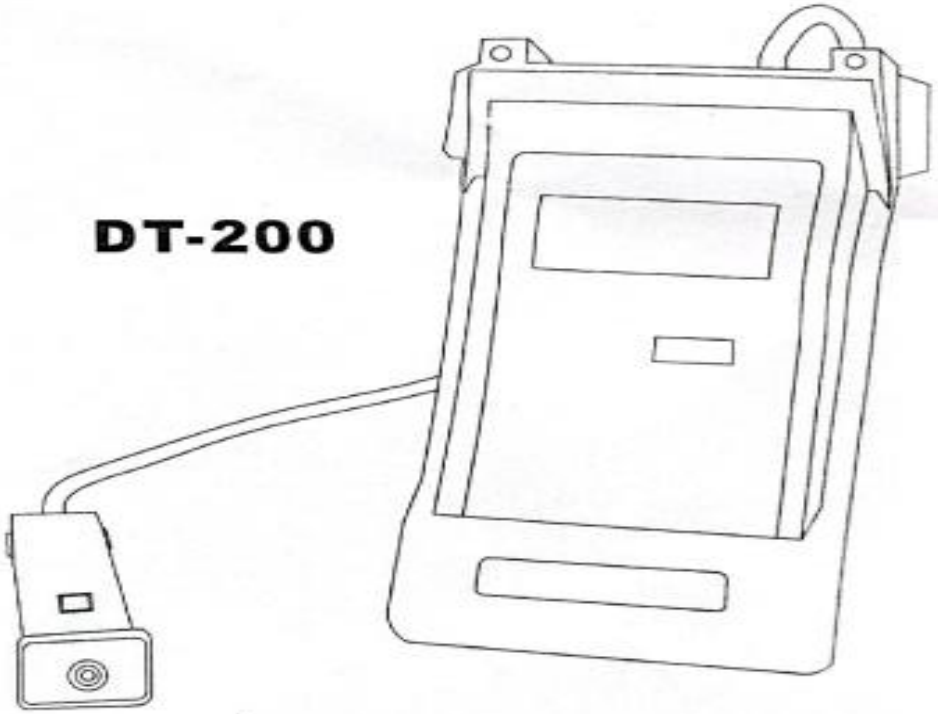
Separate Probe Densitometer

User's Manual

UCNDT®



DT-200

Wen Zhou Lu Cheng NDT Equipment Corp.

Technical Specifications:

Range:	650Cd/m² - 320 000 Cd/m² (5 000 Lux – 1 000 000 Lux)
Density:	0.00 – 5.00 D*
* We strongly suggest DT-200 work with FV series LED viewers. With FV-2008, the maximum density of DT-200 would be > 5.00D.	
Optical Aperture:	3mm diameter
Probe Temperature compensated	
Display:	4 digit LCD
Accuracy:	±0.03 D
Resolution:	0.01D
Repeatability:	0.02D
Detector:	Silicon photodiode
Power supply:	(AA/1.5V)x2-Alkaline Battery
Battery life:	1200 hours (Continuous duty, without illuminated)
Dimensions:	6.7"×3.5" ×2.4" (170mm × 90mm × 60mm)
Weight:	1.7 Pounds (800g)

LCNDT® Wen Zhou Lu Cheng NDT Equipment Corp.

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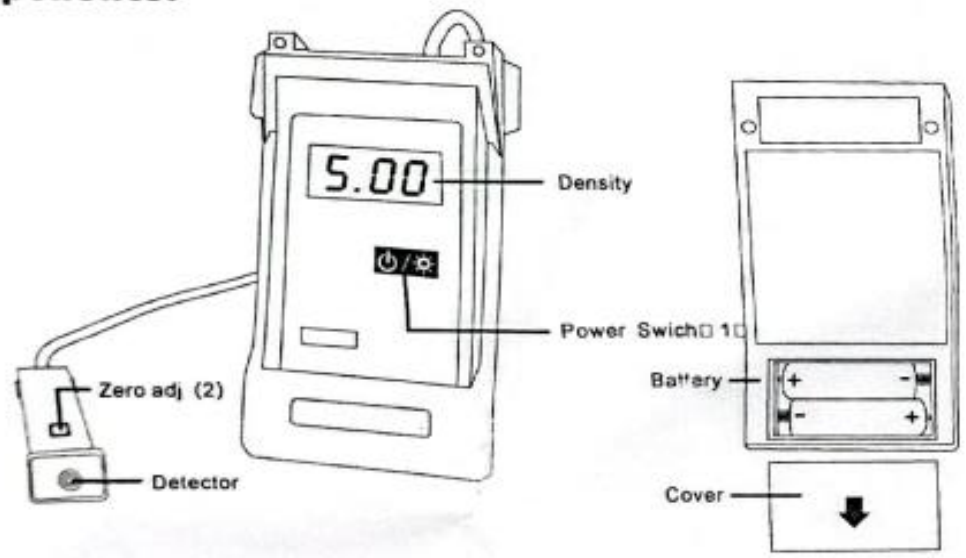
The DT-200 is a robust, easy to use, portable densitometer with separate robe for measuring the transmission density of x-ray film. The unit has been lesigned for using in one-site mobile darkrooms, laboratories and offices.

