



Scientific Drilling's HT API Natural Gamma Ray is a high-temperature, probe-based, API calibrated sensor that detects naturally occurring gamma radiation from the formation.

HT Natural Gamma Ray can be run with any of SDI's MWD systems in all configurations. This flexibility places the HT Natural Gamma Ray directly behind the motor allowing for immediate formation evaluation.

HT Natural Gamma Ray provides real-time gamma measurements at temperatures up to 350°F (177°C), allowing clients to collect gamma measurements in wells that have high bottom hole temperatures.

For more information on LWD solutions, contact your Scientific Drilling sales representative or visit:

<http://scientificdrilling.com/lwd>

APPLICATIONS

- + Shale from non-shale distinction
- + Lithology identification
- + Formation correlation
- + Picking casing and coring points
- + Geosteering
- + Shale volume estimation
- + Formation thickness

BENEFITS

- + Provides API qualified gamma ray measurements that are 20 to 25 ft (6 to 8m) closer than standard MWD measurements
- + Works seamlessly with both MP and EM MWD systems to send real-time measurements to surface
- + Innovative design allows one probe to run in all BHA sizes

GENERAL SPECIFICATIONS

COLLAR OD	3.125 in (79.4 mm)	
	3.5 in (88.9 mm)	
	4.75 in (120.7 mm)	
	6.5 in (165.1 mm)	
	6.75 in (171.5 mm)	
	8.0 in (203.2 mm)	
	9.5 in (241.3 mm)	
PROBE OD	1.75 in (44.5 mm)	
PROBE LENGTH	30 in (762 mm)	
MAX DOG LEG (Deg/100 ft, OD)	SLIDING	ROTATING
	12° (9.5 in)	5° (9.5 in)
	12° (8 in)	7° (8 in)
	19° (6.75 in)	8° (6.75 in)
	20° (6.5 in)	10° (6.5 in)
	28° (4.75 in)	12° (4.75 in)
	60° (3.5 in)	20° (3.5 in)
	65° (3.125 in)	20° (3.125 in)
MAX OPERATING TEMPERATURE	350°F (177°C)	
MAX OPERATING TEMPERATURE	20,000 psi (137,900 kPa) (30,000 psi available)	
FLOW RANGE PER TOOL SIZE	TOOL OD	GAL/MIN
	3.125 – 3.875 in	50 – 200
	4.750 – 6.500 in	100 – 400
	6.250 – 6.500 in	200 – 600
	5.000 – 8.000 in	250 – 1,000
	9.5 in	300 – 1,500

MEASUREMENT SPECIFICATIONS

DETECTOR TYPE	NaI Scintillation Crystal
GAMMA RANGE	0 - 1,000 AAPi
RECORDING RATE	1 data point every 5 seconds
REPEATABILITY	4.75" ± 2.1 api @60ft/hr in a 100 API formation
	6.75" ± 2.7 api @60ft/hr in a 100 API formation

*Specifications are subject to change without notice

Refer to MWD system technical data sheet for vibrational limits

