM2.5, PM1 & TSP. | Heated Inlet |
| AVA MONITORING | M60 | BS 7385 BS 5228-2 ISO 4866 | PPV with Frequency Waveforms | <5-month battery life |
| AVA MONITORING | M80 | BS 7385 BS 5228-2 ISO 4866 | PPV with Frequency Waveforms | <8-month battery life |
| SONITUS SYSTEMS | EM2010 | BS 5228-1 IEC 61672 CLASS 1 | Leq, Lmax, Ln, Lfeq, A, C. | Optional: Audio Capture. Battery Option <10 or 30 days power |
| SONITUS SYSTEMS | EM2030 | BS 5228-1 IEC 61672 CLASS 1 | Leq, Lmax, Ln, Lfeq, A, C. | Optional: Audio Capture. Battery Option <10 or 30 days power |
| SONITUS SYSTEMS | DM30 | Certified Indicative Mcerts for PM10 & PM2.5 | PM10 and PM2.5 | Heated Inlet & Battery Option <5 days power |
| NORSONIC | 1251 | BS 5228-1 IEC 61672 CLASS 1 | Calibrator 114 dB | 1kHz |
| NORSONIC | 1255 | BS 5228-1 IEC 61672 CLASS 1 | Calibrator 114 dB | 1kHz |
| NORSONIC | 1256 | BS 5228-1 IEC 61672 CLASS 1 | Calibrator 114 dB or 94 dB | 250Hz or 1kHz |

DATA SHEETS & CERTIFICATES

Certificate of Accreditation



Campbell Associates Ltd

Calibration Laboratory No. 0789

Is accredited in accordance with International Standard ISO/IEC 17025:2017 – General Requirements for the competence of testing and calibration laboratories.

This accreditation demonstrates technical competence for a defined scope specified in the schedule to this certificate, and the operation of a management system (refer joint ISO-ILAC-IAF Communiqué dated April 2017). The schedule to this certificate is an essential accreditation document and from time to time may be revised and reissued.

The most recent issue of the schedule of accreditation, which bears the same accreditation number as this certificate, is available from www.ukas.com.

This accreditation is subject to continuing conformity with United Kingdom Accreditation Service requirements.

Matt Gantley, Chief Executive Officer United Kingdom Accreditation Service

Initial Accreditation: August 7, 2008 Certificate Issued: December 9, 2019



UKAS is appointed as the sole national accreditation body for the UK by The Accreditation Regulations 2009 (SI No 3155/2009) and operates under a Memorandum of Understanding (MoU) with the Department for Business, Energy and Industrial Strategy (BEIS). Automated Online Noise Monitoring Simplicity and Precision





Sonitus Sound Level Monitor

User rights control to share all or restrict



Available for Sale or Hire





Compact integrate system - EM2030



Weather proof enclosure & microphone

www.campbell-associates.co.uk<mark>.</mark>hotline@campbell-associates.co.uk<mark>.</mark> 01371 871030



There is no need to install any software with this unit. Simply access the Sonitus Cloud via any internet enabled device and see your project data 24/7.

- View any data from your projects & export directly to your device.
- Calendar overview to see summary data with

integrated weather data

- Customise the interface with your company logo and colour scheme
- Setup user rights access to restrict or share data
- Automatic SMS and email alerts
- Data is safe and secure
- Plot data over time and date to see the whole picture



Technical Specifications

SoundLevel Measurement

Accuracy:IEC61612Class1 DynamicRange: 20 t⊡12ldB(A) Frequency Range:20Hzt⊡2DkHz Frequency weighting: A and C weighting Parameters:LEQ,L05,LI□,LSD, L90, L95, LMAX

.!.9..!min!l.

Measurement period:1, 5,10, 15 or 30 minutes Data storagecapacity: 5 years (5-minutelogging) Procedure: Automaticmeasurement andlagging <u>Interface</u>: TheEM2030 and Inlineinterfaceare accessedusingany standardwebbrowser. Communications Wi-Fi(user interface) 3G SIMcardsuppliedwitheachmonitor

Microphone

Sensitivity: 50mV/Pa Connection: BNCto BNC (3mcable as standard) Power Supply: Constant current ICP,IBV 4mA

Power Requirements

Power Input: 110v - 240v AC EM2030: 12vDC,upto 500mA

www.campbell-associates.co.uk | hotline@campbell-associates.co.uk | 01371 871030



aeroaual?