The operator simply places the film on the viewer (emulsion side up), places the robe on the film where the reading is required and the reading will appear on the 4 digit .CD screen with white light illuminated display. And a low battery warning indicator s provided on the digital display.

Components:



Preparation:

Make sure AA battery have been placed into battery compartment in the right polarity.

Measurement:

1. Long press the power switch(1) for more than 1 second until "-.--" appears which indicate waiting for Zeroing.
2. Place the probe of DT-200 on a film viewer. We strongly suggest work with LED film viewers, such as FV-2008, FV-2009, FV-2010 etc.
3. Keep the probe on the viewer, pressed down the Zero adj(2), keep it down until 0.00 indication appears, then release the Zero adj(2).
4. Place the area of the specimen that you want to measure, then put probe of DT-200 on the area of the specimen.
5. Digital reading shows density of the specimen.
6. Short Press of power switch(1), the back light will turn on or off.

Maintenance:

When "LO BAT" sign appears, replace battery. Be careful to insert them in the correct polarity

Program Mode: (carefully use it if it is really needed)

1. Turn off the DT-200.
2. Keep Zero adj(2) pressed down, then long press power switch(1), until "+000" appears, then release the Zero adj(2) and power switch. It means you have entered into Program Mode.
3. Short press the Zero adj(2), it will turn between "F0-F1-F2-F3-F0".
   a) F-0: Original data, no Curve Matching.
   b) F-1: Black and white film base (lithographic film)
   c) F-2: Blue film base(Industrial film)- Default option
   d) F-3: Domestic film
4. The factor will save automatically.

Most of cases, you do not need the function below, use it carefully.

5. Long press the Zero adj(2),. It will appear "+A:.0B"(A,B=0,1,2 ...or 9), then release the Zero adj(2).
6. Short press the Zero button, factor B will turn between 0,1,2, 3,...9,-9,-8,-7...-1,0.
7. Long press the Zero button, factor A will turn between 0,1,2, 3,...9,0, and save the previous factor B.
8. Increased one by one between -0.05 to 0.05, which will plus the measurement results.

Factor A	Valid Step range	Factor B
0	0 :0.1-0.5	-0.19 ~ +0.19
1	1 :0.5-1.0	-0.19 ~ +0.19
2	2 :1.0-1.5	-0.19 ~ +0.19
3	3 :1.5-2.0	-0.19 ~ +0.19
4	4 :2.0-2.5	-0.19 ~ +0.19
5	5 :2.5-3.0	-0.19 ~ +0.19
6	6 :3.0-3.5	-0.19 ~ +0.19
7	7 :3.5-4.0	-0.19 ~ +0.19
8	8 :4.0-4.5	-0.19 ~ +0.19
9	9 :4.5-5.0	-0.19 ~ +0.19

The calibration factor will be saved automatically, even power off or take off the battery. For example: you have your measurement result of certain specimen is 3.00D, but the certification of this spot is 3.03D. Δ=3.03-3.00=0.03, so you can choose 0.03 in the Program Mode, then you will have the calibrated results later.
For example:

Density in strip	Density we measured	Error
0.15	0.15	0.00
0.60	0.65	-0.05
1.60	1.55	+0.05

So we can set corresponding factor as below:

Factor NO.	Factor value
0	0.00 (default)
1	-0.05
3	+0.05

9.After the Program, you need to reboot the unit.
Notes: Each DT-200 is strictly calibrated during factory, and initial factor should be 0.00. If the margin of error exceed ±0.03. First make sure your specimen is valid and trustable, and then you can enter into Program Mode to recalibrate it.