

TEMPERATURE TEST DATA



3199 De La Cruz Blvd, Santa Clara, CA 95054
 Phone: (408) 988-0770 FAX: (408) 988-0762
 test@quantalabs.com www.quantalabs.com

CLIENT: inSync MEMS Mirror					P.O. NO: 119190	
SPECIMEN: Aledo2 (Qty:3)					JOB NO: QL-21-0516	
SPECIFICATION: Per DiDi's Spec			CHAMBER: TestEquity # 40		PAGE 1 OF 1	

DATE	S/N	TIME	TEMP	TEMP. GRADIENT (°C/MIN)	OPER.	REMARKS	
05/20/2021 ~ 05/27/2021	N/A	09:55	23°C	...	1	Start @ 23°C for 5 min	
			-40°C	...	2	Ramp temp to -40°C in 1hr 3 min	
			-40°C	...	3	Soak @ -40°C for 168 hrs	
			23°C	...	4	Ramp temp to 23°C in 1hr 3 min	
		12:06	23°C	...	5	Stop test @ 23°C	
NOTE: • Non-operational test. • Test completed to required specification.							

TEST ENGINEER: Quan Pham	DATE: <i>Uh.</i>
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Temperature Test



QL-TTS-152

10/26/2018

JOB NO. : QL-21-0516

Samples in Chamber # 40

Temperature Test



QL-ETS-152 10/26/2018

JOB NO. : QL-21-0516

Test in Chamber # 40

05/20 ~ 05/27

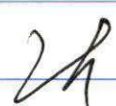
TEMPERATURE TEST DATA



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SPECIMEN: Aledo2 (Qty:3)					JOB NO: QL-21-0516	
SPECIFICATION: Per DiDi's Spec			CHAMBER: Associated # 35		PAGE 1 OF 1	

DATE	S/N	TIME	TEMP	TEMP. GRADIENT (°C/MIN)	OPER.	REMARKS	
05/20/2021 ~ 05/27/2021	N/A	10:00	23°C	...	1	Start @ 23°C for 5 min	
			125°C	...	2	Ramp temp to 125°C	
			125°C	...	3	Soak @ 125°C for 168 hrs	
			23°C	...	4	Ramp temp to 23°C	
		11:39	23°C	...	5	Stop test @ 23°C	
NOTE: - Non-operational test, ramp rate was not specified. - Test completed to required specification.							

TEST ENGINEER: Quan Pham		DATE:
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Temperature Test