DUST SENTRY

Near reference real-time particle monitor for specific dust fractions

Designed for environmental professionals who need to monitor and manage specific outdoor dust and particulate emissions, continuously and in real-time.

The Dust Sentry is a nephelometer-based instrument that delivers defensible and accurate mass measurement for PM_{10} , PMLS. PM., or TSP.

MCERTS certified for PM₁₀ and SCAQMD 1466 pre-approved.

What is it?

- Reduce failure and downtime thanks to thisrobust
 purpose-built outdoor dust monitor
- Set up and deploy in under 10 minutes-get live data flowing to your PC or mobile
- Reduce site visits using two-way communications remotely troubleshoot, upgrade software, change settings, and calibrate
- Plug in all your devices- noise, weather, reference monitors - to the Dust Sentry power and data interface and view data in one software dashboard
- Power up with quick and easy interface to solar and battery systems
- · Respond in real-time viaconfigurable email/ SMS alerts

What can it measure?

· Specific dust fractions, wind, weather and noise





 Industrial operators who need to manage dust and particulates from site activities, within regulatory or permitted limits:

IN I

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DUST SENTAY

- · Construction and remediation projects
- · Quarry and mine operators
- · Port and bulk handling terminals
- Waste management sites
- Environmental consultants who want defensible data without the usual time and hassle of air monitoring projects
- Regulatory authorities who need to fill the gaps in the regulatory PM monitoring network
- EHS managers who need to demonstrate that they are providing a safe environment for the people in their care
- Researchers who want to collect accurate, scientifically robust data without the cost of a reference PM monitor

sales@aeroqual.com

aeroqual.com



DM30 DUST MONITOR

The IDM30 air quality monitor from Sonitus Systems is a fully automated particulate monitor for measuring PIMI_D, PMIB and PM_ Designed for continuous monitoring of dust levels this monitor is suitable for all applications.

This monitor has MCERTS for PMIO& PM25; MCERTS is the UK Environment Agency's Monitoring Certification Scheme for ambient air quality monitoring equipment.









Particulate Measurement:

Parameters: PM₁₀₁ PM₂₅.and PM₁ Method: Opticall particle counter Measurement Range: up to 2000 μg/m³ Particulate Range: 0.35 to 40 μm

Power Requirements:

Battery: Portable battery for up to 6 days use Input: 110 - 240V A:C Consumption: 24W with heater at full power

Physical:

Dimensions: 400mm x 300m x 150mm with 180mm inlet

Weight 12kg

Operational Temperature: -10 to 50°C Humidity Range: 0 to 9'5% RH Installation: Supplied with mounting bracket

DIM30: DUST MONITOR ONLY

Logging:

Measurement Period: 1, 5, 10, 15 or 30 minutes Hourly & 24 hourly averages calculated online

Communications:

Wi-Fi (user interface) 4G SIM Card: Supplied with each monitor

Data **Platform**:

Soniitus (loud: Online platform available on any irnternet enabled device Access data 24/7 Automatic re1port emailed weekly or daily SMS & Email Alerts Easily setup user permission rights

DM30N: DUST & NO-ISE COMBINED









mCERTJ

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

DM30 Dustsens

Manufactured by:

Sonitus Systems Ltd

Unit 2, Goldenbridge Industrial Estate Inchicore Dublin 8, D08 YY38 Ireland

has been assessed by CSA Group and for the conditions stated on this certificate complies with:

MCERTS Performance Standards for Indicative Ambient Particulate Monitors Environment Agency, August 2017, version 4

Certification ranges:

PM2.5 0 - 200μg/m³ PM10 0 - 200μg/m³

Project No.: Certificate No: Initial Certification: This Certificate issued: Renewal Date: 80121572 Sira MC220402/00 31 May 2022 31 May 2022 30 May 2027

Andrew Young Environmental Team Manager

MCERTS is operated on behalf of the Environment Agency by CSA Group Testing UK Ltd



Hawarden, Deeside, CHS 3US Tel: +44 (0)1244 670 900 The MCERTS cet1dicate consists of this document in its entirety. For conditions of use, please consider all the information within.

