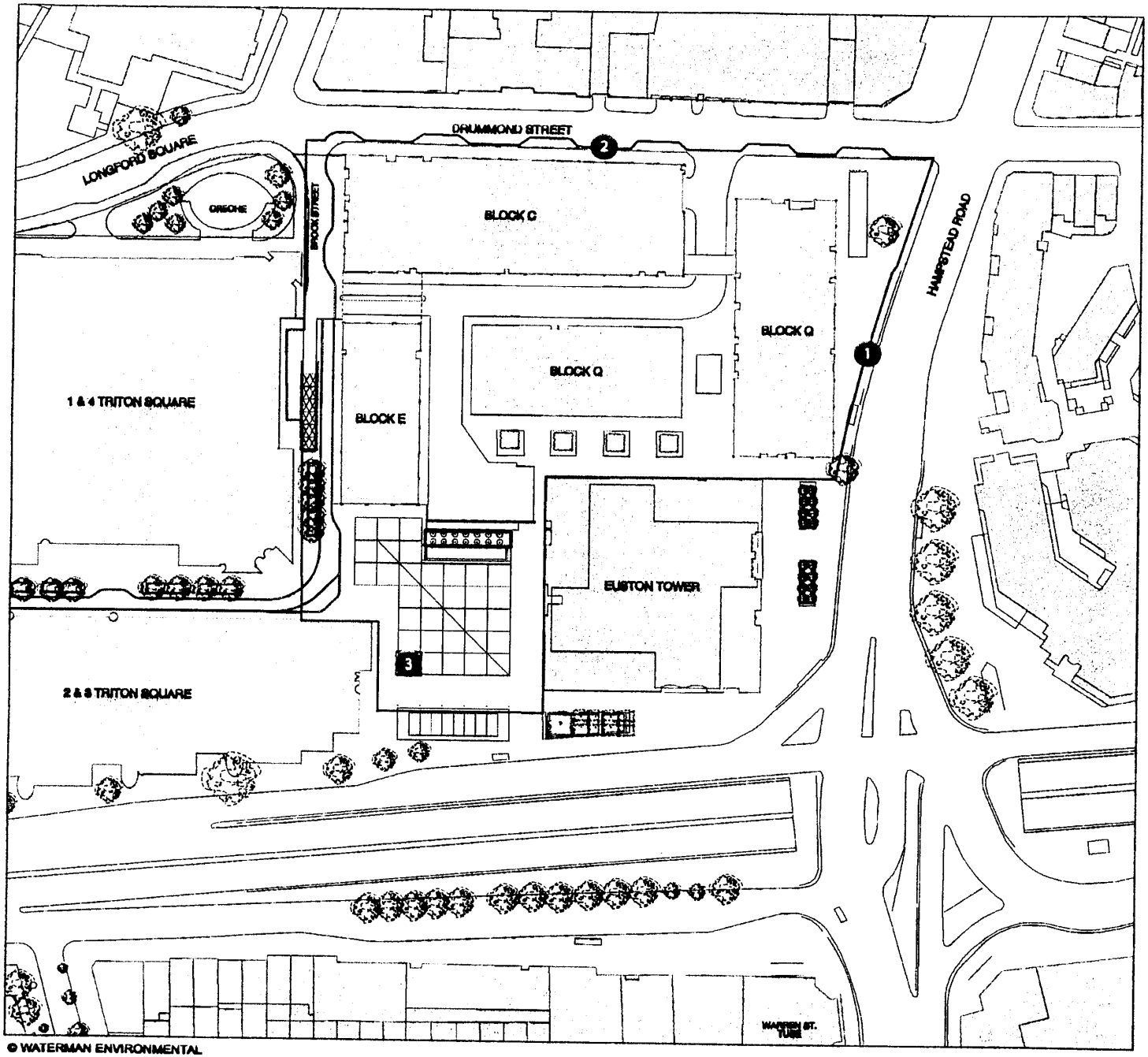
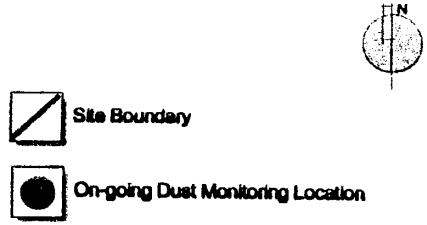




Drawing Title	Figure 3: Existing Site Plan Showing Proposed Continuous Monitoring Locations
Project Title	Regent's Place
Drawing No	EN7839_GR_DS_3A
Date	March 2008
File Location	\\nt-lnas\wa\projects\en7800\en7839\graphics\ds\issued figures

Waterman Environmental
Consulting Engineers & Scientists
www.waterman-group.co.uk

Appendix D AQ-PACK AMS MONITOR SPECIFICATIONS

BIONTECH LTD (UK)

AQ-Pack AMS

Real Time Particulate Air Monitoring

BIONTECH LTD (UK)

