

Installation Qualification Protocol

Document # 730004135

Version # 03

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Test Script #	IQ-01	IQ Test Name:	Associated Documentation Verification	
Equipment #	TE0084050-18	Equipment Name:	CPSM Final Test	
Installation Site: Venture, Singapore				
Purpose: To verify that supporting documentation is available prior to the completion of qualification. Test Execution: - List all applicable documents (Preventive Maintenance, Calibration, Operating Procedures, Test Specification Procedures, Manufacturing Procedures, etc.) under the Document type header, then complete the table below. Rows may be added/removed as needed. - All applicable documents must have a status of Ready, Pre-Rel-Prod, or Release General in SAP. If applicable documents are unavailable in SAP state why in the comments section. Objective Evidence: - Completed IQ-01 Test Script Data Sheet - SAP screenshots of below available document(s)				
Document Type	Title, Doc. #, Version/Revision #		Status in SAP	Initial & Date
TSP	CPSM Final Test Procedure 735002984 Rev. T, Ver. 15			
CAL	CPSM Final Test Maintenance Procedure 735003028 Rev. E, Ver. 04			
Comments:				
Overall Test Conclusion			Document No.: _____ Iteration No.: _____ Attachment: _____ Page: ____ of ____	
☐ Pass ☐ Fail				

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Test Script #	IQ -02	IQ Test Name:	Site Verification		
Equipment #	TE0084050-18	Equipment Name:	CPSM Final Test		
Installation Site: Venture, Singapore					
Purpose: To verify the location in which the test equipment is to be installed is suitable for use. Test Execution: - List additional applicable parameters in the Parameters column. Rows may be added as needed. - Using the applicable equipment documentation, define the specification(s) in the Acceptance Criteria column. - Verify and/or measure the applicable parameters and complete the Table below. Do not delete any of the listed defined parameters. Enter N/A for any parameter or cell that is not used or applicable. The reason for why the parameter is not used or applicable shall be explained within the corresponding Installation Qualification Report. Objective Evidence: - Completed IQ-02 Test Script Data Sheet - Photo(s) of the work area, as applicable - The source of each Acceptance Criterion shall be referenced in the IQR if stored in SAP. If not in SAP objective evidence specifying the Acceptance Criterion shall be provided in or as an attachment to the IQR. - Copies of calibration certificates for measurement tools, if applicable					
Parameters	Acceptance Criteria	As Found	Pass/Fail	Initial & Date	
Ambient Temperature	4 – 40 °C	22.6C	Pass		
Relative Humidity	20 – 80 % non condensing	52%	Pass		
Electrical Supply	90 – 264 VAC 47 – 63 Hz	223.8VAC 49.97Hz	Pass		
Electrical Outlets	≥ 5	6	Pass		
Network Available	≥ 1	1	Pass		
Workspace	Adequate space for testing and service		Pass		
Test Station Bench	Large and strong enough to support all equipment		Pass		
Comments: Temperature, humidity, and electrical supply specified in 721001299. - Ambient temperature/humidity measured using a Humidity/Temp Indicator, Serial Number: CC8451 - Electrical supply measured using a Multimeter, Serial Number: 23372874 Note: If the electrical supply range or tolerance is not specified for voltage and/or frequency, a tolerance of ±5% may be used in accordance with ANSI C84.1 – Voltage Tolerance Standard					
Overall Test Conclusion			Document No.: _____ Iteration No.: _____ Attachment: _____ Page: ____ of ____		
☐ Pass ☐ Fail					

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Test Script #	IQ-03	IQ Test Name:	Instrumentation Calibration Verification
Equipment #	TE0084050-18	Equipment Name:	CPSM Final Test
Installation Site: Venture, Singapore			
Purpose: To verify that all critical instruments are in the calibration database and that a calibration and/or a preventive maintenance has been performed, as appropriate. Test Execution: - List all critical instruments/components and/or sub-systems that require calibration and/or preventive maintenance in the Description column. Rows may be added as needed. - Verify that all listed critical instruments/components have had a preventive maintenance and/or calibration performed in accordance with the PM and/or Calibration procedure(s) or by an outside source, and are listed within the associated calibration database, then complete the table below. Objective Evidence: - Completed IQ-03 Test Script Data Sheet - Copies of calibration and/or maintenance certificates - Screen captures from the associated Calibration database			
Description	Asset #	Cal/PM Dates	Initial & Date
CPSM Final Test System	W1-17GC0117	Last Cal/PM: 16 Dec 2020 Cal/PM Due: 16 Dec 2021	
Waters Acquity Column Manager	W1-16GC0045	Last Cal/PM: 13 Dec 2020 Cal/PM Due: 13 Dec 2021	
Waters Acquity BSM	W1-16GC0044	Last Cal/PM: 12 Dec 2020 Cal/PM Due: 12 Dec 2021	
Waters Acquity TUV Detector	W1-16GC0046	Last Cal/PM: 08 Dec 2020 Cal/PM Due: 08 Dec 2021	
Comments:			
Overall Test Conclusion ☐ Pass ☐ Fail		Document No.: _____ Iteration No.: _____ Attachment: _____ Page: ____ of ____	

