

HuaZhen Luo

From: Edwin Koh
Sent: Monday, 22 June, 2020 08:47
To: Alan Tan
Cc: Ee Ling Lim; HuaZhen Luo
Subject: FW: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

Hi Alan,

We had a situation with our flow cell tester that caused production in past 2 weeks. After troubleshoot, we had to replace the old golden unit 2998 detector (G08998943N) with a new 2998 detector (F20998147A) as the current consigned tester is beyond repair.

The cost of the F20998147A is \$3077.47 versus upgrade which is about \$2881.51. As this is a 2008 vintage 2998 detector (12 years old) build by US so I do not see any value to refurbished.

We will buy the new tester F20998147A to replace the old asset and scrap the existing one.

Do we need to raised a capex for the F20998147A or via project tooling?
Appreciate your advice.

Thanks
Edwin

From: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>
Sent: Friday, June 19, 2020 17:47
To: HuaZhen Luo <HuaZhen_Luo@waters.com>; Edwin Koh <Edwin_Koh@waters.com>; Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>
Cc: Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Niu Niu <niu.niu@flex.com>; Amy Xu Xia Jie <amy.xu@flex.com>; Gary Lai Yam Bee <yambeegary.lai@flex.com>; Aldwin Pilapil <aldwin.pilapil@flex.com>; Kim Seng Chua <kimseng.chua@flex.com>; Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Pratheush Paleri <pratheush.paleri@flex.com>
Subject: [EXT] RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

ATTENTION: This email originated from outside of the organization. Please do not open any attachments or click any links unless you recognize the sender and know the content is safe.

Hi Hua Zhen,

The 2998 Test Detector unit SN G08998943N have difficulty of recovery. Below were the action taken to recover but still fail.

No	Summary of Actions taken	Noise reading	Result
1	Re-optimization and re alignment done on optic bench (Energy Reading:112583)	173 μ AU,185 μ Au,210 μ AU	Fail
2	Replaced ASSY, CABLE, CPU TO PREAMP	117 μ AU,135 μ Au,112 μ AU	Fail
3	Replaced ASSY, FILTER FLAG, SFC PDA	120 μ AU,131 μ Au,118 μ AU	Fail
4	Replaced Power supply	81 μ AU,101 μ Au,98 μ AU	Fail
5	Replaced Lamp Power supply	128 μ AU,119 μ Au,126 μ AU	Fail
6	Replaced ASSY, PCB 2998 PDA PERSONALITY	186 μ AU,109 μ Au,165 μ AU	Fail
7	Replaced LAMP Housing, Heat shield, Plate. Re-optimization and re-alignment done on optic bench (Energy Reading : 117324)	98 μ AU,139 μ Au,176 μ AU	Fail
8	Swap charge amp and PDA with golden unit	101 μ AU,202 μ Au,168 μ AU	Fail
9	Replaced Aperture holder 2998	221 μ AU,122 μ Au,182 μ AU	Fail
10	Re-optimization and re alignment done on optic bench (Energy Reading : 115403)	182 μ AU, 243 μ Au, 215 μ AU	Fail

If you are OK, I suggest upgrade this G08998943N using the present materials and firmware.

Cost of the 2998 minus kit sheet metal & Shipping Box is US\$**2,881.51**

Current price of full 186002998		3,077.47
Items to be excluded:		
WAT-289002948-F	Kit sheetmetal	182
WAT-290001105-B	Shipping Box	13.96
	Net Cost of the unit	2,881.51

This may speed up the recovery of the unit. Once s this is done we can release back to Production SN **F20998147A**.

