

KLP-2780 Slim-Line Gamma-Gamma Density

The bow spring KLP-2780 slimline gamma-gamma density tool is ideally suited for the MATRIX or MGX II Portable Digital Logging system. The probe is lightweight, easy to operate in the field, and provides high quality data measuring Compton-scattered gamma energy at a Na(tl)I scintillation crystal. Users specify the source-detector spacing by changing the spacer length. The standard probe includes 15 cm spacing, source shield (and transport case), along with a 5 or 100 mCurie cs137 source.

Recommended Spares:

- 02000-0267: bow-spring assembly
- 02000-0444: assembly screws
- 28-183-385: assembly screws
- 28-185-502: assembly screws
- 25-402-118: O'ring
- 25-408-118: back-up O'ring

Specifications

Power Requirements

30 VDC @ 35mA

Tool Output

Positive pulse, 1.25uS wide, adjustable if required.

Gamma Detector

NaI (tl): 0.5" dia. x 1.5" long (12.7 mm dia. x 38.1mm long)

*Other detectors/sizes available

Gamma Detector location

Variable, depends on length of spacer bar

Operating temperature range

14 -120 °F (-10 - 50 °C)

Pressure rating

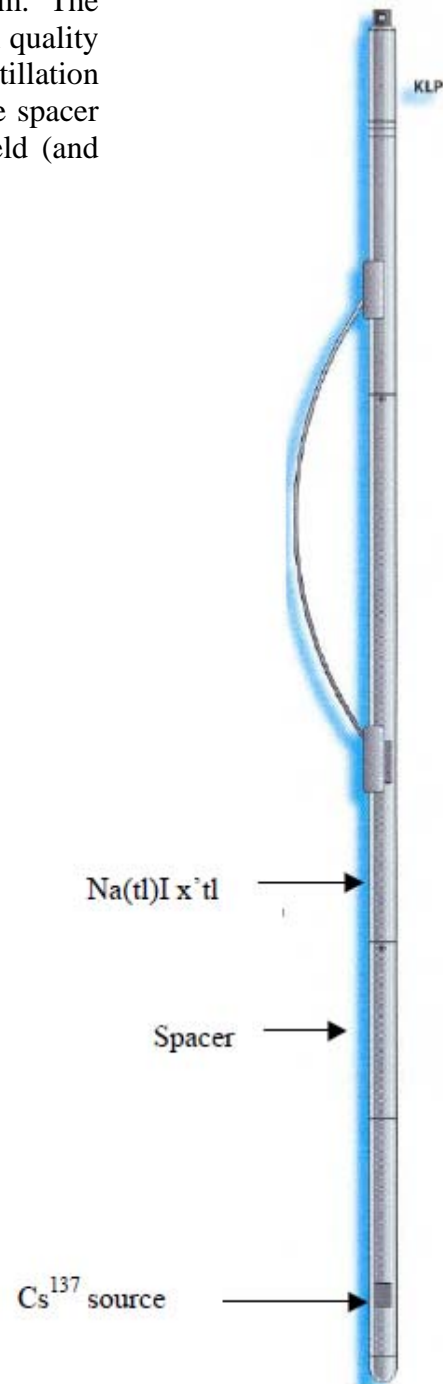
3000 PSI (20685 kP)

Dimensions

Length 56 inches (142 cm)

Diameter 1.5 inches (39 mm) w/o bow-spring

Weight 7.4 Kg (12 lbs)



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Typical Density Calibration Values for 5 mCi Source (200 mm spacing)

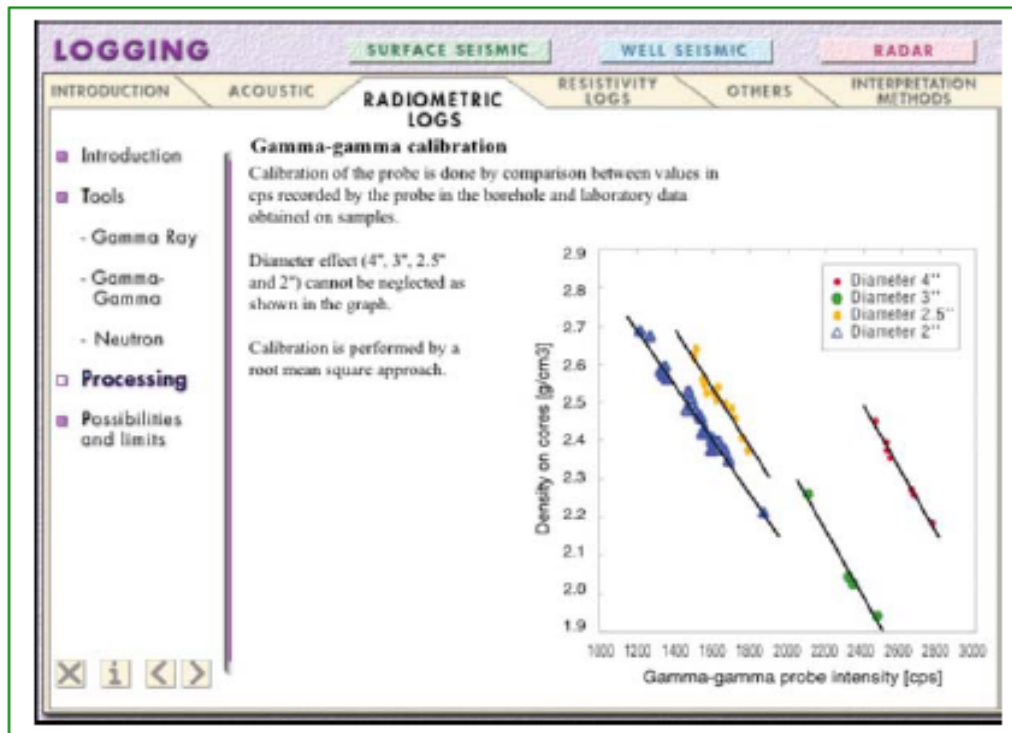
Material	Hole Diameter	CPS/Dry	Dry Bulk Density
Plexiglass	90 mm	45,750	1.28 gm/cc
Aluminum	90 mm	30,000	2.60 gm/cc
Granite	115 mm	36,250	2.62 gm/cc

(In water the CPS decreases by about 1.33x for 200 mm spacing)

Typical Density Calibration Values for 5 mCi Source (350 mm spacing)

Material	Hole Diameter	CPS/Dry	Dry Bulk Density
Plexiglass	90 mm	9,100	1.28 gm/cc
Aluminum	90 mm	6,900	2.60 gm/cc
Granite	115 mm	6,160	2.62 gm/cc

(In water the CPS decreases by about 2.33x for 350 mm spacing)



KLP-2780 calibration procedures used by Univ. of Lausanne, Switzerland

4-Pi Gamma-Gamma Logging: the source-detector spacing, borehole diameter, strength of the source, and the type of source affect determination of accuracy. Depth of penetration is determined mostly by source-detector spacing, but also depends on moisture content and media. Resolution is determined by distance and gamma ray scatter pattern. Longer spacings provide greater depth of investigation, but less resolution. Lab tests show that the depth of investigation is about 1/2 the source-detector spacing.