Applications

- Inhalation Toxicology and aerosol research,
- Roadside Monitor,
- Occupational health and safety / Work place and Indoor monitoring,
- Ambient air quality monitoring Passive sampling TSP, Aspirated option for sampling PM10 and PM 2.5
- Visibility and AQI. Studies,
- Ambient PM Survey and Site Sampler,
- Industrial process control,
- Remediation Monitor,
- Stack Sampling,

BIONTECH LTD (UK)

Features

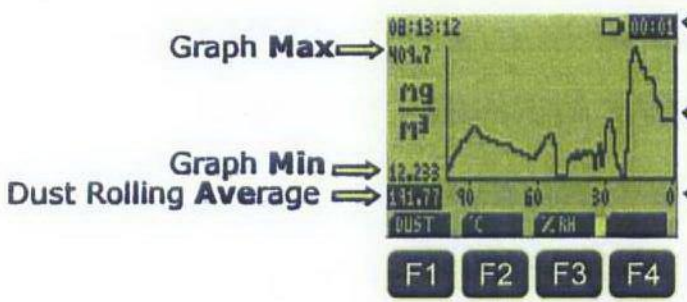
- Graphical user interface,
- System Configurations:
    1. **Hand Held/Portable** dust instrument,
    2. **Fixed** Dust monitoring system,

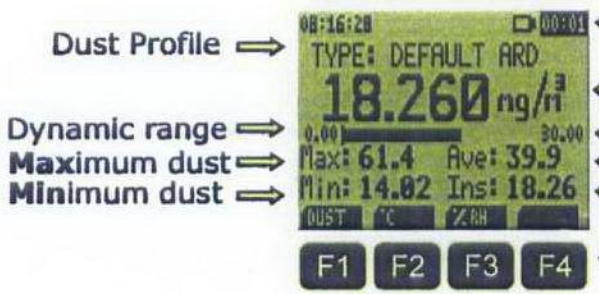
- Five dust ranges (0.001mg/m3..2000mg/m3),
- External Temperature Probe (-10 .. 55 °C),
- External Humidity Probe (5% .. 90%RH),
- Digital Input/output Alarms,
- Analogue output voltage (real time Pseudo output),
- Data logger, and,
- Battery operated or AC supply.

BIONTECH LTD (UK)

User Interface: Measurement Views

The AQ-Pack **AMS** displays data in a **Graphical** and **Numerical** format:





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User Interface: Parameters

Three example views of the AQ-Pack **AMS**

Edit Screen for rolling average:-

⇦ Real-Time Data

⇦ Edit dust rolling average from **1** sec to **[59:59] (MM:SS).**

⇦ Edit Temperature/Humidity rolling average from **1** sec to **[59:59] (MM:SS).**

Edit Set Range Screen:-

⇦ Current Dynamic range selected **(30 mg/m3).**

⇦ Edit Dust Dynamic Range (3 mg/m3 to 3000mg/m3).

Calibrate dust screen :- *Zero Span*

⇦ Set Zero

⇦ Set Span (Insert Span Filter)

BIONTECH LTD (UK)

User Interface: Logger Profile

The AQ-Pack **AMS** enables the user to select up to 4 logger profiles, Each profiles defines record type, and recording interval.

Used Profile location ⟹

Spare Profile location ⟹

(Up to 4 profiles).

⟸ Active Profile.

⟸ Function-keys

Function – Keys:

F1	DELETE	Removes Highlighted profile from list,
F2	COPY	Create a Copy of the Highlighted profile,
	NEW	Create a New Profile (Load default settings),
F3	EDIT	Edit Highlighted profile Edit Parameters in profile,
F4	SELECT	Select Highlighted profile.

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User Interface: Logger Dust record

The AQ-Pack **AMS** data logger will automatically record maximum and minimum dust concentration levels when the recording interval is grater than or equal to 1minute.

Record type ⟹

Logging time remaining ⟹

⟸ Interval from **1** sec to **[19:59:59]** (HH:MM:SS)

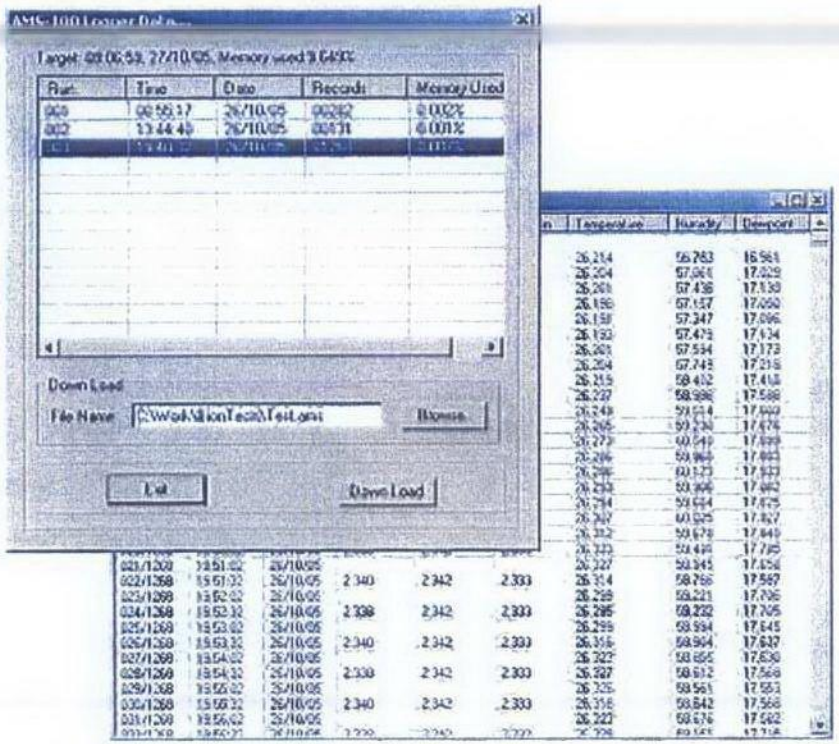
⟸ Record type,(**Interval, Spot,** and **Inhibit**).

