

Reference	FFlab 3458	Calibration date	October 04 2020
Ref P/N	A9	Ambient Temperature	24.70 °C
Serial	XFER	Relative Humidity	50.99 %
ID Number	Calibration test, as received;	Pressure	1020.71 hPa
Notes	Test as received, 5h warmup	Test type	Front PTFE cable terminals

Reference standard	Mfg	Model	Options	Serial / Unc	CEID	Calibration date	Due date
DC REFERENCE	Fluke	732B	10.0000059	7350002	None	Invalid	Invalid
DMM	HP	3458A		FF-4		None	None

READ. Actual measurement uncertainty available upon request was calculated using the expanded method and is expressed in values at approximately the 95% confidence level using a coverage factor of K= 2.

Certificate statements are based on test results within specified limits without reduction of the uncertainty of the test and/or measurement. The test and measurement data here relate only to the item tested and/or measured. Unit acceptance of failure includes uncertainty data compilation. Calibration due date that appears on the Certificate of Calibration and labels are determined by the customer and does not imply conformance to a standard.

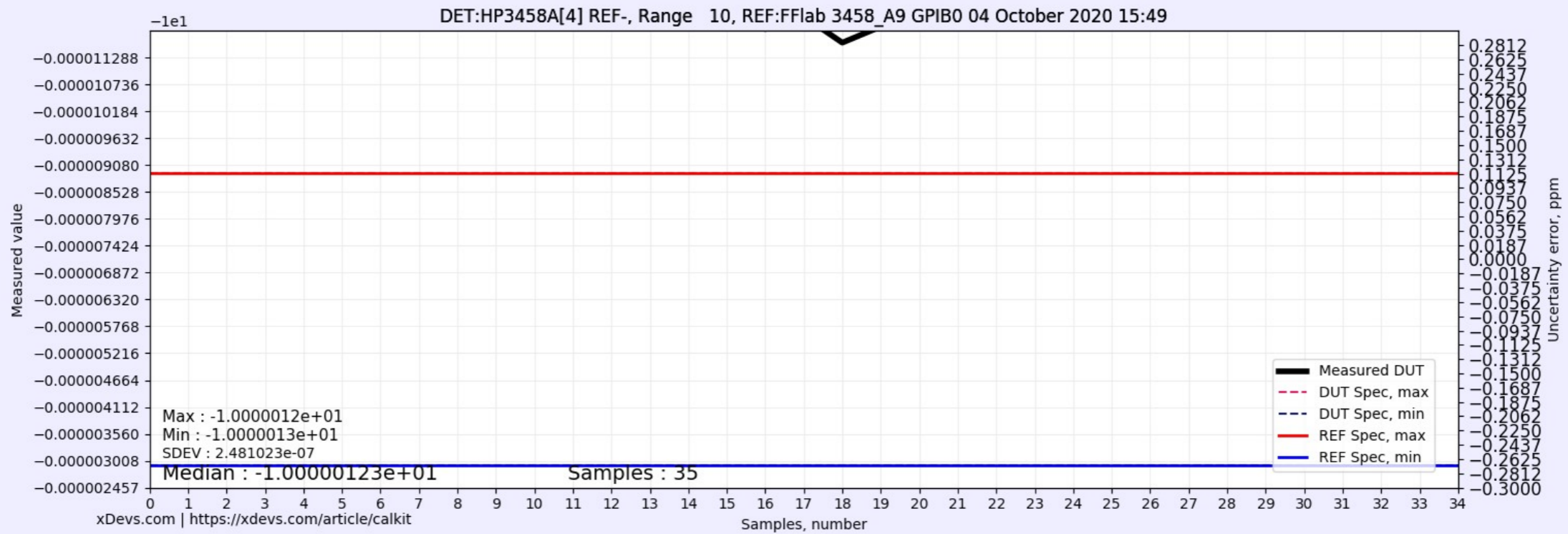
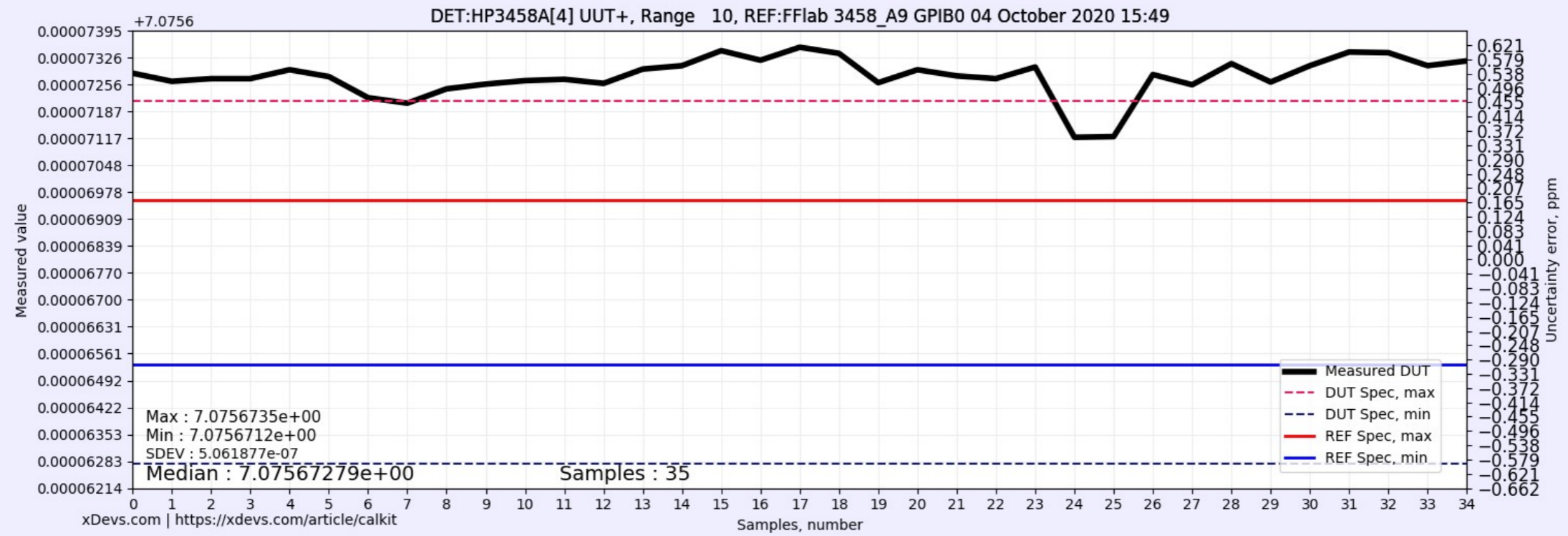
UUT output transferred by manual ratiometric measurement with reference standard.

