

JUSTIFICATION FOR NON-COMPETITIVE PROCUREMENT

COMPLETE THIS SECTION IF NEW CONTRACT(S)

For contract(s) in this request, answer applicable questions in each of the 4 major subject areas below in accordance with the Instructions for Preparation of Non-Competitive Procurement Form on the reverse side.

Request that negotiations be conducted only with CANBERRA Industries, Inc. for the product and/or services described herein.
(Name of Person or Firm)

This is a request for: X (One-Time Contract Per Requisition # 25165, copy attached) or Term Agreement or Delegate Agency (Check one). If Delegate Agency, this request is for "blanket approval" of all contracts within the _____ (Attach List) Pre-Assigned Specification No. _____
(Program Name) Pre-Assigned Contract No. _____

COMPLETE THIS SECTION IF AMENDMENT OR MODIFICATION TO CONTRACT

Describe in detail the change in terms of dollars, time period, scope of services, etc., is relationship to the original contract and the specific reasons for the change. Indicate both the original and the adjusted contract amount and/or expiration date with this change, as applicable. Attach copy of all supporting documents. Request approval for a contract amendment or modification to the following:

Contract #: _____ Company, or Agency Name: _____

Specification #: _____ Contract or Program Description: _____
Mod #: _____ (Attach List, if multiple)

Karen Sanger 745-4196 Karen Sanger Fire 1/26/06
Originator Name Telephone Signature Department Date

Indicate **SEE ATTACHED** in each box below if additional space needed:

PROCUREMENT HISTORY

- 1) Radiation detector that detects Alpha, Beta and Gamma radiation. Purchase for this equipment has been discussed for past year. CFD-O'Hare initiated the information on this product to CFD-HazMat and was directed to "hold-off" until the State HazMat decides what they are going to purchase, so that we would be using the same equipment as other agencies in the State. Now they have decided and now we would like to move forward with this purchase.
- 2) First time.
- 3) Canberra is the only company that makes these detection devices.
- 4) CFD HazMat and the State of Illinois in contacting various vendors in this industry it has been verified that this is the only company that makes a product of this size and capability.
- 5) This is a one time purchase and sufficient quantity is being requested to last approximately five years.
- 6) N/A

ESTIMATED COST

- 1) \$146,575. - 005-0740-0854005-0340-220340 \$11,575, 005-0100-0594122-0342-220342-0100 \$10,000 and 005-0M01-0592005-0400-220400-0100-05CM32 \$125,000.
- 2) N/A
- 3) Current price per quote (see attached).
- 4) N/A
- 5) The vendor was contacted and quantity discount pricing was requested.

SCHEDULE REQUIREMENTS

- 1) N/A
- 2) N/A
- 3) Delivery is requested prior to February 28, 2006.
- 4) N/A

() EXCLUSIVE OR UNIQUE CAPABILITY

- 1) N/A
- 2) Yes. They do not deal through independent distributors.
- 3) N/A
- 4) N/A
- 5) N/A
- 6) N/A
- 7) Mini-Radiac Personal Radition Monitor-US Patent #4,605,859 and MCB2-Alpha/Beta/Gamma Contamination Meter - US Patent # pending.
- 8) Yes, this department will be maintaining and repairing this equipment internally.

() OTHER

- 1) (SEE ATTACHED DOCUMENTATION)
- 2) N/A

APPROVED BY:



DEPARTMENT HEAD
OR DESIGNEE

31 JAN 06

DATE

BOARD CHAIRPERSON

DATE



January 11, 2006

To Whom It May Concern:

Please be advised that Canberra Industries, Inc. is the sole manufacturer of the UltraRadiac (formerly called MiniRadiac) Personal Radiation Monitor and the MCB2 Contamination Monitor. These units have been specifically designed to be used by first responders and the conditions they may encounter. Canberra maintains its own sales force and does not deal through any contracted distributors. All orders for these products are handled through corporate headquarters in Meriden, CT. The units are manufactured at Canberra owned and operated facilities.

Thank you for your interest in Canberra nuclear instrumentation. I hope this information is sufficient to justify the purchase. Complete specifications for the unit can be found at our website canberra.com. Should you have additional questions, please contact me.