Function – Keys:

F1	TITLE	Set/Edit Logger Profile Title,
F3	DUST	Set/Edit Dust record type and interval time,
F4	°C / RH	Set/Edit Temperature Humidity sensor Dust record type and interval time,

Logger Downloading

Data stored by the AQ-Pack AMS is downloaded using windows application program, Dialogue box shows results after interrogating the AQ-Pack AMS logger, Data viewed in list control or text format.



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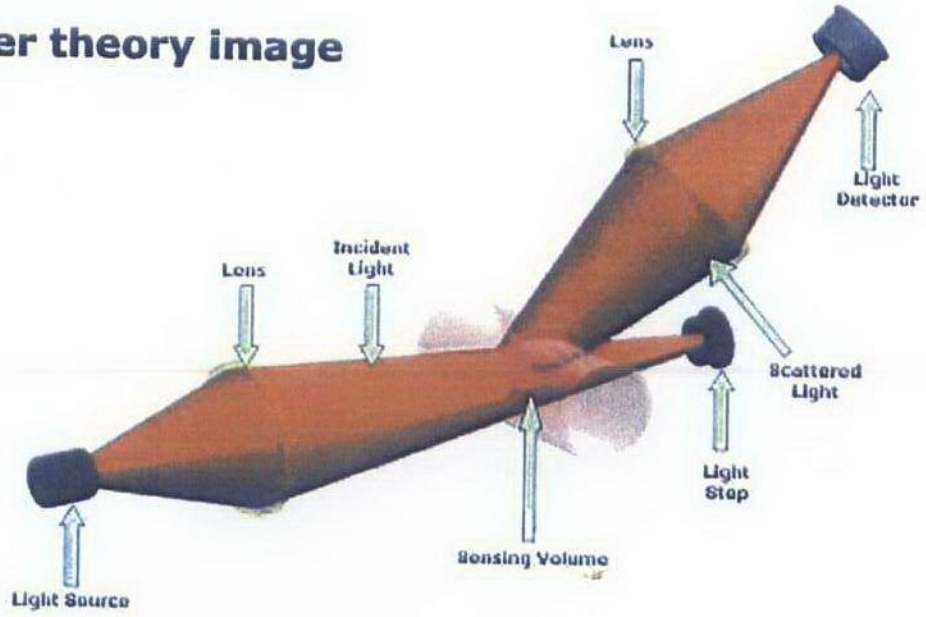
Light Scatter theory image

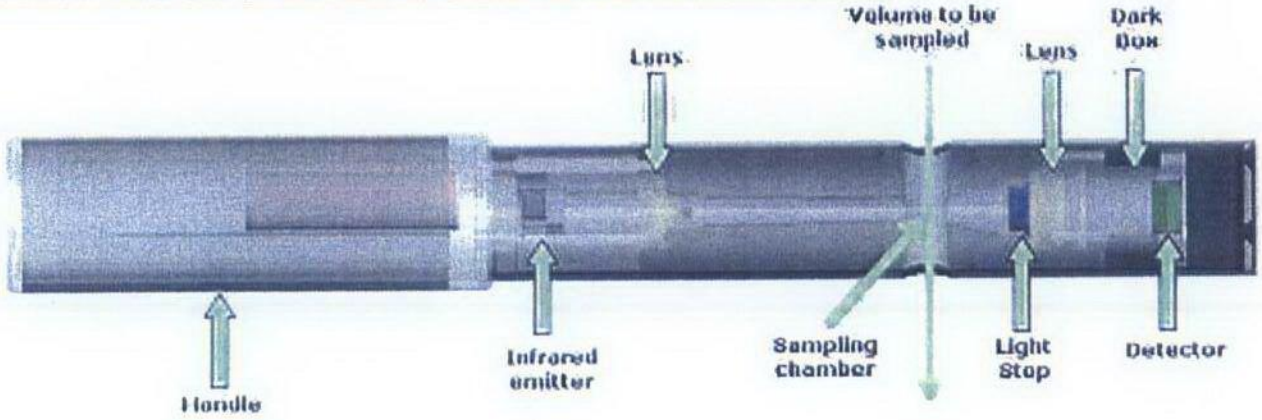


- Scattered light has components of diffraction, refraction and reflection.
- Changes in the particulate reflective properties, shape and color have an effect on instruments mass response.
- Gravimetric calibration is necessary to correlate to Regulatory PM concentration criteria.