Pls advise,

flex

Joel Mamalateo Deduyo

Senior Test Engineer

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From: HuaZhen Luo <HuaZhen_Luo@waters.com>

Sent: Thursday, June 18, 2020 11:40 AM

To: Edwin Koh <Edwin_Koh@waters.com>; Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>; Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

Cc: Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Niu Niu <niu.niu@flex.com>; Amy Xu Xia Jie <amy.xu@flex.com>; Gary Lai Yam Bee <yambeegary.lai@flex.com>; Aldwin Pilapil <aldwin.pilapil@flex.com>; Kim Seng Chua <kimseng.chua@flex.com>; Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Pratheush Paleri <pratheush.paleri@flex.com>

Subject: RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

Hi Joel/Team,

We have checked with Milford by raising OESR 204156. Milford mentioned that this is a like for like replacement, so no further qualification required as per Test Equipment Qualification Procedure 730001835 section 8.2.2.1.

So please continue your testing on this replacement 2998 detector (SN: F20998147A) and record next 50 pcs of unit results and serial number.

We're going to replace this old 2998 detector if it's beyond repair, please send us the details regarding the replacement unit and justification to close this OESR.

Thanks

Luo HuaZhen
Senior Test Engineer

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From: Edwin Koh <Edwin_Koh@waters.com>

Sent: Wednesday, 17 June, 2020 15:43

To: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>; HuaZhen Luo <HuaZhen_Luo@waters.com>; Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

Cc: Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Niu Niu <niu.niu@flex.com>; Amy Xu Xia Jie <amy.xu@flex.com>; Gary Lai Yam Bee <yambeegary.lai@flex.com>; Aldwin Pilapil <aldwin.pilapil@flex.com>; Kim Seng Chua <kimseng.chua@flex.com>; Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Pratheush Paleri <pratheush.paleri@flex.com>

Subject: RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

Hi Joel,

Went down to review the proposed arrangement with Phani and Shamsul. No concern with the recommendation.

HuaZhen shall raise an OESR request to cover this change with Milford but expect to be approve. We will follow up with US.

Aside to Phani, please proceed to test 5 units of flowcell using the new F20998147A. We can test first and wait for approval before ship. Do not envision much documentation required though.

Thanks
Edwin

From: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>

Sent: Monday, June 15, 2020 18:10

To: Edwin Koh <Edwin_Koh@waters.com>; HuaZhen Luo <HuaZhen_Luo@waters.com>; Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

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Subject: [EXT] RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

ATTENTION: This email originated from outside of the organization. Please do not open any attachments or click any links unless you recognize the sender and know the content is safe.

Hi Edwin,

The test result come out early.

Pls. refer to attached: 2998 Test Detector (inside clean room)

PN : 186002998

SN : G08998943N

Photo : for failed test result Noise Test Failed Clean Room @ 183.111 μ AU (Specs: less than 7.000 μ AU)

To use as temporary replacement:

2998 Test Detector

PN: 186002998

SN: F20998147A (Noise Value @ 3.15 μ AU).

I am now swapping the flow cell of the 2998 detector from clean room (G08998943N) with Final Test unit (F20998147A) and rerun the same test.

If the G08998943N with known good flow cell failed Noise Test inside clean room , mean the 2998 Test Detector have defect and need to continue the trouble shooting.

RESULT: The unit fail (refer to G08998943N Noise test failed @ 176.817 μ AU

If F20998147A with flow cell from suspected defective 2998 detector PASS means need to concentrate on 2998 Test Detector G08998943N chassis have defect and need to continue the trouble shooting.

RESULT: The unit pass using the G08998943N Flow Cell

With the result, I conclude that we need to continue troubleshooting the G08998943N and have a temporary replacement of 2998 Test Detector .

For Your Update,



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From: Joel Mamalateo Deduyo
Sent: Friday, June 12, 2020 5:10 PM
To: Edwin Koh <Edwin_Koh@waters.com>; HuaZhen Luo <HuaZhen_Luo@waters.com>; Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>
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Subject: RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

Hi Edwin,

I will send the information as an assessment information on Monday as we don't have available 186002998 unit to run the Final Test.
2998 Test Detector
PN : 186002998
SN : G08998943N
Photo : for failed test result

To use as temporary replacement:
2998 Test Detector
PN: 186002998

SN: TBD after build on Monday
Photo : Test result as per ASP# 289001405 on how to test NOISE as per OPER 9
Final Test Record: after the flow-cell test PASS, need to have a Final Test result.