Sincerely Yours,

Clayton Seekins

Clayton Seekins
Sales Support Specialist
Canberra Industries, Inc.
800 Research Parkway
Meriden, CT 06492
203-639-2560 V.
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cseekins@canberra.com

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Zig Ditzig

Siegfried Ditzig
Midwestern System Account Manager
Canberra Industries, Inc.
Ph: 440-878-0888
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sditzig@canberra.com

A CANBERRA

Features

- Personal radiation monitor designed for the needs of first responders
- Measures and displays radiation dose rate and total dose
- Presettable two-level audio and visual alarms (vibrating alarm optional)
- Designed to operate in extremes of temperature, shock, humidity, dust, immersion and radiation
- Large, easy-to-read backlit LCD display
- Intuitive six button user interface
- Operable/readable by personnel in fire fighting or HAZMAT protective gear
- Uses standard AAA batteries
- Ultra-small size (10.5 in.³) and weight (9.5 oz)
- Low life cycle costs due to calibration stability and automatic self calibration
- Patented* "Time-to-Count" technology for wider dynamic range
- Data logging capability to 300 points
- "Stay time" display shows time remaining to dose alarm
- Source finder mode
- Derived from military qualified AN/UDR-13 Radiac Set

*US Patent # 4,605,879

Mini-Radiac Personal Radiation Monitor

Description

The potential threat of a radiological terrorism incident requires that first responders are equipped with a radiation monitor that is designed to address the radiation hazards they may face.

Canberra's Mini-Radiac is the perfect unit for firefighters, HAZMAT teams, paramedics and other first responders. It offers the small size and light weight needed to avoid interference with the critical work of first responders while providing continually updated information to the wearer.

Most electronic dosimeters on the market were intended for laboratory use, and not for the rugged environments that first responders may encounter. Canberra's Mini-Radiac – based on a US Military design – is a small, rugged, simple to operate radiation monitor that displays both the radiation levels and the total dose that is received. A large, backlit LCD display ensures that the unit can be read in any light conditions. Alarms are announced by a flashing display and loud audible signal (and optionally, vibration of the unit itself), when user-set dose rate or total dose alarm levels are exceeded.

There are two separate alarm levels for both dose rate and total dose. The first alarm would generally be set at a level somewhat above natural background to alert the wearer that radiation is present. The second would then be set at a higher level, indicating a significant hazard that requires action. The Mini-Radiac also has a unique "stay time" feature that shows the wearer how much time (at the current dose rate) he/she can remain in place before a high dose alarm is reached.



Phone contact information

Benelux/Denmark (32) 2 481 85 30 • Canada 905-660-5373 • Central Europe +43 (0)2230 37000 • France (33) 1 39 48 57 70 • Germany (49) 6142 73820
Japan 81-3-5844-2881 • Russia (7-095) 429-6577 • United Kingdom (44) 1225 838333 • United States (1) 203-238-2351

For other international representative offices, visit our Web Site: <http://www.canberra.com> or contact the Canberra U.S.A. office.

C10351 6/03 Printed in U.S.A.

Mini-Radiac Personal Radiation Monitor

The unit is designed to withstand extreme environmental hazards of temperature, shock, humidity, dust, immersion and high radiation fields. The extreme ruggedness of the design has been time tested - over 30 000 of the military version have been shipped world-wide. This is critical for the first responder operating in the hostile conditions of a disaster site!

When used with a host computer, the optical RS-232 port of the Mini-Radiac enables real time data to be provided to the computer such that dose rate mapping or iso-dose curves can be generated.

Personnel Dose Management



Utilizing the included infrared RS-232 port and the equipment's significant storage capability, the Mini-Radiac can greatly assist in the

efficient dose management of personnel in field situations. The serial numbers of the users may be stored in the unit, then upon use and possible exposure the total accumulated daily or weekly dose can be "read" by a computer and with minimal operator attendance, assigned to the user's Radiation Dose file. Various safeguards (such as control key function restrictions) against accidental erasing of accumulated dose or erroneous setting of alarm levels can be installed by computer through the infrared port.

Specifications

FEATURES

- **DOSE RATE AND DOSE** - 1.0 μ R/hr to 500 R/hr (dose rate) and 0.1 μ R to 999 R (total dose); models reading in sieverts or grays are also available.
- **PRESETTABLE AUDIBLE AND VISUAL ALARMS** - User-defined and -set dose and dose rate alarms.
- **INITIALIZATION TIME** - Operational in less than 5 seconds.