QL-TTS-152

10/26/2018

JOB NO. : QL-21-0516

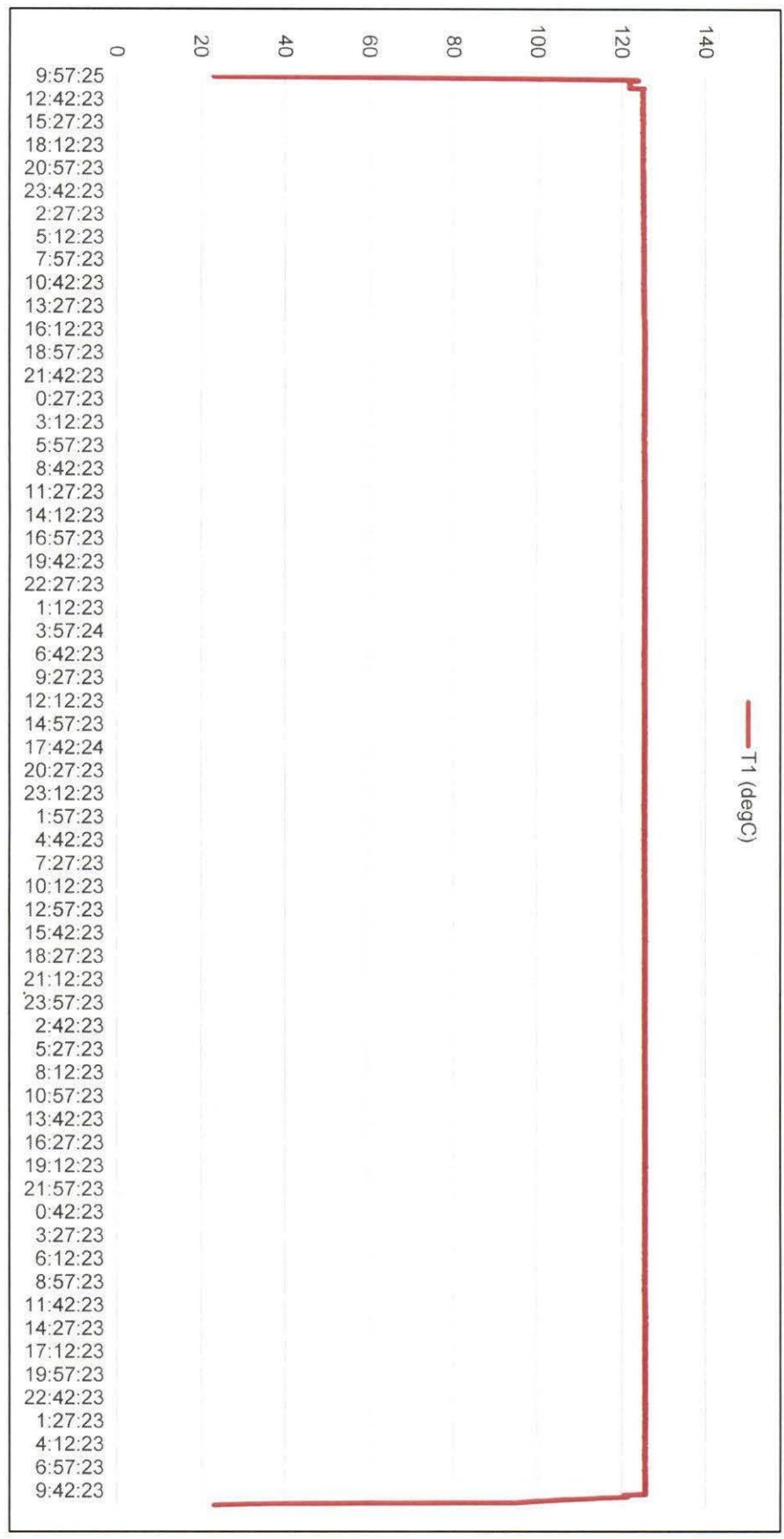
Samples in Chamber # 35



QUANTUM

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SANTA CLARA, CALIFORNIA

Temperature Test



QL-TTS-152 10/26/2018

JOB NO. : QL-21-0516

Test in Chamber # 35

05/20 ~ 05/27

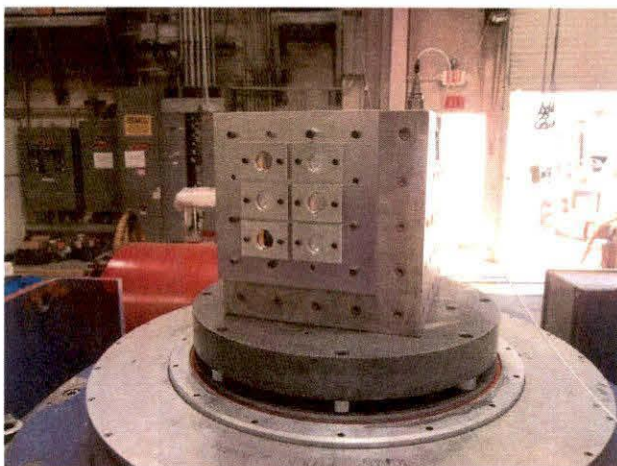
SINE VIBRATION TEST DATA



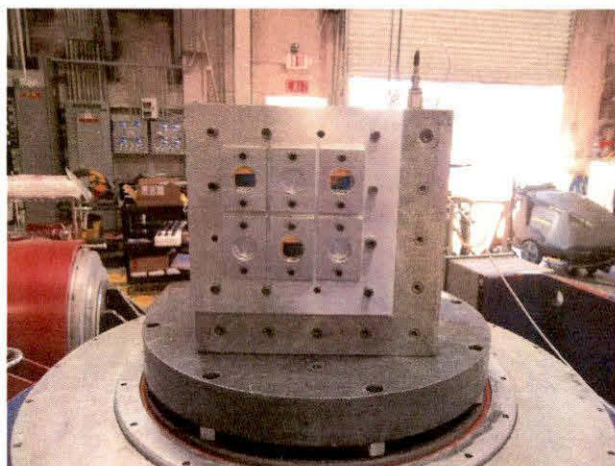
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CLIENT: inSync MEMS Mirror				P.O. NO: 119190
SPECIMEN: Aledo2				JOB NO: QL-21-0516
SPECIFICATION: Client Specification				PAGE 1 OF 1
EQUIPMENT: Purple/Blue 335		TEMPERATURE: 23°C		HUMIDITY: 33%
DATE	S/N	AXIS	FREQUENCIES & LEVELS	REMARKS
06/15/2021	N/A	X	<u>Sine Sweep Vibration Test</u> 20-2000 Hz 20Hz @ 0.06" Pk-Pk Displacement 127Hz – 2000Hz @ 50G Sweep rate: 4 minutes/cycle Total: 32 minutes/axis	Non Operational Test Test completed to specification requirements.
		Y		
		Z		DEFINITION OF AXES See Photo Page
TEST ENGINEER: George Sun T.C				DATE:

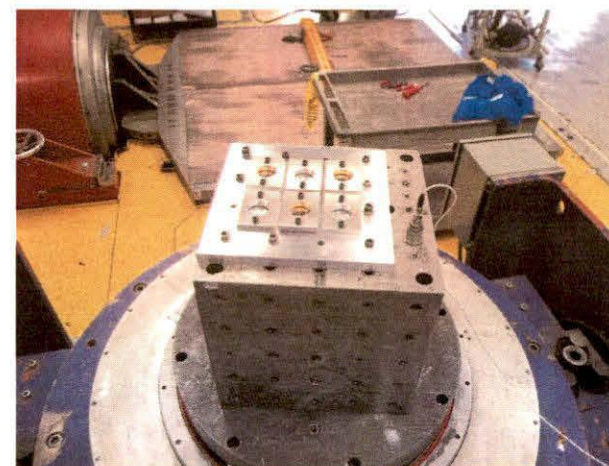
Sine Sweep Vibration Test



X-Axis



Y-Axis



Z-Axis

QL-TTS-152

10/26/2018

JOB NO. : QL-21-0516

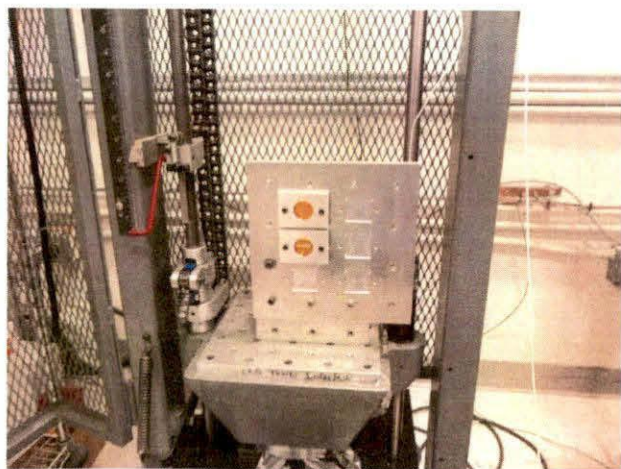
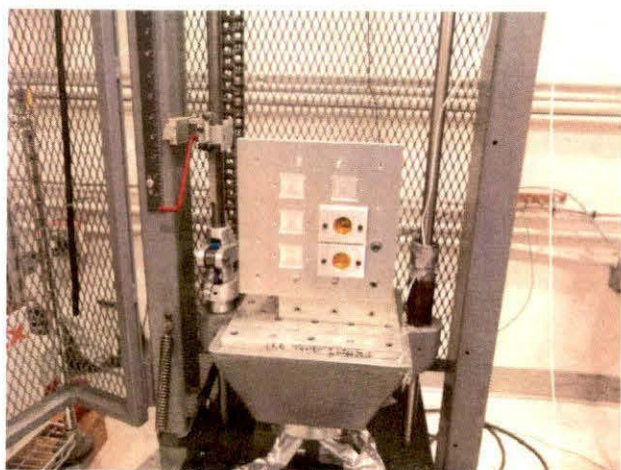
SHOCK TEST DATA



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CLIENT: inSync MEMS Mirror			P.O. NO: 119190	
SPECIMEN: Aledo2			JOB NO: QL-21-0516	
SPECIFICATION: Client Specification			PAGE 1 OF 1	
EQUIPMENT: LAB Drop Tester		TEMPERATURE: 25°C	HUMIDITY: 42%	
DATE	S/N	AXIS	SHOCK SPEC.	REMARKS
06/15/2021	N/A	(+) X	Half Sine Shock Test: 500G 0.5ms 750G 0.5ms 1000G 0.5ms 1250G 0.5ms 1500G 0.5ms 5 Pulse/ Direction	Non Operational Test Test completed to specification requirements.
		(-) X		
		(+) Y		
		(-) Y		
		(+) Z		
TEST ENGINEER: George Sun			T.C. DATE:	