Thanks and Best Regards,



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Senior Test Engineer

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From: Edwin Koh <Edwin_Koh@waters.com>

Sent: Friday, June 12, 2020 10:43 AM

To: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>; HuaZhen Luo <HuaZhen_Luo@waters.com>; Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

Cc: Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Niu Niu <niu.niu@flex.com>; Amy Xu Xia Jie <amy.xu@flex.com>; Gary Lai Yam Bee <yambeegary.lai@flex.com>; Aldwin Pilapil <aldwin.pilapil@flex.com>; Kim Seng Chua <kimseng.chua@flex.com>; Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Pratheush Paleri <pratheush.paleri@flex.com>

Subject: RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

Hi Joel,

To agree to this request, we first need to assess the noise failure is related to tester before deciding to switch a new detector. It is failing for noise spec, so how it conclude to be related to tester?

We cannot simply just switch to another detector and say it good to go. Each tester undergo qualification to validate its performance. A TMD might have to raised. Also, can you provide the serial no# of the detector model you request to switch to?

Thanks
Edwin

From: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>

Sent: Thursday, June 11, 2020 13:45

To: HuaZhen Luo <HuaZhen_Luo@waters.com>; Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

Cc: Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Niu Niu <niu.niu@flex.com>; Amy Xu Xia Jie <amy.xu@flex.com>; Gary Lai Yam Bee <yambeegary.lai@flex.com>; Aldwin Pilapil <aldwin.pilapil@flex.com>; Kim Seng Chua <kimseng.chua@flex.com>; Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Pratheush Paleri <pratheush.paleri@flex.com>

Subject: [EXT] RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

ATTENTION: This email originated from outside of the organization. Please do not open any attachments or click any links unless you recognize the sender and know the content is safe.

Hi Hua Zhen,

The 2998 Detector unit **(SN G08998943N)** for Flow cell Tester may take some time to recover. To mitigate the shipment issue, it is recommended to use and alternative unit of 2998 to perform the Noise test inside clean room. We will record the units that will go to this process. Belo reference to ASP# 289001405 on how to test NOISE as per OPER 9, with 2998 Detector.

<u>OPER</u>	<u>OPERATION DESCRIPTION</u>	<u>TOOL NUMBER/DESCRIPTION</u>
-------------	------------------------------	--------------------------------

9.0	Load FlowCell into 2998 Test Detector	2998 DETECTOR PC WITH CONSOLE PROGRAM
-----	---------------------------------------	--

- | | | |
|--|--|--|
| | <ul style="list-style-type: none"> ◦ Double Click Acquity Console Program ◦ Click PDA Detector – on left side ◦ Click TROUBLE-SHOOT from top ◦ Click SERVICE MODE and type in 1147 – Click OK • Click TROUBLE-SHOOT and then select NOISE AND DRIFT • In RUN TIME box, change value to 5.0 min • Click Start • Noise should be less than 7.000 • Record serial # and noise value in excel spreadsheet • Click MAINTAIN then click READ ENERGY • Check box – CONTINUOUS READ • Set Wavelength to 230 • Click READ • Record Energy value at 230 Wavelength in excel spreadsheet • Click STOP then Click CLOSE | |
|--|--|--|

SHUT LAMP OFF AT END OF DAY

The risk associated with the change is LOW / MINOR as the current assembly 186002998 is design as same model used in 2998 test detector (SN: G08998943N) and used since product transferred to Flex

1. Process – There will no process change .
2. Product – There are no product changes.
3. Materials – There is a change of material.
4. Test – There is no change of test process.

No deviation required at Flex Kallang and shall return to old 2998 test detector SN: G08998943N, once complete the repair.

Final Test will cover this Noise test too as the main gate. Once the unit pass we can ship the units.