- **SETUP TIME** - Less than one minute for all checks and alarms.
- **ACCURACY** - $\pm 15\%$ over the entire dynamic range.
- **DATA RECORDING** - Local data logging to 300 data points. Data downloadable via optical (IR) communications port.
- **SELF MONITORING** - Continual self-monitoring for the instrument's state of health.
- **CASE** - Die-cast aluminum; available in black, yellow or custom colors.
- **CIRCUIT PROTECTION** - Nuclear and electro magnetic pulse (EMP) hardened.
- **EMI SUSCEPTIBILITY** - Will not be affected, or cause other equipment to be affected, by its use.
- **OPERABLE AND READABLE** - By persons wearing protective clothing.

DETECTOR

- **DETECTOR** - GM tube.
- **GAMMA ENERGY DEPENDENCE** - $\pm 20\%$, 80 keV to 3 MeV.
- **TOTAL (CUMULATIVE) DOSE READ OUT** - Will not be erased when read; resettable to zero as desired.
- **RESPONSE TIME** - Achieves 90% of final reading in four seconds; returns to background within four seconds; updates in two seconds.

DISPLAY

- **LCD** - Readable at 3 ft (1 m); updated every two seconds; can be backlit for night use.
- **UNITS** - Provides data in units of μ R, mR, R, μ R/hr, mR/hr and R/hr; models reading in sieverts or grays are also available.

ALARMS

- **SELECTABLE ALARMS** - Has selectable Visual and Audible indicators for day or night use. Alarm levels are settable over entire dynamic range.
- **ALARM TYPES** - Alarm on dose rate and total cumulative dose.
- **ALARM LEVELS** - Two alarm levels available for each type to indicate minor or severe hazards.
- **AUDIBLE ALARM** - 90 dBA at 10 in. (250 mm).
- **OPTIONAL VIBRATION ALARM.**

POWER

- **BATTERIES** - Four AAA 1.5 V alkaline batteries.
- **MINIMUM BATTERY LIFE** - 150 hr during continuous monitoring (approximately one month at normal operating duty cycles) and 1500 hr during inactive (sleep) mode.
- **LOW BATTERY INDICATION** - 10 hours of battery life remaining allows display of remaining time.

Mini-Radiac Personal Radiation Monitor

ENVIRONMENTAL PARAMETERS

- OPERATING TEMPERATURE –
–59.8 °F to 141 °F (–51 °C to +61 °C).
- STORAGE/TRANSPORT TEMPERATURE –
–76 °F to 158 °F (–60 °C to +70 °C).
- HUMIDITY – 0–100%.
- WATER IMMERSION (including salt water) –
3 ft (1 m) for at least 2 hr.
- SAND/DUST – Operates in winds with exposure
to fine dust and sand particles.
- FUNGUS – Built from fungus resistant materials.
- VIBRATION AND SHOCK – Withstands vibration
associated with transport and shocks of dropping while
in use.
- ALTITUDE – 40 000 ft (12 000 m).

PHYSICAL

- DIMENSIONS – 3.96 x 2.60 x 1.14 in.
(100 x 66 x 29 mm).
- WEIGHT – 9.5 oz (275 g).
- VOLUME – 11.7 in.³ (192 cc).

QUALIFICATION TESTING

The Mini-Radiac is a commercial version of the Models AN/UDR-13 and AN/UDR-14 Radiac Set which were designed and qualified to meet the requirements of MIL-STD-810E. Details available upon request.

ORDERING INFORMATION

- Model MRADxyz Mini-Radiac Radiation Monitor.
Where:
x: 1 = yellow case; 2 = black case.
y: 0 = no vibration alarm; 1 = vibration alarm.
z: 1 = sievert units; 2 = gray units; 3 = roentgen units.



A CANBERRA

Features

- Detection, localization and quantification of radioactive alpha, beta, gamma or X-ray contamination
- Very easy-to-use, lightweight and stand-alone
- Geiger Mueller detector with a 15 cm² and 2.0 mg/cm² end window
- Audible chirper that is proportional to contamination level
- LCD display with backlight
- Three models available: c/s, Bq_m or CPM
- Compliant with IEC 60325:2002-06
- Efficiency over 2%:
 - ¹⁴C: 17%
 - ⁹⁰Sr/⁹⁰Y: 50%
 - ⁶⁰Co: 32%
 - ²⁴¹Am: 35%