Shock Test



$\pm$ X-Axis



$\pm$ Y-Axis



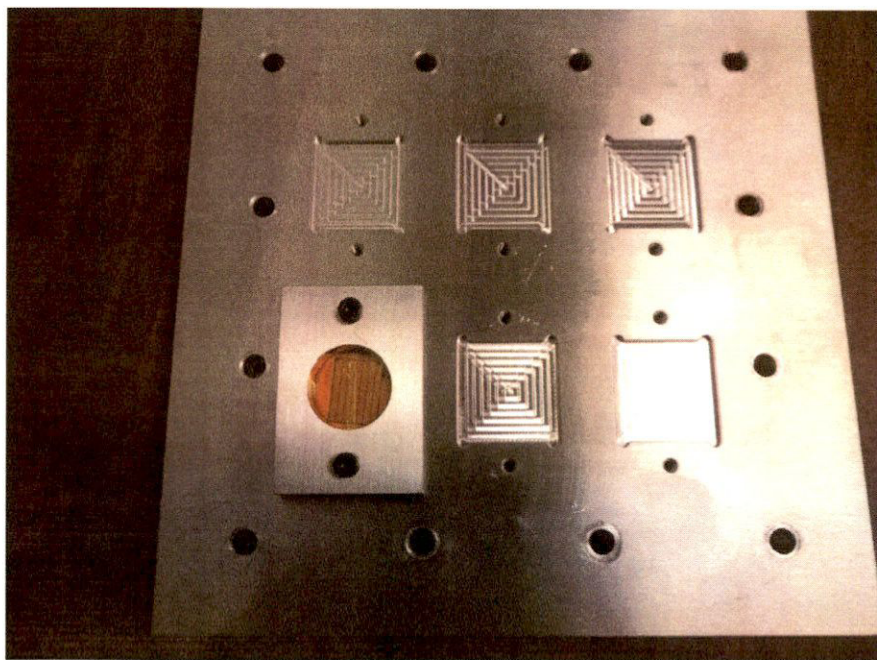
$\pm$ Z-Axis

JOB NO. : QL-21-0516

QL-TTS-152

10/26/2018

Shock Test



After Shock test

QUANTA LABORATORIES EQUIPMENT LIST



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Client:	inSync MEMS Mirror	P.O. NO: 119190				
		JOB NO.: QL-21-0516				
DIGITAL SYSTEM LIST						
Device Type	Description	Make & Model	Range	Asset #	Serial #	Due Date
Shaker Control System	VC-23	Dactron LDS Laser USB	0.1Hz - 3 KHz RES. 0.1dB	QL-0330	10065179	02/10/2022
Data Acquisition System	DAS-4	ECON		QL-0332	HW128992257	08/12/2021
MECHANICAL SYSTEM LIST						
Device Type	Description	Make & Model	Range	Asset #	Serial #	Due Date
Shaker Amplifier	Purple/Blue 335	ETS MPA3324		QL-0920	1102043	Calibration Not Required
Electrodynamic Shaker	Purple/Blue 335	Ling B-335 (Blue)	5Hz - 3 KHz	QL-0509	92	Calibration Not Required
Electrodynamic Shaker	Purple/Blue 335	Ling B-335 (Purple)	5Hz - 3 KHz	QL-0918	122	Calibration Not Required
Shock Machine	Shock Tester No. 1	AVCO SM105-8	3000 G MAX	QL-0050	1978	Calibration Not Required
Drop Machine	LAB Drop Tester	LAB 2D-500	24" TO 68"	QL-0169	780061	Calibration Not Required
SENSOR LIST						
Device Type	Description	Make & Model	Range	Asset #	Serial #	Due Date
Accelerometers	Single-Axial	DYTRAN 3200B5T	20-2000 Hz 5000 G	QL-0390	5353	01/28/2022
Accelerometers	Single-Axial	DYTRAN 3030B4	5~2000 Hz 500 G	QL-1021	20089	06/01/2021
Miscellaneous List						
Device Type	Description	Make & Model	Range	Asset #	Serial #	Due Date
Temp Humidity Sensor	ambient room monitor#2 (Control rm 4)	Acurite 06038MA1	32°F to 122°F; 0°C to 50°C 16% – 98% RH (relative humidity)	QL-1337	Q41	06/30/2021
Customer-Supplied Equipment						
Device Type	Description	Make & Model	Range	Asset #	Serial #	Due Date

Notes

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2. The information in this report applies only the items tested or calibrated.
3. Measurements in this report are traceable to SI units via national standards maintained by NIST or derived from acceptable values of natural physical constants that comply with ISO 17025:2017 and A2LA requirements.
4. In Tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement.
5. The estimated measurement uncertainty (EMU), if reported on this certificate, is being reported at a confidence level of 95% or $K=2$ unless otherwise noted in the comments section.

TEMPERATURE AND THERMAL SHOCK TEST DATA



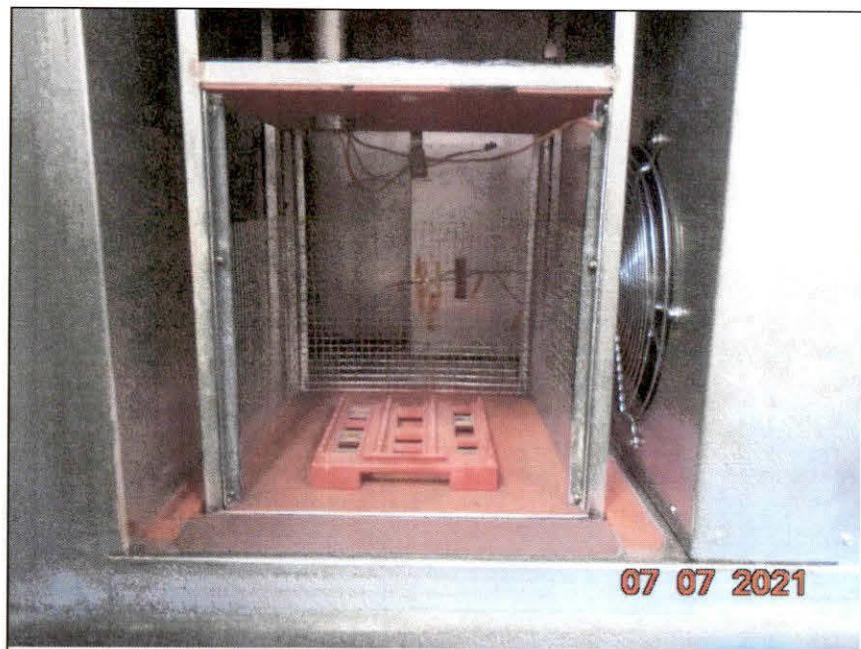
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CLIENT: inSync MEMS Mirror					P.O. NO: 119190	
SPECIMEN: Aledo2 (Qty: 5)					JOB NO: QL-21-0516	
SPECIFICATION: Per DiDi's Spec			CHAMBER: THERMOTRON # 42		PAGE 1 OF 1	