RTAMS Photometer Design

Optical Probe

The Optical probe is manufactured from aluminium allow and is used like a wand in the ambient air to detect aerosols particulates. And the probe can be aspirated using external pump.



•Infrared Emitter

The wavelength of the emitter is 810nm and has an integrated photo detector this feedback is used to maintain a constant modulated power output and compensated for ambient temperature changes.

•Detector

A photodiode is used to detect any light energy that is refracted, diffracted, and reflected within the sampling chamber. and convert it to a current proportional to the forward light scatter.

•Light Stop

The energy emitted from the infrared emitter is focused into the light stop; the light stop is used to inhibit any light being detected by the photo diode when no particulates are in the sampling chamber.

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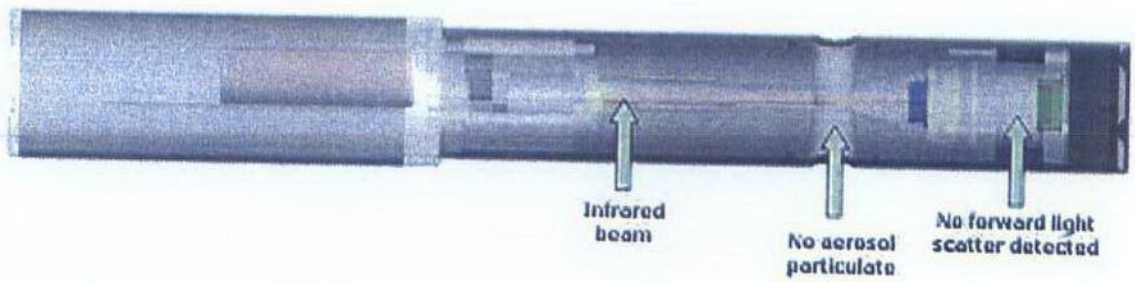
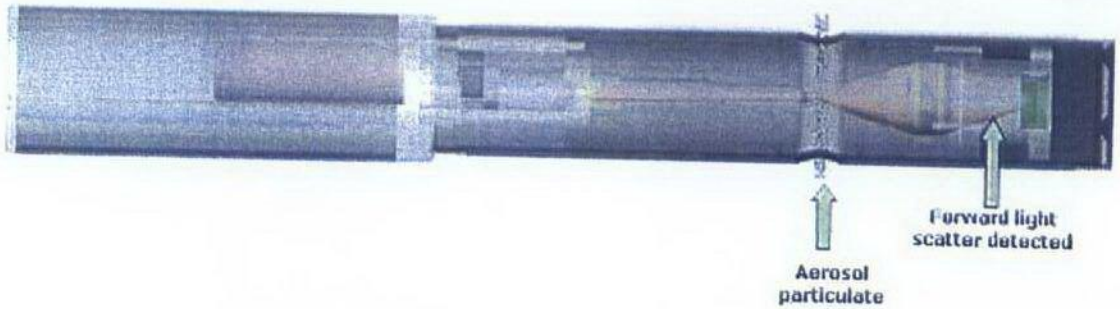
Optical Probe: Clean Air

When the probe is subjected to clean air i.e. there is no aerosol particulate in the sampling chamber all the energy is will be collected by the light stop and there for no forward scattering.

