

	DESCRIPTION OF CHANGE	ECO NO	CHG BY	DATE

SENSING SYSTEMS ENGINEERING

PRODUCT / CUSTOMER SPECIFICATION

FOR

HS-1-LT MINI 4.5 Hz-3810 Ω HORIZONTAL

P / N

480-00070-01

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**OYO Geo Space
Houston, Texas U.S.A.**

DATE DWN.

1/08/08

CHECK BY

TITLE

HS-1-LT MINI 4.5-3810 HORIZ.

SHEET 1 OF 3

APP. BY

SPECIFICATION #

S- 480-00070-01

REV.

PRODUCT/CUSTOMER SPECIFICATION

GEOPHONE MODEL: HS-1-LT MINI

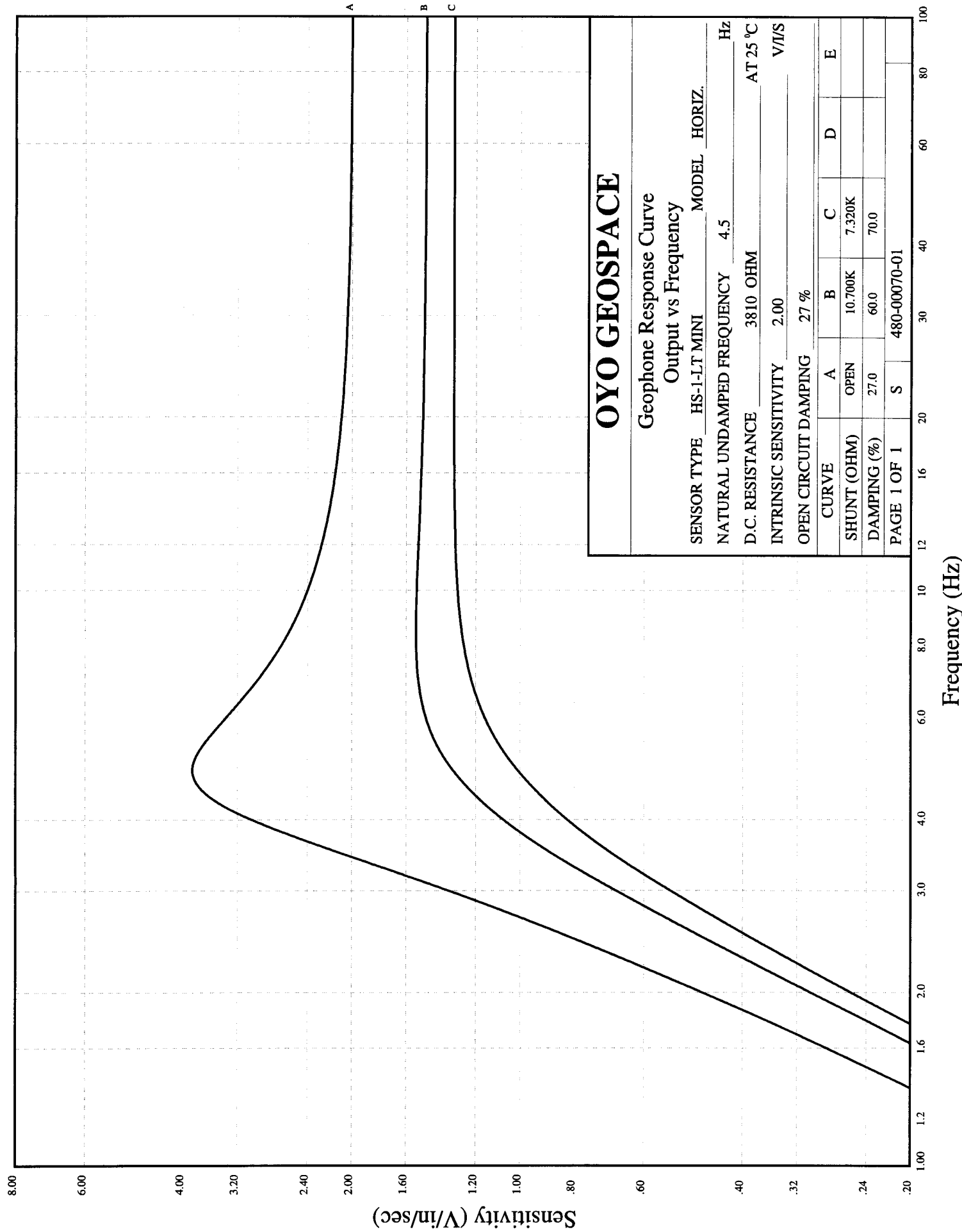
PART NUMBER: 480-00070-01

<u>DESCRIPTION</u>	<u>SPECIFICATION @ 25°C</u>	<u>TOL±</u>
ORIENTATION	<u>HORIZONTAL</u>	
OPERATIONAL RANGE	<u>HORIZONTAL TO +/- 2.0 °</u>	
NATURAL FREQUENCY (Fn)		
@ OPTIMUM ORIENTATION	<u>4.5 Hz</u>	<u>.75 Hz</u>
@ OPERATIONAL RANGE	<u>4.5 Hz</u>	<u>1.25 Hz</u>
COIL EXCURSION P-P		
@ OPTIMUM ORIENTATION	<u>>.150 in., > .381 cm</u>	MAX: <u>.300 in. .762 cm</u>
@ OPERATIONAL RANGE	<u>>.100 in., > 2.54 cm</u>	
CLEAN BAND PASS (SPURIOUS RESPONSE)	<u>N.S.</u>	
DC RESISTANCE	<u>3810 Ω</u>	<u>5 %</u>
INTRINSIC VOLTAGE SENSITIVITY (G)	<u>2.00 V/in./sec</u>	<u>10 %</u>
NORMALIZED TRANSDUCTION CONSTANT	<u>.0324 $\sqrt{R_c}$ V/in./sec</u>	