DATE	S/N	TIME	TEMP	TEMP. GRADIENT (°C/MIN)	OPER.	REMARKS
07/08/2021 ~ 07/12/2021	N/A	10:11	25°C	...	1	Start test @ 25°C for 10 min.
			-40°C	...	2	Unit(s) exposed to cold temperature -40°C (air-to-air transfer) & soak for 10 min
			125°C	...	3	Unit(s) exposed to hot temperature 125°C (air-to-air transfer) & soak for 10 min
					4	Test cycled a total of 300 times
		19:11	25°C	...	5	Ramp back to ambient temperature
NOTE: 1. Upper chamber temperature was at a constant of 125°C and lower chamber temperature was constantly at -40°C. 2. Basket transferred between lower and upper chambers in less than 5 seconds.						

TEST ENGINEER: Quan Pham	DATE: 
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Temperature Shock Test



QL-TTS-152

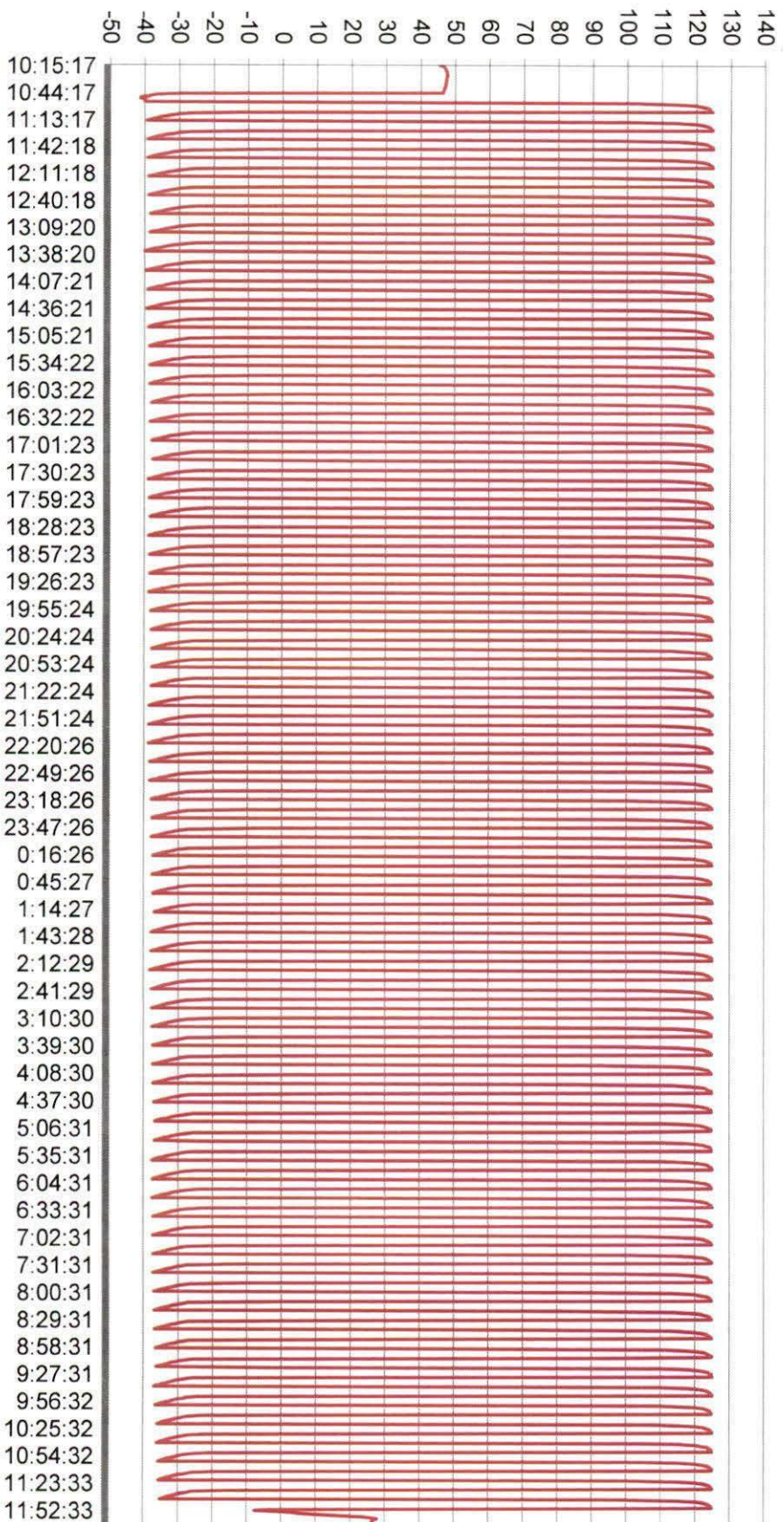
10/26/2018

JOB NO. : QL-21-0516

Units in Chamber # 42

Temperature Shock Test

— PV Basket Temp, degC



07/08 ~ 07/09

JOB NO. : QL-21-0516

Test in Chamber # 42

