

UNIVERSITY OF DELAWARE  
NEWARK, DELAWARE  
19716

DEPARTMENT OF PUBLIC SAFETY  
SAFETY DIVISION  
417 ACADEMY STREET  
PHONE: 302-451-8475

April 16, 1985

United States Nuclear Regulatory  
Commission  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs  
631 Park Avenue  
King of Prussia, Pa. 19406

Gentlemen:

RE: License number 07-01579-19  
Docket number 030-10925

The University of Delaware requests an amendment to the referenced  
license to allow the purchase and use of the following sealed sources:

CPN Model MC-3 Portaprobe  
Direct Readout Density/Moisture Surface Gauge  
Gamma Source: 10mCi Cs-137  
Neutron Source: 50mCi Am-241/Be

The device will be used on the University farm to make soil moisture  
determinations.

The manufacturers product information sheet is attached.

If I can be of assistance, please call.

Sincerely,

*Stuart W. Kline*

Stuart W. Kline  
Associate Director for Safety

SWK/bc

Attachment

RECEIVED BY LFMB	
Date...	4/29/85
Log...	Apr. 14 I
Sy...	Brown
Orig. To...	
Action Compl.	5/3/85

"OFFICIAL RECORD COPY"

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REQ1 LIC30  
07-01579-19 PDR

ML10  
FEE EXEMPT

03709

APR 23 1985

*rough draft*

## CPN MODEL MC-3

### PORTAPROBE

#### DIRECT READOUT DENSITY/MOISTURE SURFACE GAGE

The CPN Corp. Model MC-3 provides fast accurate measurement of the density and moisture of soils and/or construction materials for compaction quality control. Complies with ASTM D2922, D2950, and D3017

EASY TO USE — Single screen display:  
Measured units of lbs/ft<sup>3</sup> and Mg/m<sup>3</sup>  
Percentage of maximum values  
Measurement figure of merit.

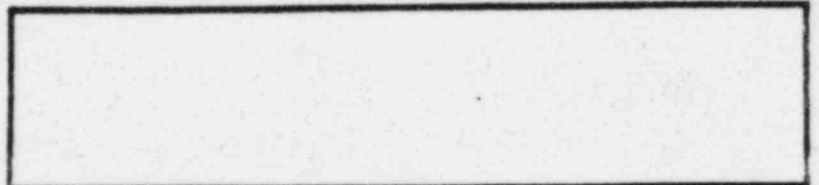
#### MAJOR FEATURES

- FULL-DIRECT-READOUT-----160 character liquid crystal display (8 lines by 20), displays on one screen data in direct engineering units including: pcf, Mg/m<sup>3</sup>, and counts per minute.
- PROGRAMMABLE-----Programmable: maximums (Proctor for soils and Marshall for asphalt).
- CALIBRATION-----Calibration coefficients can be enter from keyboard. Allows calibration on 6, 5, 3, and 2 block standards.
- DIRECT-SELECTION-----Keyboard selection of gage functions for counting, self test, calibration, and units selection.
- RUGGED-----Water and shock resistant.

For further information, call or write today:

**CPN CORP.**

130 South Buchanan Circle, Pacheco,  
California 94553 (415) 687-6472



## PERFORMANCE

FUNCTION-----Surface density/moisture  
                   measurements for compaction  
                   control of soil subbase and  
                   asphaltic concrete.  
 RANGE:Density-----70 to 170 lb/ft<sup>3</sup> (1.120 to 2.73)  
           Moisture-----0 to 40 (0 to 0.64)  
 PRECISION:BS/AC-----+/- 0.50 (0.008) one minute at  
                           125 pcf  
           Transmission---+/- 0.25 (0.004)  
           Moisture-----+/- 0.25 (0.004)  
 CHEMICAL-ERROR:BS-----+/- 1.00 (0.016)  
                   Trans-----+/- 0.75 (0.120)  
 ROUGHNESS:BS-----4.00 (0.064)  
           Trans-----0.50 (0.008)  
 COUNT-TIME-----Constant Precision or 15, 30  
                           seconds, 1, 2, or 4 minutes  
                           fixed time.  
 TEMP-----0 TO 60°C operating.  
 POWER-----Battery Pack of 8 ea welded AA  
                   NICADS.  
 BATTERY-LIFE-----500-1000 Charge discharge  
                           cycles.  
 CONSUMPTION-----10 mA avg. (allows more than  
                           3000 each 1/2 min counts).  
 RECHARGE-----14 hours at C/10 via wall  
                           charger.  
 DISPLAY-----160 character 5x7 dot matrix  
                   Liquid Crystal Display (8 line  
                   by 20 characters). Easily read-  
                   able in direct sunlight.  
 CALIBRATION-----User enterable coefficients.  
 UNITS-----User selectable: Mg/m<sup>3</sup>, pcf,  
                   and counts per minute.