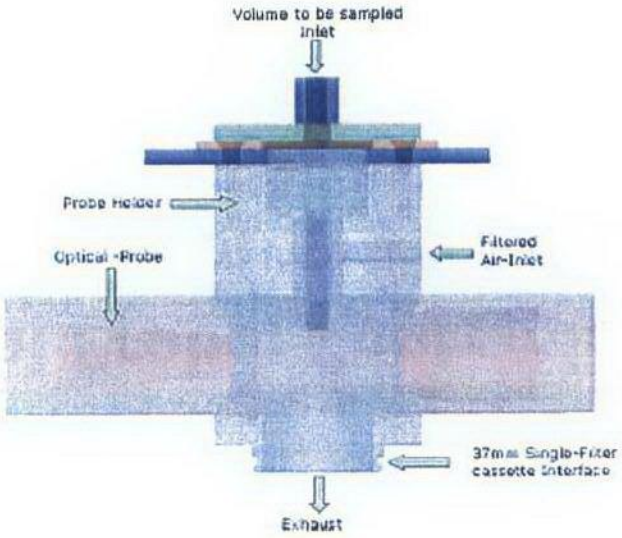


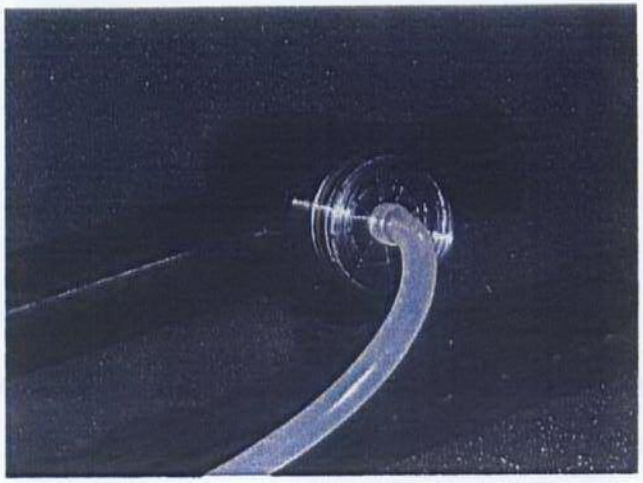
Optical Probe: Contaminated air

When the probe is subjected to aerosol particulate within the sampling chamber the detector will measure the forward light scattered within the sampling chamber. The optical lenses will focus the energy scattered on to the active area of the photo diode the light energy will be converted to an electric current equivalent to the amount of forward scatter within the sampling chamber. The current generated by the photodiode is proportional to light scatter (linear).



Gravimetric Filter Holder





The gravimetric filter holder assembly shown is for **continues 24/7 air monitoring** and interfaces to a 37mm single filter cassette holder for gravimetric samples, The Gravimetric filter holder also ensures that the sampling chamber within the optical probe is kept clean by continuously providing a clean sheath of air around the volume being sampled within the sampling chamber.

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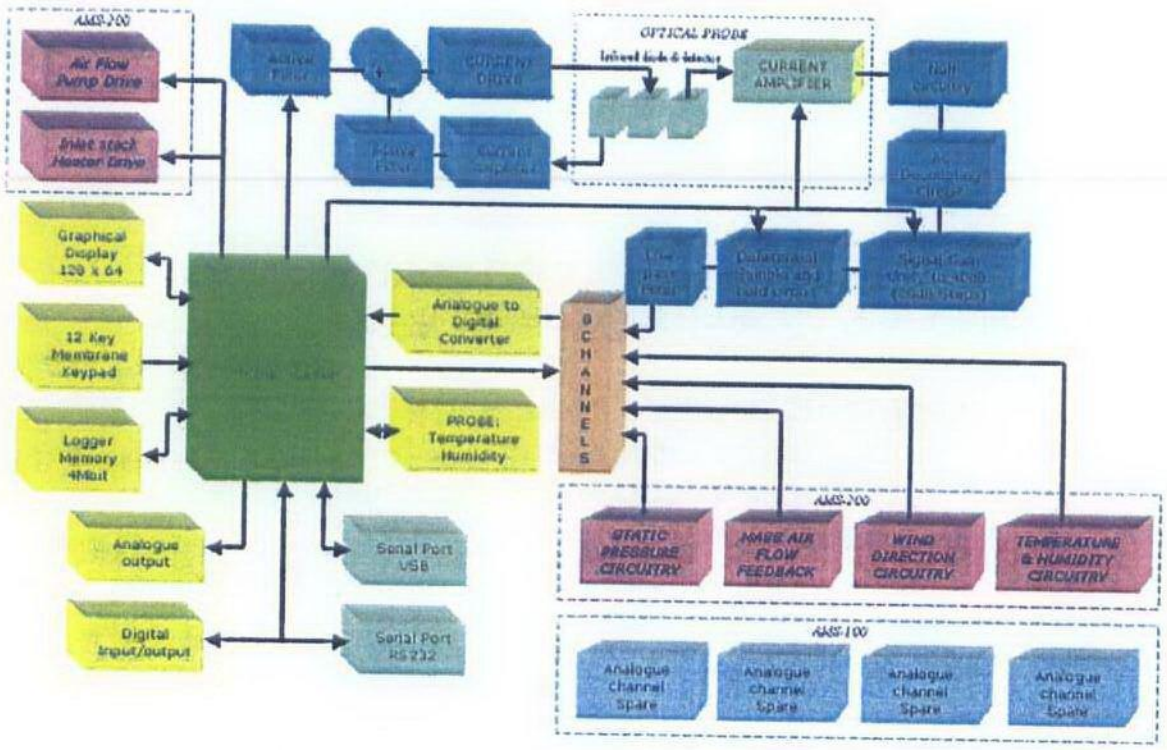
Block Diagram of AQ-Pack AMS



Continuous Particulate Monitor for Indoor Air Quality or Workplace Surveys

EPA Designation: None

Principle of Operation: Near Forward Light Scatter (6° to 23°)

Downloading: RS232 and Data Software

Support: Biontech Environmental Service Department

Calibration Procedure:

HEPA Filter –Zero Reference
Reference Filter- Span Calibration
Dynamic Dust introduced in Lab
Gravimetric Filter Comparison in Field