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Test Script #	IQ-04	IQ Test Name:	Test Software and Instrument Firmware Version		
Equipment #	TE0084050-18	Equipment Name:	CPSM Final Test		
Installation Site: Venture, Singapore					
Purpose: To verify that the installed software/firmware is correct per the applicable design and/or operational document(s). Test Execution: - List all relevant Equipment software and/or instrument firmware in the Description column. Specify the associated part number for the instrument firmware, if applicable. Rows may be added/removed as needed. - List the associated required equipment software and/or critical instrument/internet connection sharing firmware version(s), as defined in the applicable design/operational document(s), in the Acceptance Criteria column. - Verify that the software version displayed on the Operator Interface of the program and/or the firmware loaded on the instruments/PC match the acceptance criteria identically, if applicable, then complete the table below. Objective Evidence: - Completed IQ-04 Test Script Data Sheet - Identify and/or provide a screen capture/print out/copy of the applicable design/operational document that defines the required software/firmware version(s) within or as an attachment to the associated Installation Qualification Report. - Screen capture and/or test record displaying/indicating the software and/or firmware version(s), as applicable					
Description	Acceptance Criteria	As Found	Pass/Fail	Initial & Date	
Test Equipment Software	Version: 1.03	Version: 1.03	Pass		
Comments: Test equipment software version specified in 735002984.					
Overall Test Conclusion			Document No.: _____ Iteration No.: _____ Attachment: _____ Page: ____ of ____		
☐ Pass ☐ Fail					

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Test Script #	IQ-05	IQ Test Name:	General Safety and Alarms	
Equipment #	TE0084050-18	Equipment Name:	CPSM Final Test	
Installation Site: Venture, Singapore				
Purpose: To verify that the equipment can operate in a safe manner, within its designated location. Test Execution: - List any additional safety related conditions or alarms in the Safety Inspection column, such as: guarding, interlocks, thermal or mechanical safety, chemical, secured gas tanks, restart or power loss, emergency stop, environmental exhaust, electrical safety, noise, safety labels, etc. Rows may be added as needed. EH&S shall be consulted as necessary. - List the associated safety requirement(s)/specification(s) in the Acceptance Criteria column. - Perform an inspection/test of the equipment to assess its safety related conditions, then complete the table below. Objective Evidence: - Completed IQ-05 Test Script Data Sheet - Photo(s) of the secured glass bottles, tanks, etc., if applicable - The source of any applicable Acceptance Criterion shall be summarized in the IQR if stored in SAP. If the source is not stored in SAP, at a minimum the page specifying the applicable Acceptance Criterion shall be provided as an attachment.				
Safety Inspection		Acceptance Criteria	Pass/Fail	Initial & Date
Mechanical Safety/ Pinch Points/Sharp Edges		None Found (or mitigated appropriately)	Pass	
Glass Bottles		Secure	Pass	
Waste Tanks		Secure and located below the system	Pass	
Emergency Stop		System ceases operation upon depressing the Emergency Stop button	Pass	
Guarding		Shielding in place to prevent hazard during operation	Pass	
Comments:				
Overall Test Conclusion			Document No.: _____ Iteration No.: _____ Attachment: _____ Page: __ of __	
☐ Pass ☐ Fail				

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Test Script #	IQ-06	IQ Test Name:	Functional Verification	
Equipment #	TE0084050-18	Equipment Name:	CPSM Final Test	
Installation Site: Venture, Singapore				
Purpose: To verify that the system operates as expected. Test Execution: - Select the UUT(s) or tests to be performed as defined within the Installation Qualification Section of 730001835. - List the Part Number and Serial Number, if applicable, in the UUT Part Number/Serial Number column. - Define the appropriate Acceptance Criteria within the Acceptance Criteria column. - Perform a test of the UUT(s), verify the Acceptance Criteria, then complete the table below. If an associated Test Record is being used as objective evidence the Header/Footer information should be verified for accuracy. Objective Evidence: - Completed IQ-06 Test Script Data Sheet - Copy of the Test Record(s) for the UUT(s), as applicable - The UUT(s) selected for this Test Script and the reasoning for why it/they were selected shall be summarized within the associated Installation Qualification Report. - If this Acceptance Criteria is other than "All required CTQ Specification measurements result in a Pass" then it shall be summarized within the associated VAF, Process Validation Plan, and/or Installation Qualification Report. - For systems that download firmware to product the BOM showing the firmware requirement shall be provided within the IQR.				
UUT Part Number/Serial Number		Acceptance Criteria	Pass/Fail	Initial & Date
Part Number: 186015085 Serial Number: D21FTP387G		All required CTQ Specification measurements result in a Pass	Pass	
		UUT Firmware Version: 1.71.395	Pass	
Comments:				
Overall Test Conclusion ☐ Pass ☐ Fail			Document No.: _____ Iteration No.: _____ Attachment: _____ Page: ____ of ____	

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Appendix A: TRAINING RECORD

Document #	735002984	Document Title	CPSM Final Test	Version	15
				Revision	T

☒ Read and Understood

By signing you acknowledge that you have reviewed, understand, and agree to comply with the policies and practices of the procedure defined above.

[illegible]

Document No.: _____
Iteration No.: _____
Attachment: _____ Page: ____ of ____