## RADIOACTIVE

GAMMA SOURCE:	10 mCi Cesium-137
NEUTRON SOURCE:	50 mCi Americium-241/Be
ENCAPSULATION:	Double Sealed Capsule, CPN-131
SURFACE:	Less than 10 mRem/hr
SHIPPING:	Radioactive Material, Special Form, N.O.S., UN2974 Transport Index 0.1 YELLOW II Label USA DOT 7A, Type A
SPECIAL FORM	
APPROVAL:	USA/O150/S

## MECHANICAL

GAGE: Aluminum with epoxy paint  
or hard-anodize finish.  
-82,-81: 34#, 14"W x 19"D x 22"H  
(16), (356x483x560)  
-122,-121: 36#, 14"W x 19"D x 26"H  
(17), (356x483x660)  
CARRYING & SHIPPING High Density Polythelene.  
CASE: -82,-81: 80#, 25.6"W x 15.4"D x 16.1"H  
(35), (650x390x410)  
-122,-121: 82#, 29.5"W x 15.4"D x 16.1"H  
(40), (750x390x410)

## EQUIPMENT SUPPLIED

Gage	Sign Kit
Lock & 2 keys	Wipe Test Certificate
Plastic Shipping Case	Wipe Test Kit
Reference standard	Charger, 115/230 VAC
Guideplate/scrapper	Operator Manual
Drill pin	Internal factory calibration
Lubricant	

## FACTORY OPTIONS

MC-3-82 8 inch depth of measurement in 2 inch increments (-250)  
MC-3-81 8 inch depth of measurement in 1 inch increments (-225)  
MC-3-122 12 inch depth of measurement in 2 inch increments (-350)  
MC-3-121 12 inch depth of measurement in 1 inch increments (-325)

## ACCESSORIES

- 1) Campbell Hammer (impact type)
- 2) Hand computerr with calibration program
- 3) 12VDC Charger Cable with cigarette lighter connector, 6 ft
- 4) 12VDC Charger Cable with battery clips, 6 ft
- 5) Survey Meter (GM)
- 6) RS232C/DP25P upload cable, 6 ft
- 7) RS232C/DP25S upload cable, 6 ft
- 8) RS232C unterminated upload cable, 6 ft
- 9) RS232C connector only

An NRC or agreement state license is required for domestic use. Contact CPN Corp. for assistance in obtaining the operator training required for a license.

Warranty: one year materials and workmanship.  
( ) Indicates SI units of kg or mm.  
Specifications subject to change

**CPN** CORR

**MC-3**

Da:6 P 1:06 pcf  
Wet H2O Dry  
Dn 135.3 8.1 127.2  
Pr 0.52 1.5 2.02  
% 86.97 6.4 89.6  
MO 155.8 142.0

MAX PAR STD CAL MON

COUNT ☐  
LO BAT ☐  
CUTOUT ☐  
CHGE ☐

**ENTER**

**STEP**

**CLEAR**

**START**

**MAX**

7

**STD**

8

**MENU**

9

4

5

6

1

2

3

-

0

.

count



BETWEEN: William O. Miller, Chief  
License Fee Management Branch  
Office of Administration -

John E. Glenn, Chief  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION I

Fee Exempt

1. APPLICATION ATTACHED

Applicant/Licensee: University of Delaware

Application Dated: 4/16/85

Control No.: 03709

License No.: 07-01579-19

2. FEE ATTACHED

Amount: 0

Check No.: 0

3. COMMENTS

Signed Brenda P. Latchek

Date 4/24/85

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: EX 3M 1K 5A-No fee due

2. Correct Fee Paid. Application may be processed for:

Amendment ✓

Renewal                     

License                     

Signed Francis Brown

Date 4/30/85

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3/3/85