MCB2 – Alpha/Beta/Gamma Contamination Meter

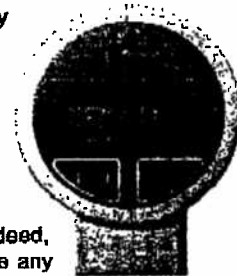
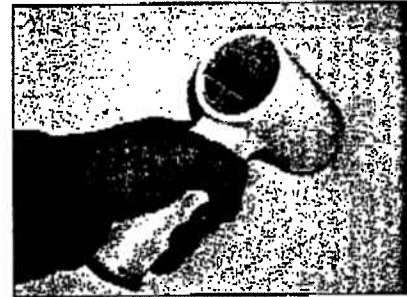
Description

MCB2 is a stand-alone meter designed for detecting, locating and quantifying radioactive alpha, beta, gamma and X-ray contaminations.

MCB2 consists of an ergonomic small size and lightweight ABS housing that has a gun-style shape with a pancake detector at the front. This design guarantees hours of use without feeling any pain or wrist injury and helps to correctly point the area to meter without any major risk of contamination on user's hands.

MCB2 fits comfortably in either the right or left hand and a wrist strap secures it from any accidental drop. MCB2 is delivered with a metallic cover that protects the entrance grid and the thin detector window. This cover is thick enough to discriminate alpha/beta from gamma particles. Indeed, when the cover is in place, MCB2 will not measure any alpha or beta, only gamma.

A compartment that is accessible via a trap door accepts two off-the-shelf AA-LR6 alkaline batteries for 80 hours of operation. A battery sign is displayed when the battery life is too low.



A specific count-rate algorithm ensures a fast response time to low contamination with a variable averaging time.

MCB2 is driven by two buttons: power and backlight which makes it very easy-to-use and always available even for non-specialized users.

MCB2 can be delivered with a display in Bq equivalent (isotope to be defined), in c/s or in CPM.

Phone contact information

BeneLux/Denmark (32) 2 481 85 30 • Canada 905-860-5373 • Central Europe +43 (0)2230 37000 • France (33) 1 39 48 57 70 • Germany (49) 8142 73820
Japan 81-3-5844-2881 • Russia (7-098) 429-8577 • United Kingdom (44) 1235 838333 • United States (1) 203-238-2351

For other international representative offices, visit our web site: <http://www.canberra.com> or contact the Canberra U.S.A. office.

C26177 5/05 Printed in U.S.A.

MCB2 – Alpha/Beta/Gamma Contamination Meter

Specifications

NUCLEAR

- **UNIT TO DISPLAY** – Depending on the model, c/s or Bq_{eq} or CPM.
- **EMITTER** – Alpha, beta and gamma.
- **DETECTOR** – Geiger Mueller with halogen quench thin mica end window 1.8 to 2.0 mg/cm².
- **DETECTION AREA** – 15.5 cm².
- **PROTECTION GRID TRANSPARENCY** – 78%.
- **MEASUREMENT RANGE** –
 - MCB2/CPS – 1 to 9999 c/s (display: 0.2 to 9999 c/s).
 - MCB2/BQ – 1 to 9999 Bq_{eq} (display: 1 to 9999 Bq_{eq}).
 - MCB2/CPM – 0.06 to 600 kCPM (display: 0.001 to 600 kCPM).
 - Saturation – 9999 blinking.
- **GAMMA SENSITIVITY FOR ¹³⁷Cs** – 6.4 c/s per μGy/h (3840 CPM per mR/h).
- **RESPONSE TIME** – 5 s below 10 c/s, 2 s between 10 and 100 c/s, 1 s above 100 c/s.
- **BACKGROUND** – Ambient ≤100 nSv/h (10 μR/h); 1.2 c/s (typical ≤1.0 c/s).

ERGONOMIC

- **DISPLAY** – LCD display with backlight (auto-off after two minutes).
- **AUDIO** – Chirper that is proportional to count-rate level: 80 dB at 50 cm.
- **KEYBOARD** – Two buttons (power and backlight).
- Removable wrist strap.

ELECTRICAL

- **POWER** – Two alkaline R6/AA/UM3 batteries, 1.5 V/2.80 Ah.
- **BATTERY LIFE** – >80 hours with a measurement <15 c/s without backlight.
- A battery sign is displayed when voltage is below 1.9 V.