Verification: Flowrate, Zero, Span, Gravimetric Site Calibration
Maintenance: Lenses – Recal Zero and Span before use

BIONTECH LTD (UK)

Summary

- Proven continuous monitor technology
- Comparable to gravimetric sampling
- Wide measurement range with consistent results
- Price and performance competitive
- Temperature and Humidity Probe

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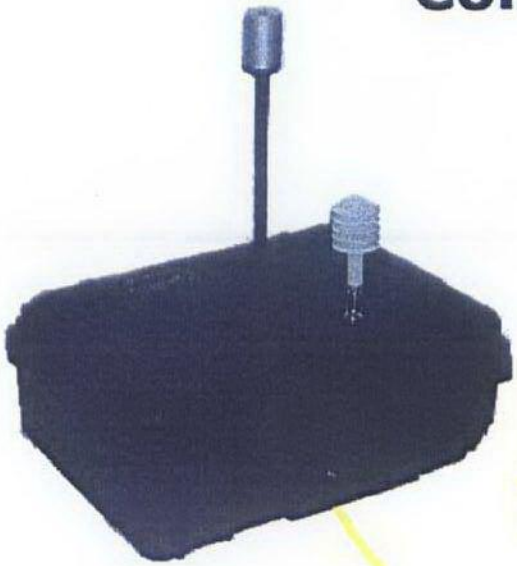

Contact us:

Biontech ltd

Unit 5 Horwood Court,
Bilton road,
Milton Keynes,
MK1 1RD. England

T: +44(0)1908 277233
F: +44(0)1908 644055
M: +44(0)7952 773371

E-mail: info@biontechgroup.com

H SMITH
DEMOLITION ENGINEERS

ENVIRONMENTAL NOISE AND VIBRATION MONITORING PROPOSALS

FOR

NORTH EAST QUADRANT
REGENTS PLACE , LONDON NW1 3JL

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ents

Noise Monitoring

Vibration Monitoring

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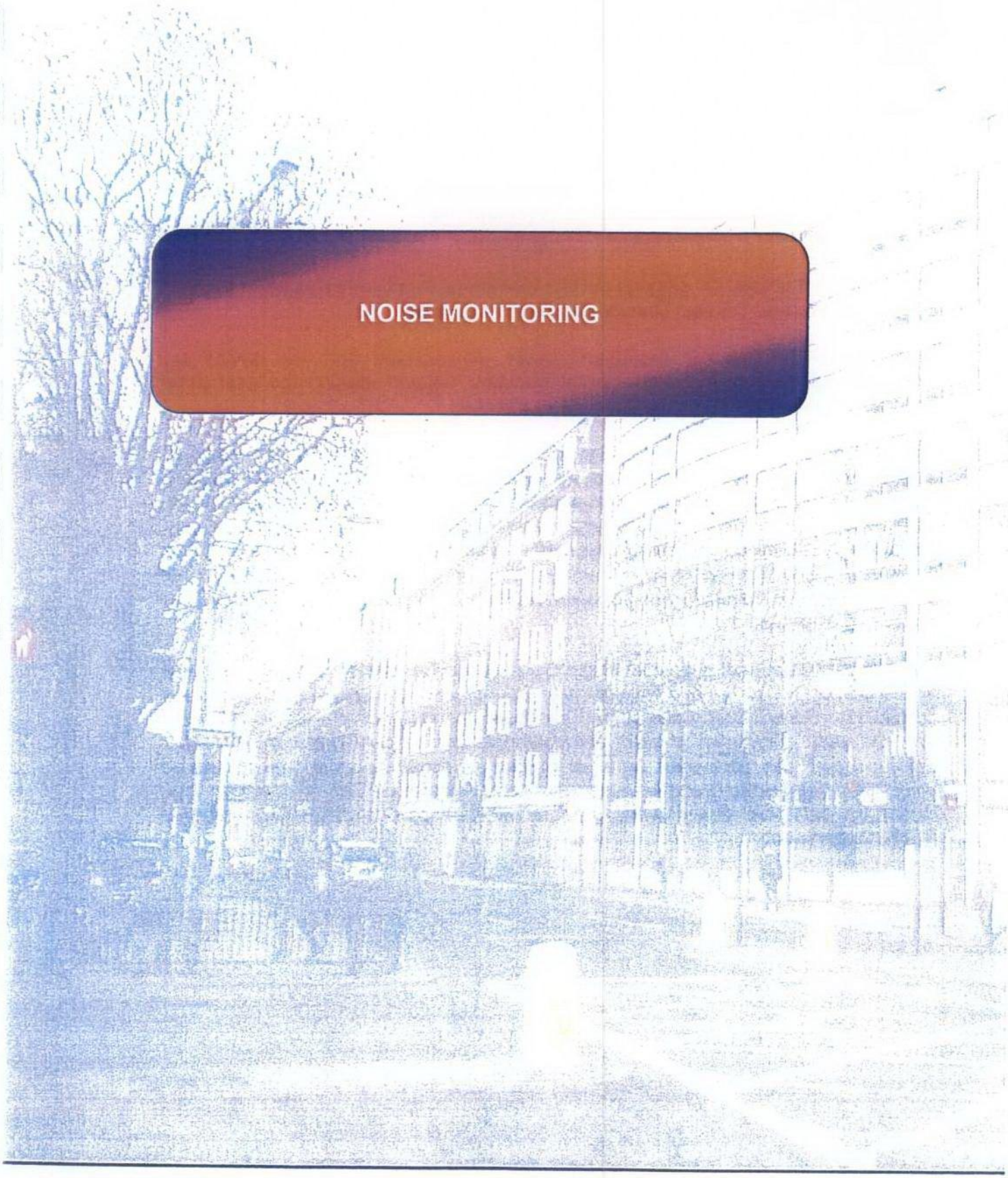