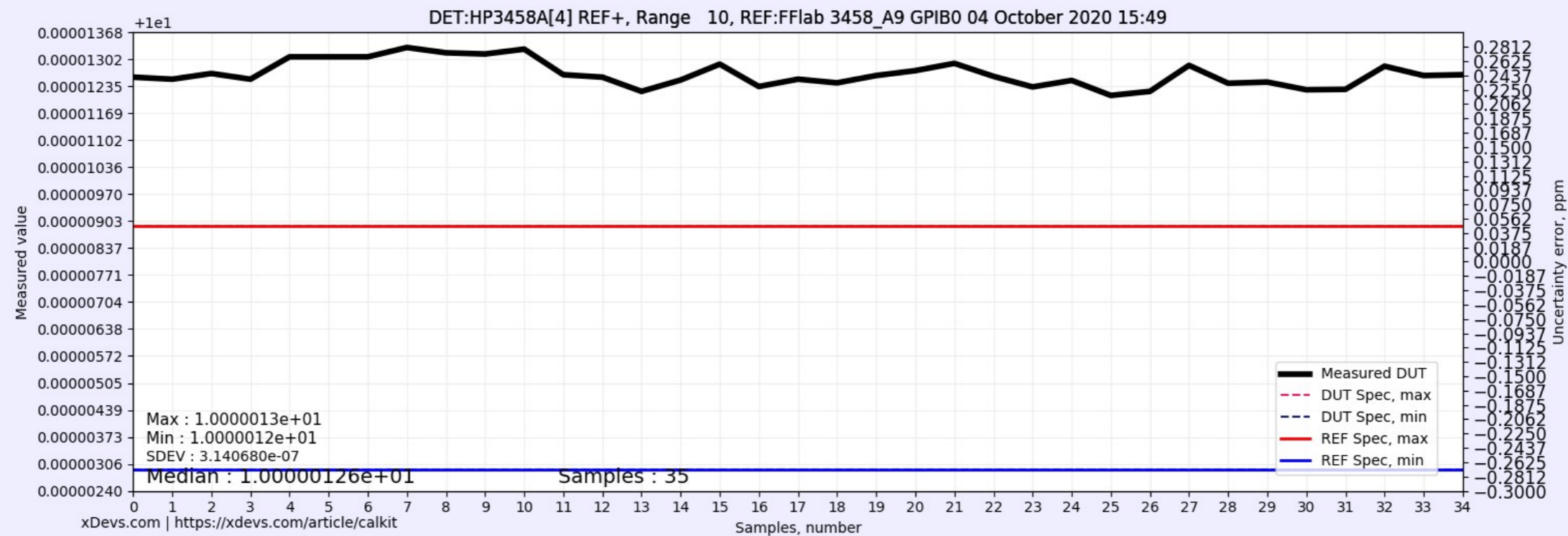
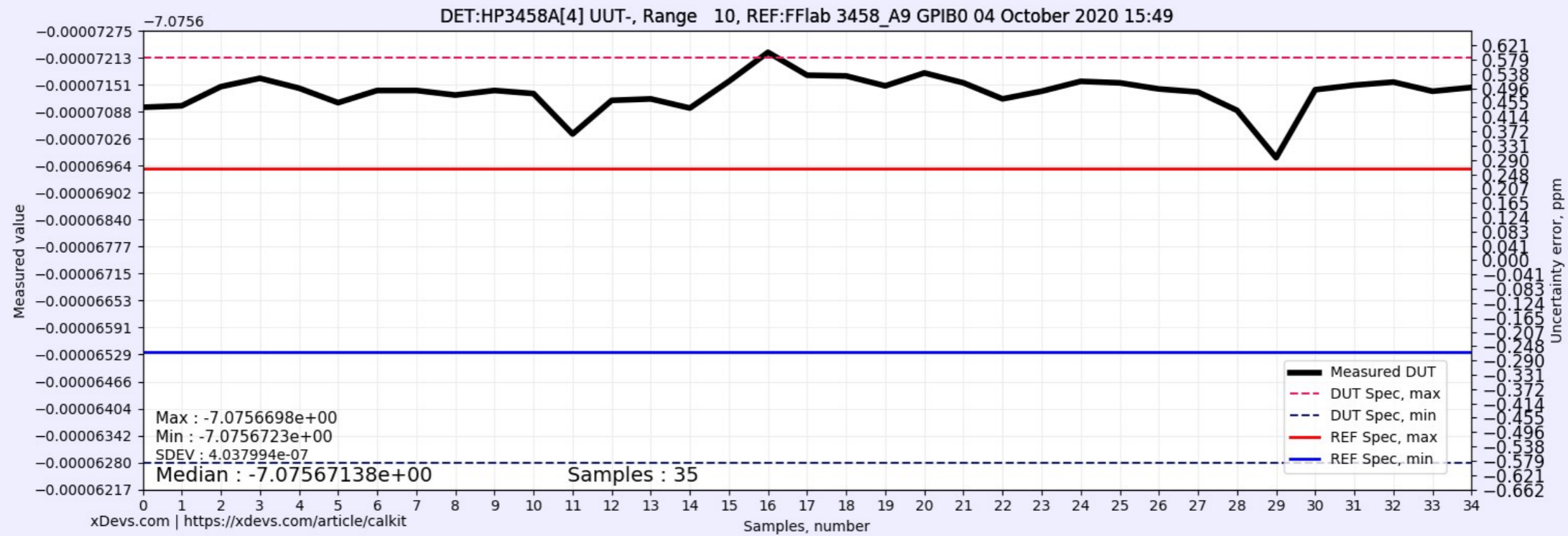
Fixed 1.000e+01 range is used on the Keysight 3458A/X02 detector. The following test use 10 minute transfer specification with FFlab 3458 A9 output source as reference. Gain verified for stability ±0.10 ppm over the test period. Detector zero offset is DUT is nulled prior to the measurement.