MECHANICAL

- **HOUSING** – ABS polycarbonate molded.
- **DIMENSIONS** – Detector cylinder diameter: 60 mm (2.4 in.), length 110 mm (4.3 in.).
- **HEIGHT** – 170 mm (6.7 in.).
- **HANDLE SECTION** – 48 x 30 mm (1.9 x 1.2 in.).
- **WEIGHT** – 330 g (11.6 oz) with batteries, metallic cover and wrist strap.

ENVIRONMENT

- **TEMPERATURE** – –10 °C to +50 °C (+14 °F to +122 °F).
- **RELATIVE HUMIDITY** – 40% to 85% at 35 °C (95 °F).
- **CLEANING** – Housing easy to decontaminate.

NORM

- CEM – Conform.
- IEC – Meets IEC 60325:2002-06 standard.
- CE – Meets CE requirements.

ORDERING REFERENCES

- MCB2/CPS – EM77021.
- MCB2/BQ – EM75871.
- MCB2/CPM – EM77022.
- Belt pouch for MCB2 – EM78459.



Detection efficiencies and MDAs with 100 cm² ISO 8769 sources in contact with instrument.

Nuclide	Emitter	Typical efficiency over 2 σ (%)	Guaranteed efficiency over 2 σ (%)	Response to activity (c/s)/Bq	MDA (Bq)
¹⁴ C	Beta	17	15	0.07	12
⁶⁰ Co	Beta-Gamma	32	29	0.16	4.9
³⁶ Cl	Beta	47	42	0.30	2.6
⁹⁰ Sr+ ⁹⁰ Y	Beta	50	45	0.31	2.5
²⁴¹ Am	Alpha	35	31	0.16	4.7
²³⁹ Pu	Alpha	29	26	0.14	5.5

MDA – Background = 0.5 c/s measured during 100 s in a 0.1 μGy/h ambience.

Measuring time on source = 10 s.

STATISTIC – False alarm = 5% and non-detection = 5%.



**CITY OF CHICAGO
 PURCHASE REQUISITION**

Copy (Department)

DELIVER TO: 336 FINANCE AND FISCAL MANAGEMENT 10 W. 35TH STREET 14TH FLOOR CHICAGO, IL 60616	REQUISITION: 25165 PAGE: 1 DEPARTMENT: 59 - FIRE DEPARTMENT PREPARER: Karen L Sanger NEEDED: APPROVED: 1/19/2006
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REQUISITION DESCRIPTION

RADIATION MONITORS AND ACCESSORIES - SOLE SOURCE REQUEST
 SPECIFICATION NUMBER: 43407

*Vendor Code
 50098553*

COMMODITY INFORMATION

LINE	ITEM	QUANTITY	UOM	UNIT COST	TOTAL COST
1	4907101100 RADIATION MONITORS, NUCLEAR - MINI-RADIAC DETECTION DEVICE	280.00	Each	500.00	140,000.00

SUGGESTED VENDOR:

REQUESTED BY: Karen L Sanger

DIST	BFY	FUND	COST CTR	APPR	ACCNT	ACTV	PROJECT	RPT CAT	GENRL	FUTR	Dist. Amt.
1	005	0M01	0592005	0400	220400	0100	00000000	05CM32	00000	0000	125,000.00
2	005	0100	0594122	0340	220340	0200	00000000	000000	00000	0000	10,000.00
3	005	0740	0854005	0340	220340	0000	00000000	000000	00000	0000	5,000.00
LINE TOTAL:											140,000.00

LINE	ITEM	QUANTITY	UOM	UNIT COST	TOTAL COST
2	4907101105 RADIATION MONITORS, NUCLEAR - CALIBRATION DEVICE FOR MINI-RADIAC DETECTION DEVICE	1.00	Each	3,500.00	3,500.00

SUGGESTED VENDOR:

REQUESTED BY: Karen L Sanger

DIST	BFY	FUND	COST CTR	APPR	ACCNT	ACTV	PROJECT	RPT CAT	GENRL	FUTR	Dist. Amt.
1	005	0740	0854005	0340	220340	0000	00000000	000000	00000	0000	3,500.00
LINE TOTAL:											3,500.00

LINE	ITEM	QUANTITY	UOM	UNIT COST	TOTAL COST
3	4907101110 RADIATION MONITORS, NUCLEAR - BELT CASE FOR MINI-RADIAC DETECTION DEVICE	5.00	Each	550.00	2,750.00

