Hocker Incorporated
13402 Weiman Road Houston, TX 77041
713-464-5829 Fax 713-464-3192

ASTM E317-16 Performance Evaluation
Ultrasonic Flaw Detector

F-UTFL Rev-0

Customer PO #:	86832
Certification #:	24-1357
Calibration Date:	10/7/2024
Due Date:	10/7/2025

Meets ASTM E317-16 Minimum Requirements? **YES**

Company:	P & B Testing	Equipment Model & Serial #	Sonatest MS 333 S/N: 3401542C
Address:	6645 W.TIDWELL		
City:	Houston		
State:	Texas	Contact:	Buck Snider
Zip:	77092	Phone:	(713)290-8490
Country:	USA	Email:	QA@pbtesting.com

Equipment Condition As Found: New / X Good / Poor

Lab Conditions: Temp: 70°F; Hum.%: 50%

Performance Evaluation Equipment:		Serial:	NIST:
Calib. Block A	ASTM-E317 Block	SN 03-8399	03-19698-A
Calib. Block B	ASTM Type RA	SN 04-5671	04-25714-A
Transducer "A"	FCHR-5050 Hi Res	SN 931/37	n/a
Transducer "B"	PSLM-5050 5mhz 1/2"	SN 504/03	n/a
Transducer "C"	PSLM-5050 5mhz 1/2"	SN 424/20	n/a
Calibrated Attenuator	S/N: SO383925	NIST #:	1821-1022/1109579/9000-1439,1230,1336_Q1664

Cert. Blocks C to G:	Serial:	NIST:
ASTM E127 1-0300	SN 15-8035	14-20265-A
ASTM E127 2-0300	SN 15-8036	14-21740-A
ASTM E127 3-0300	SN 15-8037	
ASTM E127 4-0300	SN 15-8038	
ASTM E127 5-0300	SN 15-8039	

Horizontal Limit Linearity

Horiz. Accuracy Limit + or -	2.0%
Meets Accuracy Required?	Yes
Horiz. Accuracy Deviation	0.0%
Horiz. Screen Width used?	10"

% Horiz. Screen Width

Echo #	Actual %	Ideal	Deviation
1	0.0%	0.0%	0.0%
2	10.0%	10.0%	0.0%
3	20.0%	20.0%	0.0%
4	30.0%	30.0%	0.0%
5	40.0%	40.0%	0.0%
6	50.0%	50.0%	0.0%
7	60.0%	60.0%	0.0%
8	70.0%	70.0%	0.0%
9	80.0%	80.0%	0.0%
10	90.0%	90.0%	0.0%
11	100.0%	100.0%	0.0%
Maximum Horizontal Deviation			0.0%

Accuracy Of Calibrated Gain Controls

Ideal	Actual	Ideal	Actual
1	1	10	10
2	2	12	12
4	4	14	14
6	6	20	20

Near Surface Resolution at 80%

Depth	Break Pt.	Noise %
0.7"	18.0%	1.0%
0.5"	18.0%	1.0%
0.3"	15.0%	1.0%

Far Surface Resolution at 80%

Depth	Break Pt.	Noise %
.01"	18.0%	1.0%
.02"	10.0%	1.0%
.03"	10.0%	1.0%

Vertical Limit Linearity

Verticle Accuracy Limit + or -	2.0%
Meets Accuracy Required?	Yes
Vert. Accuracy Deviation	-1.0%
Equipment Overall Pass/ Fail Result:	Pass

%Vertical Screen Height

Ideal %	Actual %	Ideal%	Actual%	Ideal%	Actual%
+1db steps		-2db steps		-4db Steps	
50.0%	50.0%	50.0%	50.0%	16.0%	15.0%
56.0%	56.0%	40.0%	40.0%	10.0%	9.0%
63.0%	63.0%	31.0%	32.0%	6.0%	5.0%
71.0%	72.0%	25.0%	25.0%	5.0%	4.0%
79.0%	80.0%	20.0%	20.0%	3.0%	2.0%
89.0%	90.0%	16.0%	15.0%	2.0%	1.0%
100.0%	100.0%				
				Maximum Vertical Deviation	-1.0%