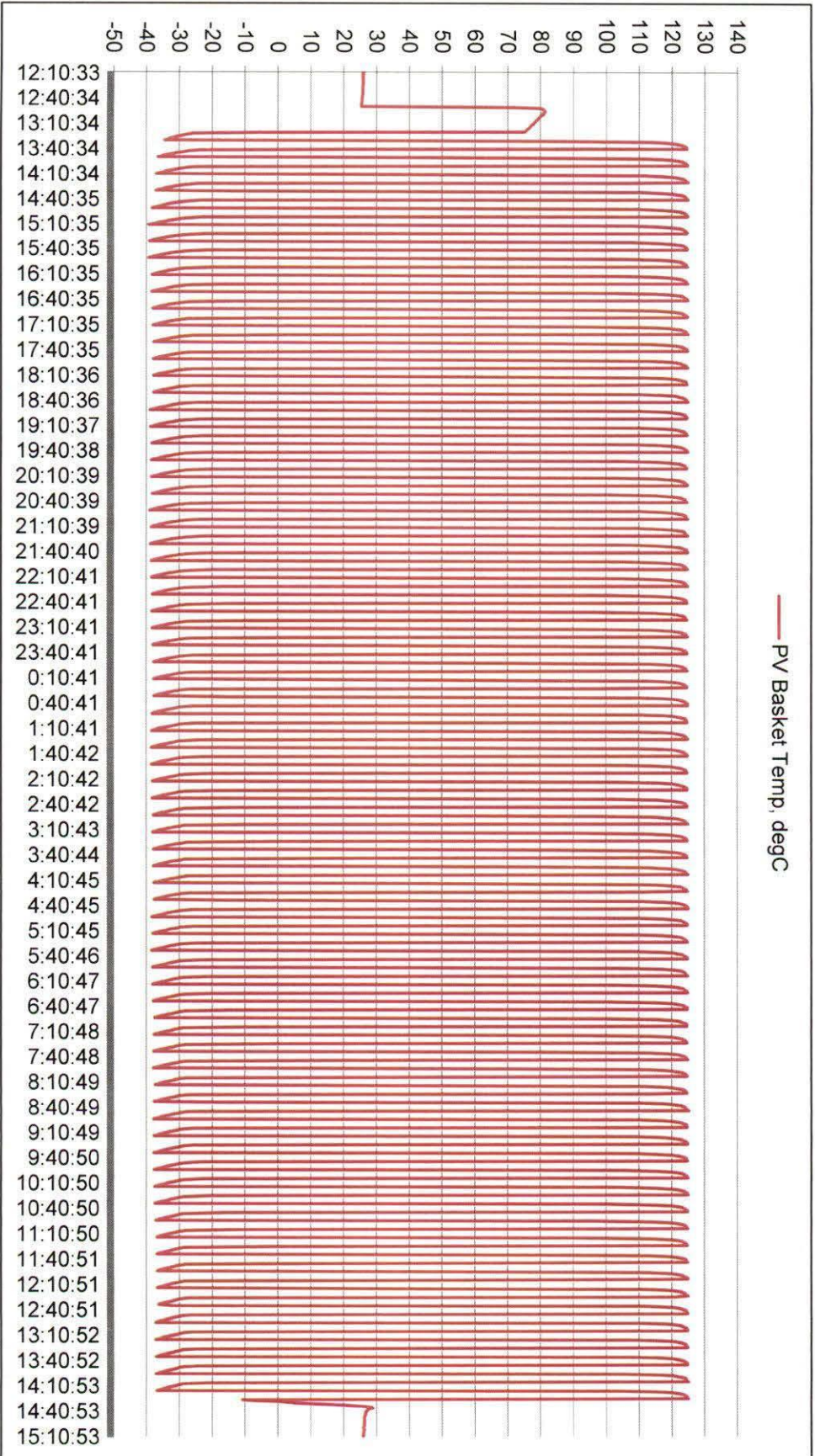


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Temperature Shock Test

— PV Basket Temp, degC



07/09 ~ 07/10

JOB NO. : QL-21-0516

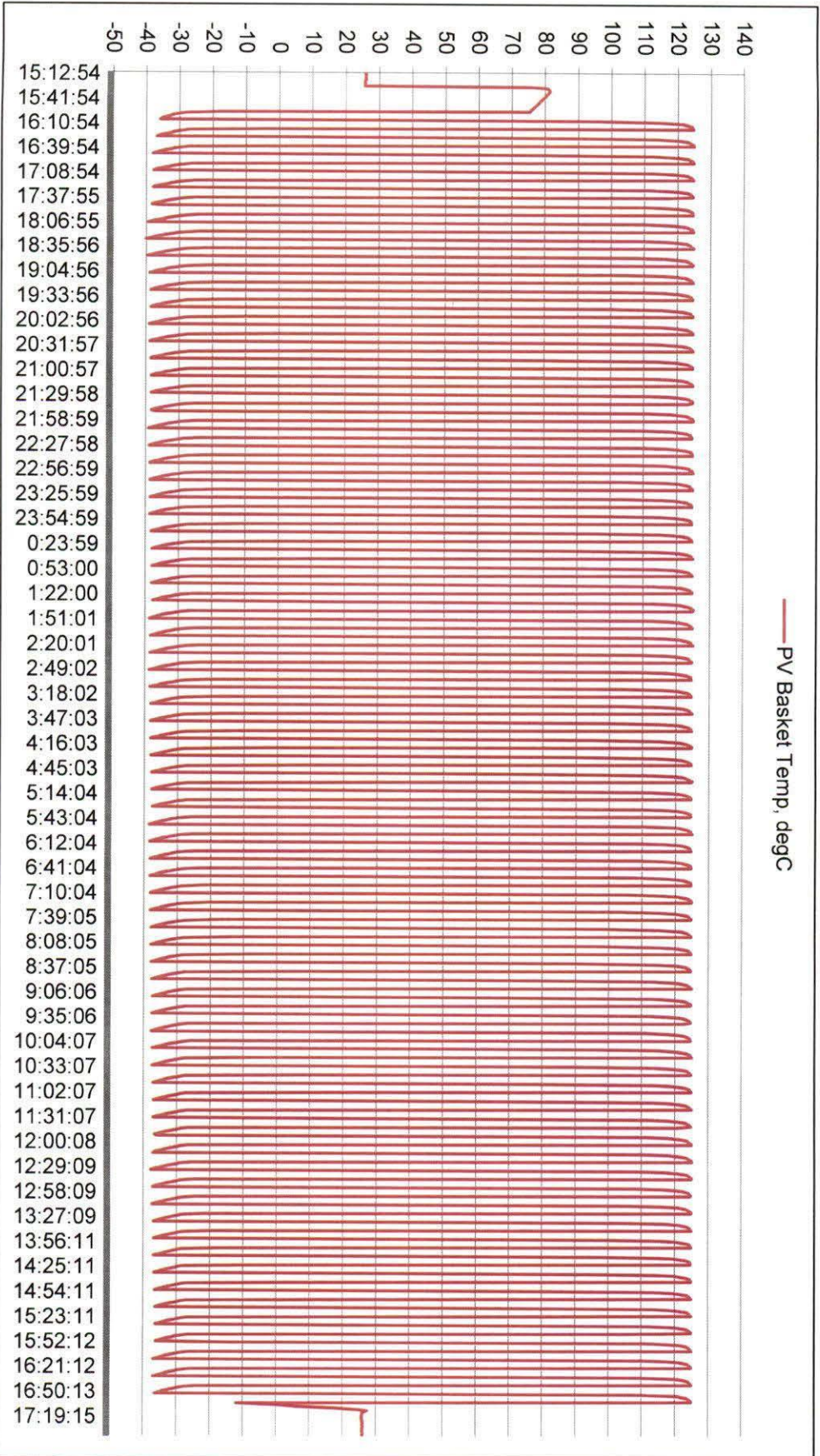
Test in Chamber # 42



SANTA CLARA, CALIFORNIA

QUEST
LABORATORIES

Temperature Shock Test



07/10 ~ 07/11

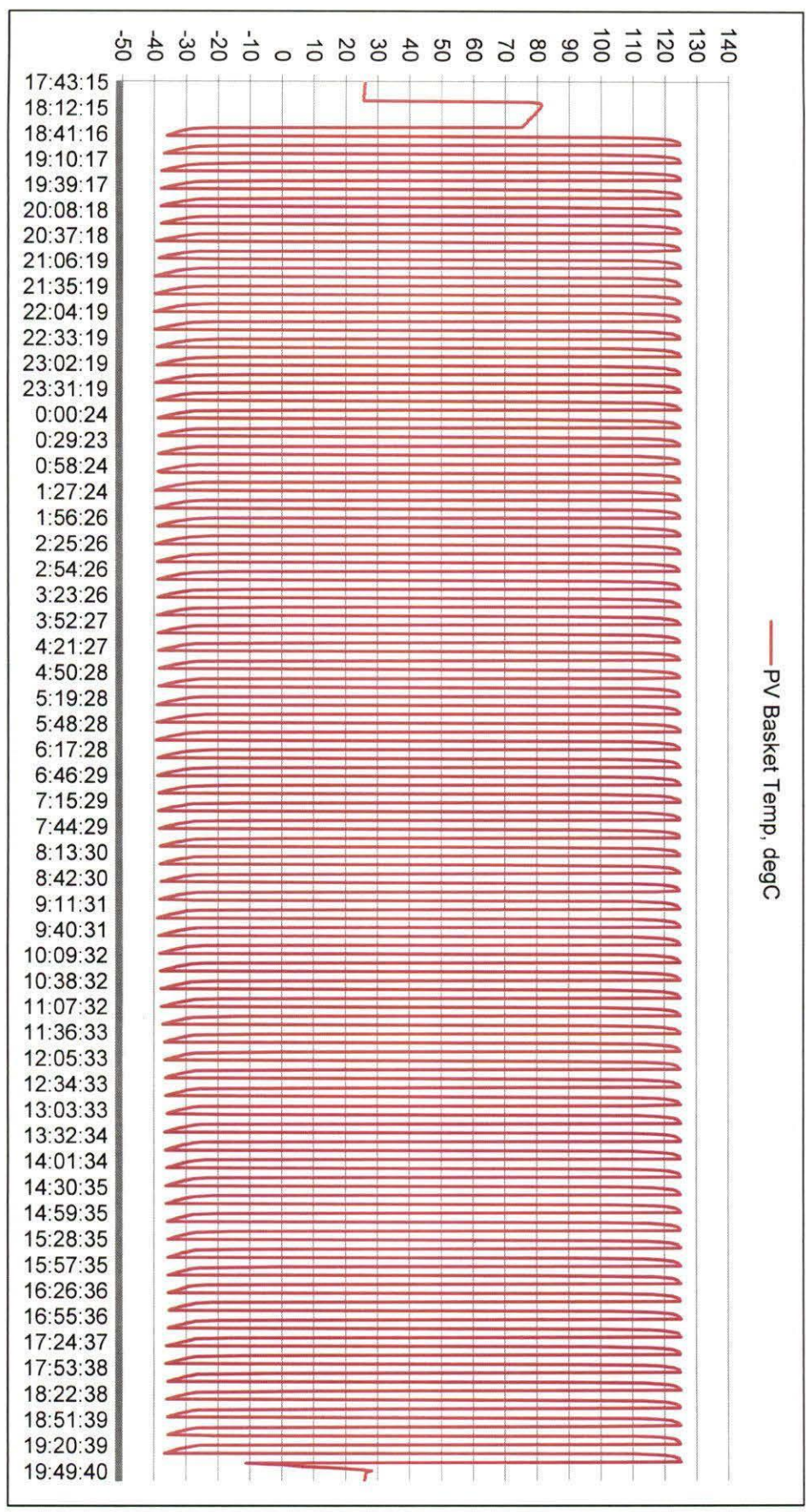
JOB NO. : QL-21-0516

Test in Chamber # 42



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LABORATORIES
SANTA CLARA, CALIFORNIA

Temperature Shock Test



QL-TTS-152 10/26/2018

JOB NO. : QL-21-0516

Test in Chamber # 42

07/11 ~ 07/12

CHAMBER EQUIPMENT LIST



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CLIENT: inSync MEMS Mirror			P.O. No.: 119190			
			JOB NO: QL-21-0516			
Chamber #	Description	Make and Model	Serial #	Asset #	Cal Date	Due Date
35	Chamber (Temp)	Associated BK3108	8914	QL-0339	N/A	N/A
	Data Recorder	Opto 22 SCADA System #1	CV-12345	QL-0392	06/12/2020	08/12/2021