NOISE MONITORING

Noise Monitoring

Noise monitoring will be carried out at the positions identified on the accompanying plan. The duration of the monitoring would be 5 minutes in each location. Monitoring to be carried out weekly for standard operations on site during normal working periods.

Additional monitoring to be carried out for:

- any proposed noisy task
- where the shielding affect of the building may have been significantly altered
- in response to concerns of the management team
- in response to concerns raised by neighbours

The equipment utilised for carrying out the monitoring is a Cirrus Research CR800A Integrating Averaging Sound Level Meter. Details attached.

Readings will be taken in broadband mode, downloaded from the device and compiled into a standard environmental monitoring report utilising the deaf defier software provided by the manufacturer. See attached.

Site working hours are 08:00 to 18:00 Monday to Friday and 08:00 to 13:00 on Saturday with no working on Sundays or Bank Holidays. Within the site working hours on Monday to Friday are quiet working times which are between 10:00 and 12:00 and 14:00 to 16:00. These times are to ensure that the sites neighbours (residents and businesses) are guaranteed 4 hours free of noise disturbance from our site activities. The company will further liaise with it's neighbours to ensure that good relations are maintained and accommodate any and all reasonable requests as to work times and methods.

The company is a keen supporter of the Considerate Contractors Scheme operated by the Corporation of London, Westminster Council and Nationally in the form of the Considerate Constructors Scheme and has been the recipient of numerous awards over the years. Deliveries of plant and materials will be carried out within normal working hours. Any deliveries required outside of these hours will be requested utilising the Site Hours Variation Request Sheet – Form H. Deliveries will only be carried out outside of normal working hours with the approval of the Environmental Health Department.

Noise levels from our site activities will be monitored to ensure that hearing protection for our operatives is issued and worn at appropriate levels and that hearing protection zones are created where necessary. A band analysis of the noise levels will ensure that hearing protection with appropriate characteristics is used. Noise levels and action levels under current regulations are: -

- 80dB(A) First action level. Hearing protection made available
- 85dB(A) Second action level. Hearing protection zones and enforcement of wearing of hearing protection.
- Additionally operatives should not be exposed to noise levels above 87dB(A) averaged over the working day.

Possible noisy activities include: -

- Loading of skips (77.4dB(A) estimated at source)
- Use of pulverisers (87 dB(A) estimated at source)
- Chuting of demolition arisings (as loading skips)

Noise readings will be taken of the above operations and they will be carried out outside of quiet working hours. The use of crushers/muncher attachments will be utilised wherever possible to minimise the noise levels created. These attachments will however require the use of larger excavators to utilise them effectively. Noise levels will be reduced through the use of internal well holes and the screening effect of the existing building initially.

Acceptable noise limits may vary according to the characteristics of any noise created, baseline noise levels and nature and duration of works. BS5228 suggests a noise limit of 75dBin a working day. Utilising best practical means the noise levels during noisy periods should lie in the region of 70-80dB LAeq at the boundary. Our noise monitoring to date has demonstrated that this is being achieved.