Unit 6, Hawarden Industrial Park

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Specifications I Dust Sentry

| Particle Module | Sizes | | Acruracy | Resolution | LCNJer Detectable Limit (2□) | |
|---|---|--|--|--------------------------------------|---|--|
| Nephelcmeter | PM, PM25, PMro!!!'ISP | <i>D</i> to 60,000 µg/m' | rj(2 μ g/m'+ S% of reading) | 0.1 ug/m' | <1µg/m ¹ | |
| System Specifcations | | | | | | |
| ControlSystem | Embedded fanless PC (Intel Ce | eleron• N33SO, 1.1GHz,d | lual core, 4GB RAM, 32GB SSD hard driv | re), Ubuntu Linux C | OperatirljI System | |
| Communic.ations ¹ | Standard: WIFI, Ethernet (LA | N) Optional modem:Cell | ular IP3G HSPAor 4G LTE | | | |
| Software | Aeroqual Connect instrument operating system. Aeroqual Cbud instrument monitoring. management and technical support via secure doud servers, accessed via web brawser (IE, Firefox, Chrome, safari). Cloud standard features; configuration, calibration, diagnostics, remote ted'Inical supp:art. Cloud optional features; te>tt (SMS) and email alerts, 3rd party sensor measurements, full data visualisation with charts, wind and pollution grace data creating with auto data expect the ETE and ABL full inclument output in sensor for the sensor of the sensor of | | | | | |
| Data bgging | 32 GB Hard Drive(> 5 years d | ata storage) | | | | |
| Outputs | 2 x Relay (optional14 x 4-20m | nA (optional) | | | | |
| Averaging period | 1 min, 5 min, 10 min.,15 min, | 20min, 30min, 1 hr, 2 hr | , 4 hr , 8 hr., 12 hr, 24 hr | | | |
| Power requirements2 | 100-260 VAC (standard): 3ff \ | N/ 24,. W,Regulated 1 | 2 VDC (If required): 33'W / 27.2'W | | | |
| Endosure | Lockable IP55 GRP cabinet v | with integrated aluminum | solar shield armor | | | |
| PMsampling system | Inlet: Omni-directional 36 on (14.1 inches) heated inlet; Optional sharp cut cyOOnes for PMJA, PM2.S or PM1size selection Pump: 12 V brushless CX: diaphragm Optics: 670 nm laser, near-forward scattering nephelorneterwith sheath air protection | | | | | |
| Dimensions | 483 H x 330W x 187 D mm (1 Indudes solar shield alTT'IOr & | 9H x 13 Wx 7.4 D incher mounting brackets | s) | | | |
| Weight' | < 13 kg (28.6 lbs) | | | | | |
| Environmental operating ral"@€ | -10-C to +S0-C(14 "Fto 122 " | 'F) | | | | |
| Mounting | Pole, tnpod and wall mounting | g brackets Included | | | | |
| 47mm Sample Filte<(Optional) | 47 mm filter for particle loadi | inganalysis | | | | |
| Factory Integrated & Tested Sensors (Optional) | Gill WindSonic(ultrasa,ic wind (noise sensor), Novalynx Pyra E-BAM PLUS (Beta-Attenua | sensor), Vaisala WXT53 anometer (solarradiation), tion Mass Monitor) | 36 (weather transmitter), Met 01e MSO BSWA 308 (sound leoel meter) Met-Or | (weather transmi ne BC-1060 (blac | ttert Orrus M 1(427 Class 1 k carbon monitor), Met-One | |

¹4G LTE not arvallable In all market!..

I.3(onfiguraricm u.d. for power and weight calculations: bal.@unit, nephelometer, PMoosharp cur. modem, heater on. @Configured as per note 2, and inc.I. Mo)(,1 modem. ¹¹Conli1:ured., he per note 2, and incl. Sierra modem. ⁴¹Dimemionl. are for enclosure. PM sampling Inlet with cyclo11e adds 360 mm (14.17"Jto total height.