Best Regards,



Joel Mamalateo Deduyo

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From: HuaZhen Luo <HuaZhen_Luo@waters.com>

Sent: Wednesday, June 10, 2020 2:42 PM

To: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>; Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

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Subject: RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

Hi Joel,

As per discussion in the morning, please kindly send OESR with pictures, such as screenshot of error, set up, etc. It will help team to under the request better. And since this test bed is actually a 2998 Detector and your site is building this detector. So I believe you can manage to fix it.

Please kindly update us once this 2998 test unit is repaired.

Thank you

Luo HuaZhen
Senior Test Engineer

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From: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>

Sent: Tuesday, 9 June, 2020 13:46

To: Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

Cc: Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Niu Niu <niu.niu@flex.com>; Amy Xu Xia Jie <amy.xu@flex.com>; Gary Lai Yam Bee <yambeegary.lai@flex.com>; Aldwin Pilapil <aldwin.pilapil@flex.com>; Kim Seng Chua <kimseng.chua@flex.com>; Nallajanula Phani Bhushan

<phanibhushan.nallajanula@flex.com>; Pratheush Paleri <pratheush.paleri@flex.com>

Subject: [EXT] RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

ATTENTION: This email originated from outside of the organization. Please do not open any attachments or click any links unless you recognize the sender and know the content is safe.

Hi Siddarth,

I missed the attachment yesterday. Refr to attached

Best Regards,



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From: Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>

Sent: Tuesday, June 9, 2020 8:37 AM

To: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

Cc: Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Niu Niu <niu.niu@flex.com>; Amy Xu Xia Jie <amy.xu@flex.com>; Gary Lai Yam Bee <yambeegary.lai@flex.com>; Aldwin Pilapil <aldwin.pilapil@flex.com>; Kim Seng Chua <kimseng.chua@flex.com>; Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Pratheush Paleri <pratheush.paleri@flex.com>

Subject: RE: OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

Hi Joel,

I don't see the OESR attachment. Can you please attach the OESR.

Thanks

Sid

Siddharth Udayshankar
Product Assurance Engineer

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From: Joel Mamalateo Deduyo <joelmamalateo.deduyo@flex.com>

Sent: Monday, June 08, 2020 18:40

To: Siddharth Udayshankar <Siddharth_Udayshankar@waters.com>; Ops_Wppl_Support <Ops_Wppl_Support@waters.com>

Cc: Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Niu Niu <niu.niu@flex.com>; Amy Xu Xia Jie <amy.xu@flex.com>; Gary Lai Yam Bee <yambeegary.lai@flex.com>; Aldwin Pilapil <aldwin.pilapil@flex.com>; Kim Seng Chua <kimseng.chua@flex.com>; Yeehwa Chan <Yeehwa_Chan@waters.com>; Nallajanula Phani Bhushan <phanibhushan.nallajanula@flex.com>; Pratheush Paleri <pratheush.paleri@flex.com>; Eugene Tan <Eugene_Tan@waters.com>

Subject: [EXT] OESR TE89273-1 2998 Flow Cell Tester Down due to Noise Failure (200 uAU)

Importance: High

ATTENTION: This email originated from outside of the organization. Please do not open any attachments or click any links unless you recognize the sender and know the content is safe.

Hi Ops_Support,

Today we encounter the TE82973-1 facing Noise Failure.

1. Problem Statement.

- 2998 Flow Cell not able to pass Noise Test (200 uAU) inside at 2998 Test Detector..(specs < 7uAU

2. Acceptance criteria that is not met. (e.g. relevant specification number and revision)

- UUT shall pass at Noise Test with < 7.000 uAU

3. Relevant records (e.g. Incomin QA, Test Records, Photos, trackise NCRs numbers and related issue)

- NA.

4. Info on whether this issue impacts revenue.

- may impact revenue if not able to recover tester in time

Best Regards,



Joel Mamalateo Deduyo

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