	Profile Controller	Watlow F4DH-CKA0-01AE	002608-1042	QL-1042	05/14/2021	05/14/2022
	Temperature Sensor	RTD PT-100, OMEGA	T022	QL-0997	05/14/2021	05/14/2022
	Air Velocity Map	Associated BK3108	8914	QL-0339	05/22/2020	07/22/2021
40	Chamber (Temp)	TestEquity, Mod. 1007C	S/N 10348	QL-0474	N/A	N/A
	Data Recorder	Opto 22 SCADA System #2	Q014	QL-0967	07/11/2020	08/11/2021
	Profile controller	Watlow F4SH-CAA0-01RG	001470-9951	QL-0899	05/11/2021	05/11/2022
	Temperature Sensor	TC, Type T, OMEGA	53	QL-1043	05/11/2021	05/11/2022
	Air Velocity Map	TestEquity, Mod. 1007C	S/N 10348	QL-0474	05/06/2021	05/06/2022
42	Chamber (Temp/Shock)	Thermotron, Mod.ATS-195-V-5-5-LN2, 460VAC, 55A, 3 ph	16801	QL-0497	N/A	N/A
	Data Recorder	Opto 22 SCADA System #2	Q014	QL-0967	07/11/2020	08/11/2021
	Profile Controller	Watlow F4DH-CCCC-01RG	01372-9951	QL-0404	11/12/2020	11/12/2021
	Temperature Sensor	TC Type T, OMEGA (CH1)	48	QL-1000	11/12/2020	11/12/2021
	Temperature Sensor	TC Type T, OMEGA (CH2)	49	QL-1001	11/12/2020	11/12/2021
	Temperature Sensor	TC Type T, OMEGA (CH3)	50	QL-1002	11/12/2020	11/12/2021
	Air Velocity Map	Thermoshock, Thermotron, Mod.ATS-195-V-5-5-LN2, 460VAC, 55A, 3 ph	16801	QL-0497	07/09/2020	08/09/2021

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Quanta Laboratories Test Report

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Quanta Laboratories is only responsible for the processes and data resulting from testing at Quanta Laboratories.

Quanta Laboratories is not responsible for verifying data supplied by the Customer. Customer supplied data, equipment, items, and personnel are identified in the report by the symbol "*" and accompanying footnote.

Issue Date		Author(s)	Description
07/15/2021		Quan Pham George Sun	Initial Report Release
Revision Number	Revised Date	Revised by	Description of Revision

End of Report
QL-21-0516