MRK-D-0517 V3

aeroqual.com



Environment Agency

mCERTJ

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

Dust Sentry

Manufactured by:

Aeroqual Ltd

109 Valley Rd Mt Eden Auckland New Zealand

has been assessed by Sira Certification Service And for the conditions stated on this certificate complies with:

MCERTS Performance Standards for Indicative Ambient Particulate Monitors, Version 2 dated July 2012

Certification Range :

PM,a 0-150µg/m³

Project No. Certificate No Initial Certification This Certificate issued Renewal Dale 16A26311 Sira MC130235/00 21 October 2013 21 October 2013 20 October 2018

R Cooper I Eng Mins! MC Technical Director

MCERTS is operated an behalf of the Environment Agency by

Sira Certification Service 12 Acom Industrial Park, Crayford Road, Crayford Dartford, Kent, UK DA1 4AL Tel: +44 (0)1322 520500 Fax: +44 (0)1322 520501

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Approved Site Application

Any potential user should ensure. in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency Monitoring Technical Guidance Notes available at <u>www.mcerts.net</u>

The field test was conducted on a site representative of urban background particulate loading.

Basis of Certification

This certification is based on the following Test Report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

BECA Report Aeroqual MCertification Requirements dated 31/07/2013 Sira Report 16A27887 dated 25/09/2013

Product Certified

The measuring system consists of the following parts:

- OS 10 V1.1 Dust Sentry
- PM10 cyclone

This certificate applies to all instruments fitted with software version 3.4 and serial number -061 onwards.

Certificate No : Sira MC130235/00 This Certificate issued : 21 October 2013

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Environment Agency 'fl.

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Certified Performance

| Test | Result | MCERTS specification |
|--|------------------------|---|
| Constancy of the sample volumetric flow | <±3% | Remain constant within ±3% of rated value |
| Tightness of the sampling system | 0.9% | Leakage not to exceed 2% of sampled volume |
| Intra-instrument uncertainty for the reference method | | |
| All data | 0.46 µg/m ³ | ,;;5µgtm³ |
| 30 µgtm3 | 0.43 µg/m ³ | |
| ,;; 30 µg/m3 | 0.46 µg/m ³ | |
| Intra-instrument uncertainty for the candidate method | | |
| All data | 1.39 μg/m³ | ,;;5µg/m³ |
| 30 µgtm3 | 2.21 µg/m ³ | |
| ,;; 30 µglm3 | 1.18 μg/m ³ | |
| Highest resulting uncertainty estimate comparison against data quality oojective (Measurement Uncertainty) | 23.5% | WCMSWdqo Measurement uncertainty defined as 50% for indicative instruments |
| Maintenance Interval | Two weeks | Two weeks |

Certificate No : This Certificate issued : Sira MC130235/00 21 October 2013

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CERTIFICATION

mCERTJ

Description

The Dust Sentry employs a near forward light scattering nephelometer and PM_{10} sharp cut cyclone to measure PM_{10} .

The nephelometer uses a collimated beam of light from a laser operating at 670 nm to illuminate the incoming sample air. Light scattered by particles in the air is collected and focused on to a photodiode which converts the light intensity to an electrical signal. The signal is amplified and calibrated to provide an output in terms of particulate mass. The nephelometer has an on-board temperature sensor which corrects for thermal drift and sheath air to keep the optics clean.

Automatic baseline drift correction is achieved using a regular air purge cycle which pushes filtered air into the nephelometer to enable a particle-free background to be measured and subtracted from the mass signal. A 10 W inlet heater on the sample inlet tube reduces the humidity of sampled air to prevent particle growth and fogging of the nephelometer optics.

A diaphragm pump is used to provide a 2.0 LPM sample flow which is matched to the sharp cut cyclone design to ensure particles with diameters larger than 10 micron are removed.

General Notes

- 1. This certificate is based upon the equipment tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this Certificate. The Manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of Sira Certificates'. The design of the product certified is defined in the Sira Design Schedule for certificate No. Sira MC130235/00
- 2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.
- 3. The Certification Marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of Sira Certificates'.
- 4. This document remains the property of Sira and shall be returned when requested by the company.

Certificate No : Sira MC130235/00 This Certificate issued : 21 October 2013

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SUPPLIER CONTACT DETAILS

Support

 $\underline{Support@campbell-associates.co.uk}$

Sales Enquiries Hotline@campbell-associates.co.uk

Cloud Login app.sonitussystems.com

Telephone 01371 871 030

Website http://www.campbell-associates.co.uk

Terms and Conditions https://www.campbell-associates.co.uk/terms-conditions

Campbell Associates Ltd

Sonitus House Unit 5 Chelmsford Road Industrial Estate Great Dunmow Essex CM6 1HD

Appendix

Appendix A: Site location