Sensitivity & Noise

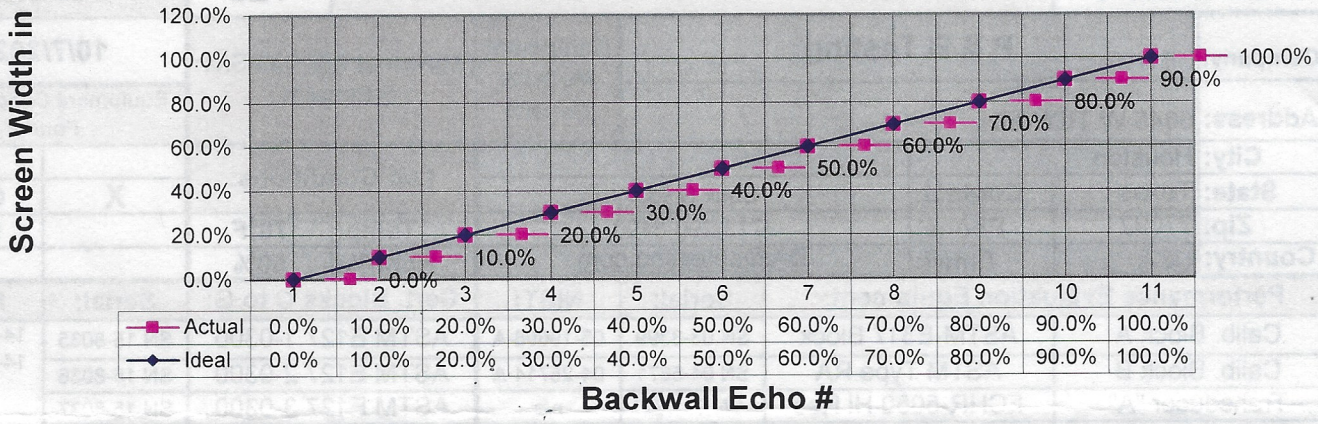
Test Block Number	Sig. Ampl.	Break Pt.	Noise Lvl.	Hole Size
ASTM E127 1-0300	60.0%	15.0%	1.0%	1/64
ASTM E127 2-0300	60.0%	16.0%	1.0%	1/32
ASTM E127 3-0300	60.0%	17.0%	1.0%	3/64
ASTM E127 4-0300	60.0%	17.0%	1.0%	1/16
ASTM E127 5-0300	60.0%	18.0%	1.0%	5/64

Gain Control Deviation DB	0
Max Noise Level (Sensitivity & Noise Test)	1.0%
Max Noise Level (Resolution Test)	1.0%

P & B Testing

Certification # 24-1357
Certification Date 10/7/2024

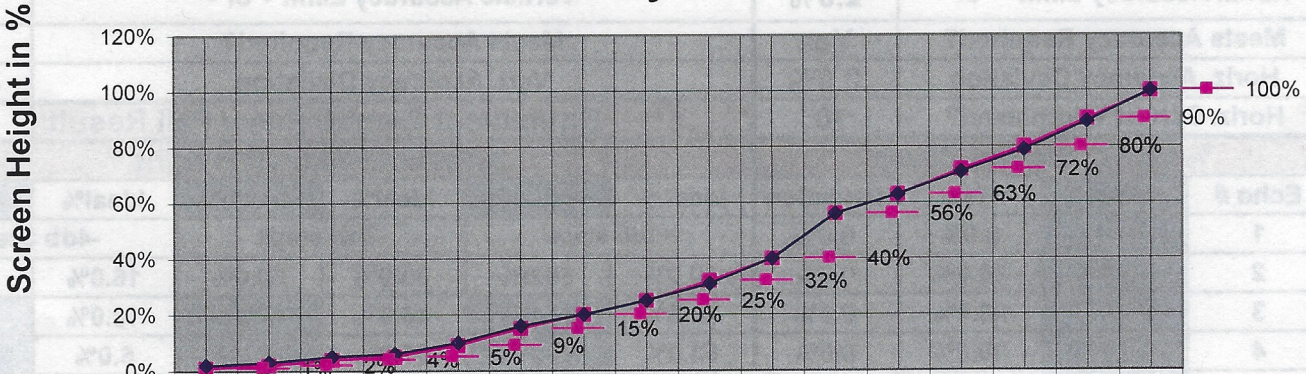
Horizontal Linearity As Received!



	1	2	3	4	5	6	7	8	9	10	11
Actual	0.0%	10.0%	20.0%	30.0%	40.0%	50.0%	60.0%	70.0%	80.0%	90.0%	100.0%
Ideal	0.0%	10.0%	20.0%	30.0%	40.0%	50.0%	60.0%	70.0%	80.0%	90.0%	100.0%

Backwall Echo #

Vertical Linearity As Received!



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Actual	1%	2%	4%	5%	9%	15%	20%	25%	32%	40%	56%	63%	72%	80%	90%	100%
Ideal	2%	3%	5%	6%	10%	16%	20%	25%	31%	40%	56%	63%	71%	79%	89%	100%

Return Echo #

Notes:

This performance evaluation was done in accordance with ASTM-E317-16 and Hocker Incorporated procedure CP-UTFL Rev 0. Test equipment and calibration blocks used to perform this evaluation are traceable to the National Institute of Standards and Technology. NIST numbers listed in this document and supporting documentation is on file. This performance evaluation is made in conformance with ANSI/NCSL 2540.3-2006 and/or ISO 10012, and with 10CFR21.

Technician Signature: _____

Technician Performing Evaluation: Roger Kimmons

Date: 10/7/2024

Approval Signature: _____

Approved By: Derrick Schumann

Buck Snider