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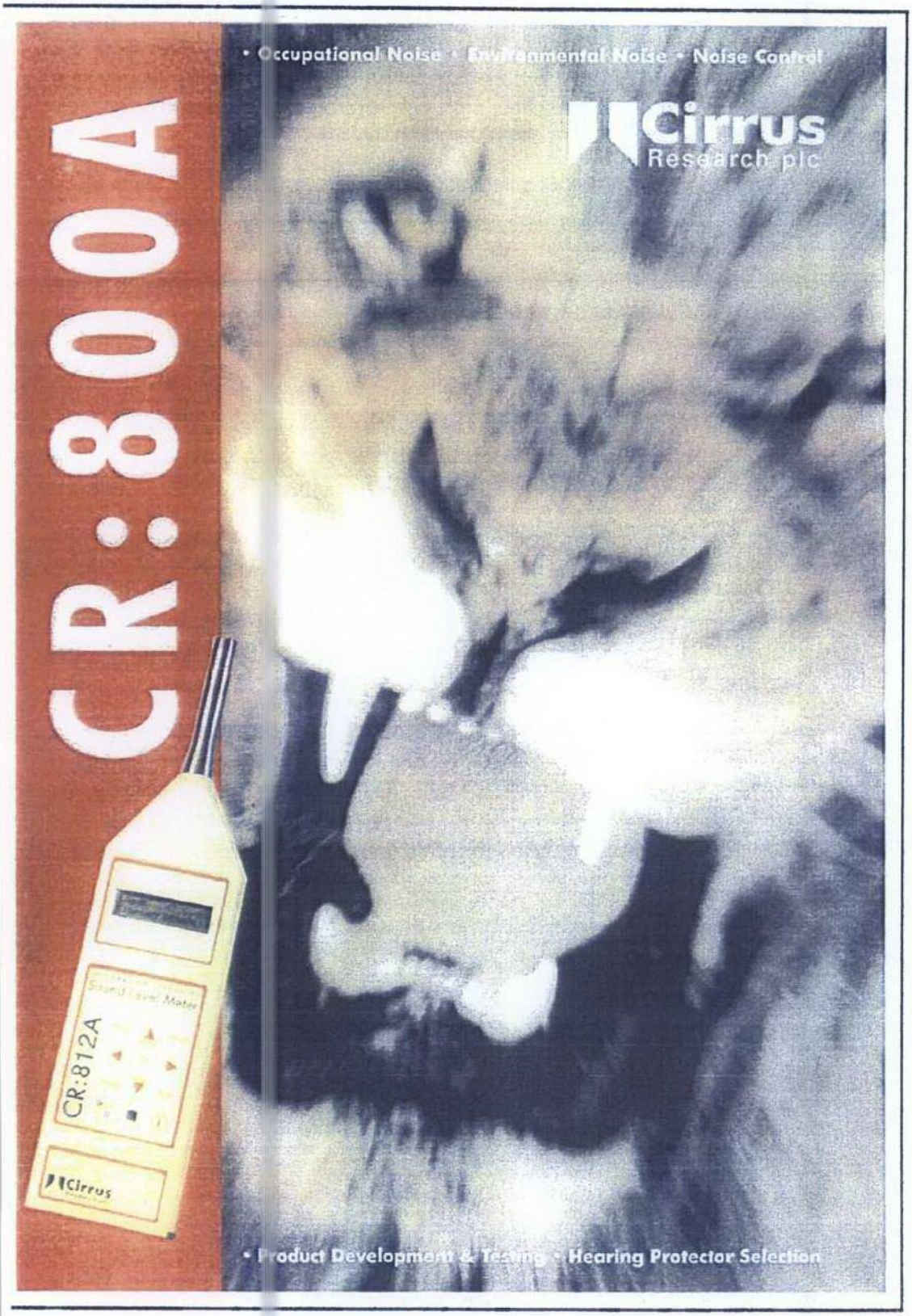

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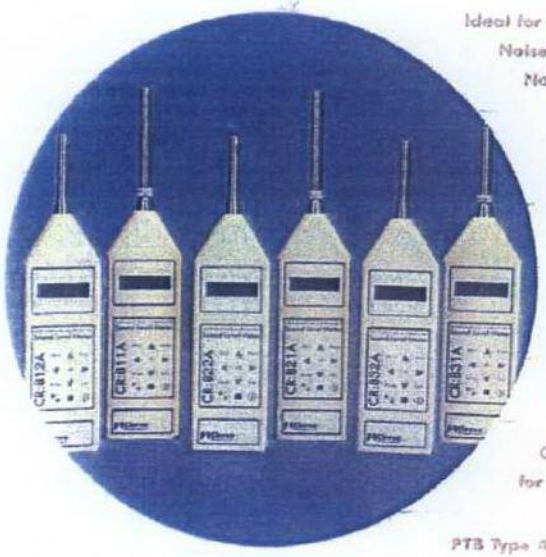

Ideal for Noise at Work Assessments, Noise Control and Environmental Noise Measurements

Optional 1:1 and 1:3 Octave Band Filters for Frequency Analysis

Type 1 and Type 2 Accuracy

Data Logging of measured parameters

Full measurement kits available

Outdoor Measurement Kits available for Environmental Measurements

PTB Type Approval

The CR:800A Series is a range of high performance Sound Level Meters that provide the functions and features demanded by modern measurement standards and guidelines, while being designed specifically for ease of use.

The CR:800A Series comprises 6 instruments, each providing different functions and features, from the basic CR:812A Type 2 Data Logging Sound Level Meter to the CR:831A Type 1 instrument with 1:1 and 1:3 Octave Band filters. All versions provide the same functions as the basic instruments.

The menu-driven operation allows quick access to the commonly used functions, while allowing more complex operations to be used when required. The instrument stores the last set-up, allowing the user to repeat measurements without having to reset the unit.

A range of accessories is available to complement the CR:800A Series including outdoor measurement kits, power supplies, microphone extension cables and software.

The entire range of CR:800A Series instruments has PTB Type Approval for Type 2 or Type 1 performance where appropriate.

CR:800A