SUGGESTED VENDOR:

REQUESTED BY: Karen L Sanger

DIST	BFY	FUND	COST CTR	APPR	ACCNT	ACTV	PROJECT	RPT CAT	GENRL	FUTR	Dist. Amt.
1	005	0740	0854005	0340	220340	0000	00000000	000000	00000	0000	2,750.00
LINE TOTAL:											2,750.00

LINE	ITEM	QUANTITY	UOM	UNIT COST	TOTAL COST
4	4907101115 RADIATION MONITORS, NUCLEAR - HAND HELD HAZMAT ID EQUIPMENT FOR DETECTING ALPHA BATA GAMMA RADIATION	5.00	Each	45.00	225.00

SUGGESTED VENDOR:

REQUESTED BY: Karen L Sanger

DIST	BFY	FUND	COST CTR	APPR	ACCNT	ACTV	PROJECT	RPT CAT	GENRL	FUTR	Dist. Amt.
1	005	0740	0854005	0340	220340	0000	00000000	000000	00000	0000	225.00
LINE TOTAL:											225.00

Where a commodity is for a particular or unique use other than standard quality, grades, color, size or other characteristics, give details of how it will be and for what purpose. Requisitions prepared incorrectly will be returned to the using department.

**CITY OF CHICAGO
 PURCHASE REQUISITION**

Copy (Department)

DELIVER TO: 336 FINANCE AND FISCAL MANAGEMENT 10 W. 35TH STREET 14TH FLOOR CHICAGO, IL 60616	REQUISITION: 25165 PAGE: 2 DEPARTMENT: 59 - FIRE DEPARTMENT PREPARER: Karen L Sanger NEEDED: APPROVED: 1/19/2006
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REQUISITION DESCRIPTION

RADIATION MONITORS AND ACCESSORIES - SOLE SOURCE REQUEST
 SPECIFICATION NUMBER: 43407

COMMODITY INFORMATION

LINE	ITEM	QUANTITY	UOM	UNIT COST	TOTAL COST
5	6995005100 FREIGHT/SHIPPING - FREIGHT CHARGES	1.00	Each	100.00	100.00

SUGGESTED VENDOR:

REQUESTED BY: Karen L Sanger

DIST	BFY	FUND	COST CTR	APPR	ACCNT	ACTV	PROJECT	RPT CAT	GENRL	FUTR	Dist. Amt.
1	005	0740	0854005	0340	220340	0000	00000000	000000	00000	0000	100.00
LINE TOTAL:											100.00

REQUISITION TOTAL: 146,575.00

Canberra Industries
800 Research Parkway, Meriden, CT 06450

Quotation

Customer: Chicago Fire Department
 O'hare Airport
 Chicago , ILL
 Attn: Chief Mike Callahan

Page 1
 DATE 01/11/06
 Quote effective for: 30 Days
 F.O.B.: Meriden, CT
 Terms: Net 30 Days w/app'd credit

Phone: 773-686-4814

Delivery (Est): 30 - 60 Days, ARO

Our Ref: SD01110601

ITEM No.	MODEL No.	DESCRIPTION	QTY	Unit Price in U.S. \$	Total Price in U.S. \$
1	MRAD113	MiniRadiac - Personal Radiation Monitor - Unit provided in Yellow* - Audible, Visual, & Vibrating Alarms - Roentgen Units NOTE: *Same units can be purchased in black using Model number MRAD213	280	\$500	\$140,000
2	FC-2	MiniRadiac (Field) Calibrator	1	\$3,500	\$3,500
3	EM77021	MCB2 Hand Held Contamination Monitor in CPS <small>[same unit available in (K)CPM use mod# EM77022]</small>	5	\$550	\$2,750
4	EM78459	MCB2 Case	5	\$45	\$225
5	MRAD-TRN	Interactive Training Video	1	\$495	no charge
6	S900C	Utility Software for MiniRadiac	1	\$500	no charge
7	EXT-1R	Infrared Communication Cable between PC and Software	1	\$150	no charge
Estimated Shipping Cost					\$100
TOTAL F.O.B. Meriden, Ct.					<u>\$146,575</u>

REPRESENTATIVE: Equipment Quoted for Domestic U.S Only

Siegfried Ditzig
 Canberra Industries
 Tel.: (440) 878-0888 (Office)

Quoted By: Sig Ditzig
 Sig Ditzig