Configuration : Battery power STD, NPLC100, NDIG8, Guard is open.

	Measurement	Unit	Uncertainty	Standard Deviation	DUT Spec / Δ	Degree of freedom / Notes
Transfer reference output	10.0000059	VDC	±0.000 ppm			
Reference measured output (+)	10.0000126	VDC	±0.100 ppm	σ = 0.3284 μVDC	Δ = 0.669 ppm	35
Reference measured output (-)	-10.0000123	VDC	±0.100 ppm	σ = 0.2437 μVDC	Δ = 0.640 ppm	35
Reference calculated +/-	10.0000125	VDC	±0.100 ppm		Δ = 0.654 ppm	
Detector zero offset	-0.0000001	VDC				
UUT measured output (+)	7.0756728	VDC	±0.121 ppm	σ = 0.5449 μVDC		35
UUT measured output (-)	-7.0756714	VDC	±0.121 ppm	σ = 0.4227 μVDC		35
Ratio positive polarity	0.70756639		±0.221 ppm			Inf
Ratio negative polarity	0.70756627		±0.221 ppm			Inf
UUT calculated output (+)	7.0756681	VDC	±0.221 ppm		Δ = 0.086 ppm	
UUT calculated output (-)	-7.0756669	VDC	±0.221 ppm		Δ = -0.086 ppm	
Temperature Δ	-0.380	°C	±1.00 %		±1.0 °C	
UUT previous data	7.0756652	VDC	±0.100 ppm			Report
Deviation from previous	0.316 ppm	VDC	±0.242 ppm			
UUT transfer result (Linear)	7.0756675	VDC	±0.221 ppm		0.1%	In spec
UUT transfer result (RSS)	7.0756675	VDC	±0.221 ppm		0.1%	In spec

[Statistics image data](#)





Test procedure : \$Id\$

Lab temperature maintained +23°C ±1°C

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RAW data	Result
Array Ref P	[10.00001258, 10.00001253, 10.00001267, 10.00001253, 10.00001308, 10.00001308, 10.00001308, 10.00001331, 10.00001318, 10.00001315, 10.00001327, 10.00001264, 10.00001258, 10.00001223, 10.00001251, 10.0000129, 10.00001235, 10.00001253, 10.00001244, 10.00001262, 10.00001274, 10.00001292, 10.0000126, 10.00001234, 10.0000125, 10.00001213, 10.00001223, 10.00001287, 10.00001243, 10.00001246, 10.00001227, 10.00001228, 10.00001285, 10.00001262, 10.00001264]
Array Ref N	[-10.0000125, -10.000012, -10.0000119, -10.00001257, -10.00001241, -10.00001241, -10.00001248, -10.00001232, -10.00001274, -10.00001248, -10.00001232, -10.00001255, -10.00001234, -10.00001257, -10.00001197, -10.00001221, -10.00001188, -10.00001214, -10.0000116, -10.00001193, -10.00001214, -10.00001232, -10.00001241, -10.00001225, -10.00001243, -10.00001262, -10.00001251, -10.00001221, -10.00001206, -10.00001193, -10.00001232, -10.00001221, -10.00001239, -10.00001239, -10.00001237]
Array UUT P	[7.07567286, 7.075672649, 7.075672719, 7.075672719, 7.075672949, 7.075672772, 7.075672226, 7.075672085, 7.075672455, 7.075672578, 7.075672667, 7.075672702, 7.075672596, 7.075672966, 7.075673054, 7.075673442, 7.075673195, 7.07567353, 7.075673372, 7.075672614, 7.075672949, 7.07567279, 7.075672719, 7.075673019, 7.075671203, 7.075671221, 7.075672825, 7.075672561, 7.075673107, 7.075672631, 7.075673054, 7.075673407, 7.075673389, 7.075673054, 7.075673178]
Array UUT N	[-7.075670992, -7.075671027, -7.075671468, -7.075671662, -7.075671433, -7.075671098, -7.07567138, -7.07567138, -7.075671274, -7.07567138, -7.075671309, -7.075670375, -7.075671151, -7.075671186, -7.075670974, -7.075671591, -7.075672261, -7.075671732, -7.075671715, -7.075671486, -7.075671785, -7.075671556, -7.075671186, -7.075671362, -7.075671591, -7.075671556, -7.075671415, -7.075671345, -7.075670921, -7.075669829, -7.075671397, -7.075671503, -7.075671574, -7.075671362, -7.07567145]

Histogramm