Coil Resistance (R _c) <u>3800 Ω</u>		
OPEN CIRCUIT DAMPING (B _o)	<u>.27</u>	<u>20 %</u>
MOVING MASS (M)	<u>23 grams</u>	<u>5 %</u>
HARMONIC DISTORTION @ <u> </u> Hz		
WITH DRIVING VELOCITY OF		
<u>.7 in/sec (1.8 cm/sec) P-P</u>		
@ OPTIMUM ORIENTATION	<u>N.S.</u>	
@ OPERATIONAL RANGE	<u>N.S.</u>	
DAMPING CONSTANT (B _c R _i)	<u>4767</u>	
OPERATING AND STORAGE TEMPERATURE	<u>- 45 to +150 °C</u>	
MAXIMUM OPERATING TEMPERATURE	<u>+150 °C</u> continuous duty	
DIMENSIONS		
WEIGHT	<u>10.9 oz., 310 grams</u>	
CASE DIAMETER	<u>1.62 in., 4.12 cm</u>	
CASE HEIGHT	<u>1.85 in., 4.70 cm</u>	
TERMINAL LENGTH	<u>.12 in., .30 cm</u>	

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SHEET 2 OF 3

S-480-00070-01



Frequency (Hz)

REV	DESCRIPTION OF CHANGE	ECO NO	CHG BY	DATE

SENSING SYSTEMS ENGINEERING

PRODUCT / CUSTOMER SPECIFICATION

FOR

HS-1-LT 2.0Hz-3810 Ω HORIZONTAL

P / N

480-00020-01

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Houston,Tx

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GEO SPACE TECHNOLOGIES, Inc.
Houston, Texas U.S.A.

DATE DWN.

2/27/06

CHECK BY

APP. BY

TITLE

HS-1-LT 2.0-3810 HORIZ.

SPECIFICATION #

S- 480-00020-01

REV.

SHEET 1 OF 3

PRODUCT/CUSTOMER SPECIFICATION

GEOPHONE MODEL: HS-1-LT

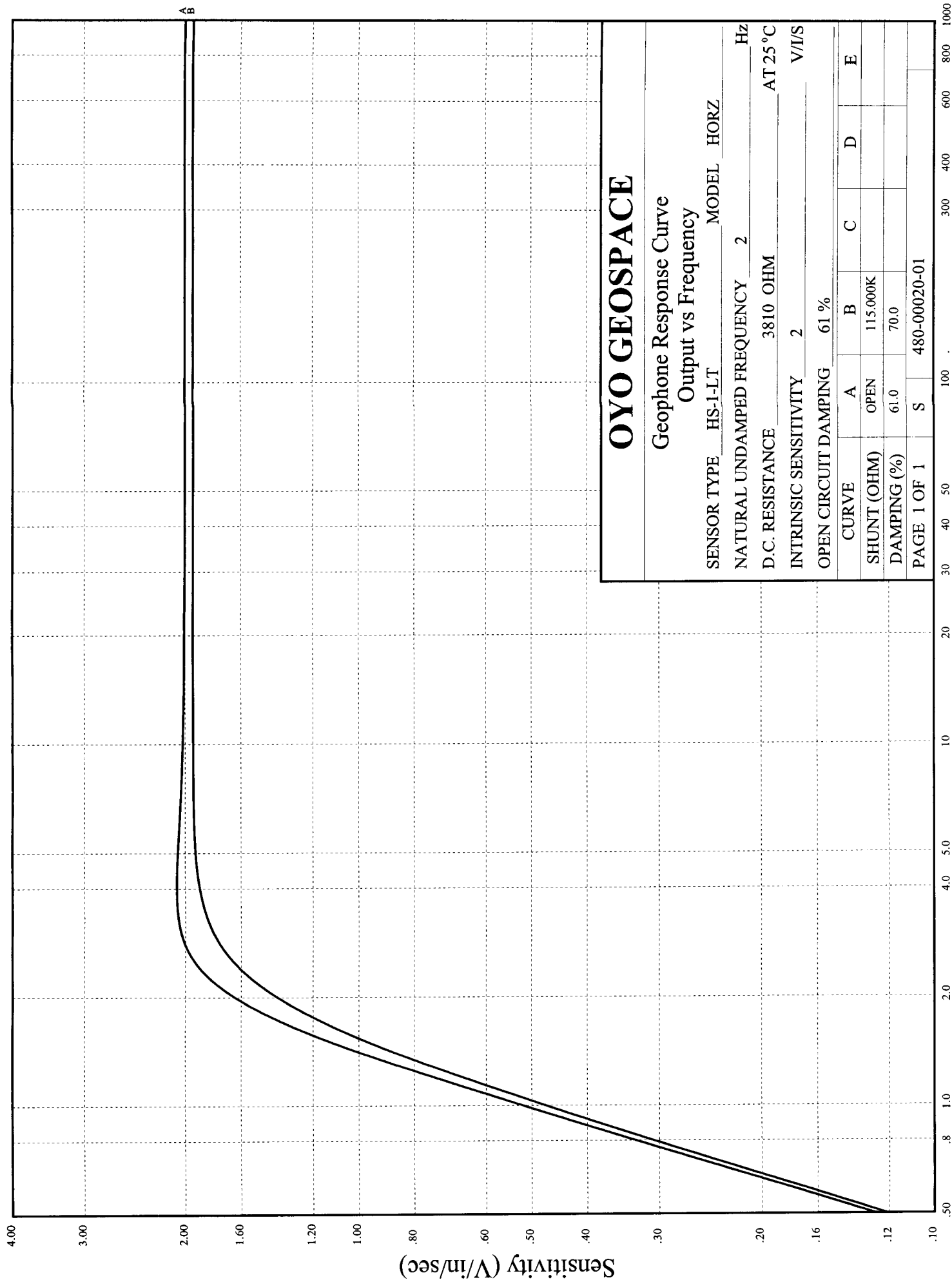
PART NUMBER: 480-00020-01

<u>DESCRIPTION</u>	<u>SPECIFICATION @ 25°C</u>	<u>TOL±</u>
ORIENTATION	<u>HORIZONTAL</u>	
OPERATIONAL RANGE	<u>± 0.50 °</u>	
NATURAL FREQUENCY (Fn)		
@ OPTIMUM ORIENTATION	<u>2.0 Hz</u>	<u>.75 Hz</u>
@ OPERATIONAL RANGE	<u>2.0 Hz</u>	<u>1.25 Hz</u>
COIL EXCURSION P-P		
@ OPTIMUM ORIENTATION	<u>>.150 in, > .381 cm</u>	MAX: <u>.300 in, .762 cm</u>
@ OPERATIONAL RANGE	<u>>.060 in, > .152 cm</u>	
CLEAN BAND PASS (SPURIOUS RESPONSE)	<u>N.S.</u>	
DC RESISTANCE	<u>3810 Ω</u>	<u>5 %</u>
INTRINSIC VOLTAGE SENSITIVITY (G)	<u>2.00 V/in/sec</u>	<u>10 %</u>
NORMALIZED TRANSDUCTION CONSTANT	<u>.032 $\sqrt{R_c}$ V/in/sec</u>	
Coil Resistance (R _c) <u>3800 Ω</u>		
OPEN CIRCUIT DAMPING (B _o)	<u>.61</u>	<u>.25</u>
MOVING MASS (M)	<u>23 gr</u>	<u>5 %</u>
HARMONIC DISTORTION @ <u> </u> Hz		
WITH DRIVING VELOCITY OF		
<u>.7 in/sec (1.8 cm/sec) P-P</u>		
@ OPTIMUM ORIENTATION	<u>N.S</u>	
@ OPERATIONAL RANGE	<u>N.S.</u>	
DAMPING CONSTANT (B _c R _t)	<u>10726</u>	
OPERATING AND STORAGE TEMPERATURE	<u>- 45 to +100 °C</u>	
MAXIMUM OPERATING TEMPERATURE	<u>+100 °C</u> continuous duty	
DIMENSIONS		
WEIGHT	<u>8.70 oz, 247 g</u>	
DIAMETER	<u>1.62 in, 4.12 cm</u>	
HEIGHT (Less stud)	<u>2.00 in, 5.08 cm</u>	
STUD LENGTH	<u>.31 in, .79 cm</u>	

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SHEET 2 OF 3

S-480-00020-01



OYO GEOSPACE

Geophone Response Curve
Output vs Frequency

SENSOR TYPE HS-1-LT MODEL HORZ
NATURAL UNDAMPED FREQUENCY 2 Hz
D.C. RESISTANCE 3810 OHM AT 25 °C
INTRINSIC SENSITIVITY 2 V/I/S
OPEN CIRCUIT DAMPING 61 %

CURVE	A	B	C	D	E
SHUNT (OHM)	OPEN	115.000K			
DAMPING (%)	61.0	70.0			
PAGE 1 OF 1	S	480-00020-01			

Frequency (Hz)