Thermo Fisher Scientific

En Vallaire, 1024 Ecublens, Switzerland
Tel : **(41) 21 694 71 11** **Fax :** **(41) 21 694 71 12**
Field Service : **(41) 21 694 75 00** **E-Mail :** **customer@thermofisher.com**

QUALITY ASSURANCE & CALIBRATION REPORT

QC/QA/CA Report

Customer : HONDA OF SOUTH CAROLINA / US

Instrument Nr. : ARL 3460 - 6788

Computer Nr. : 19011 - 18253

Place & Date :

Ecublens, the 05 March 2015

Quality assurance performed by :

Edgar Vicente

Avertissement à nos clients

Ce rapport d'essai est un document interne Thermo Fisher Scientific destiné à notre ingénieur de service. Il doit lui faciliter le travail lors de l'installation et la mise en service de notre appareil dans vos laboratoires.

Nous vous prions de bien vouloir le lui remettre à son arrivée.

Bemerkung für unsere Kunden

Dieser Versuchrapport ist ein internes Thermo Fisher Scientific Dokument, unserm Service-Ingenieur zugedacht.
Dieses soll ihm die Arbeit anlässlich der Installation sowie der Inbetriebnahme unseres Gerätes in Ihrem Labor erleichtern.

Wir bitten Sie, ihm dieses Dokument bei seiner Ankunft zu überreichen.

Advice to our customers

This testing report is an internal Thermo Fisher Scientific document intended to our service engineer. In order to make his work easier when installing and working up our instrument in your laboratories.

Please hand it over to him on his arrival.

Informations stored in OXSAS

The following instrument informations are contained in the OXSAS Database

Calibrated method(s) for concentration analysis
Methods for intensity measurments; for service engineer only
Standardisation update batch(es)
All measured values during QA/calibration process

Report of measured concentrations with standard samples

C:\Thermo\OXSAS_DATA\QA_CA_Report\C3466788.pdf

Software options list is available on the OXSAS distribution disk

Analytical programme

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al **Lines :** 13

Chn	Elem	Line	Ord	Position	Slit	TRS	SDat	Al Min	Max			
5	**Al4**	305.47	2	610.94	75			Int Std				
1	**Cr4**	425.43	1	425.43	25			0.00002	1.0			
2	**Cu9**	510.55	1	510.55	50			0.02	15.0			
11	**Fe7**	371.99	2	743.98	25			0.0001	3.0			
3	**Mg1**	279.08	2	558.16	50			0.00005	3.0			
13	**Mn5**	403.45	2	806.90	25			0.00002	3.0			
4	**Na1**	588.99	1	588.99	37			0.000007	0.1			
9	**Ni6**	341.47	2	682.94	25			0.000025	5.0			
10	**Pb4**	368.34	2	736.68	25			0.00003	2.0			
12	**Si4**	390.55	2	781.10	50			0.02	27.0			
6	**Sn5**	317.51	2	635.02	25			0.00016	20.0			
8	**Ti4**	337.28	2	674.56	25			0.000006	1.0			
7	**Zn4**	330.26	2	660.52	37			0.00008	10.0			

Calibrations

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al

Base : Al

- **CAL-34-Al-04** Al/Si/Cu 4xxx series

- Delivers with the certificats.

BEC & DL

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al

Line	Wavelength nm	Chn	BEC_ppm	LOD_ppm	Type	Std	Window	Source Cond	Repro for LOD Average	Sigma	RSD
Cr0	425.43x1	1	6.37	0.108	R	Al40	NOTRS	ALARC	0.010	0.00006	0.56
Cr4	425.43x1	1	69.70	0.956	R	Al4	NOTRS	ALSPARK	0.023	0.00011	0.46
Cu9	510.55x1	2	1694.98	16.975	R	Al4	NOTRS	ALSPARK	0.023	0.00008	0.33
Fe0	371.99x2	11	13.22	0.374	R	Al40	NOTRS	ALARC	0.009	0.00009	0.94
Fe7	371.99x2	11	168.09	3.369	R	Al4	NOTRS	ALSPARK	0.024	0.00016	0.67
Mg1	279.08x2	3	14.75	0.216	R	Al4	NOTRS	ALSPARK	0.008	0.00004	0.49
Mn0	403.45x2	13	8.18	0.177	R	Al40	NOTRS	ALARC	0.011	0.00008	0.72
Mn5	403.45x2	13	77.98	2.009	R	Al4	NOTRS	ALSPARK	0.022	0.00019	0.86
Na1	588.99x1	4	4.82	0.083	R	Al4	NOTRS	ALSPARK	0.021	0.00012	0.58
Ni0	341.47x2	9	6.28	0.225	R	Al40	NOTRS	ALARC	0.007	0.00008	1.20
Ni6	341.47x2	9	55.11	1.312	R	Al4	NOTRS	ALSPARK	0.019	0.00015	0.79
Pb0	368.34x2	10	19.73	0.466	R	Al40	NOTRS	ALARC	0.007	0.00006	0.79
Pb4	368.34x2	10	223.14	2.945	R	Al4	NOTRS	ALSPARK	0.020	0.00009	0.44
Si4	390.55x2	12	1375.54	18.742	R	Al4	NOTRS	ALSPARK	0.022	0.00010	0.45
Sn0	317.51x2	6	25.90	0.699	R	Al40	NOTRS	ALARC	0.010	0.00009	0.90
Sn5	317.51x2	6	184.55	3.059	R	Al4	NOTRS	ALSPARK	0.022	0.00012	0.55
Ti0	337.28x2	8	1.97	0.035	R	Al40	NOTRS	ALARC	0.008	0.00005	0.59
Ti4	337.28x2	8	9.31	0.154	R	Al4	NOTRS	ALSPARK	0.022	0.00012	0.55
Zn0	330.26x2	7	52.29	1.082	R	Al40	NOTRS	ALARC	0.008	0.00005	0.69
Zn4	330.26x2	7	299.19	4.761	R	Al4	NOTRS	ALSPARK	0.022	0.00012	0.53

Instrument configuration

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al **Lines :** 13

PROFIL POSITION : **Average =** 100.7 **Div.** **0 =** 84 **Div. +** 4 **Turns**

VACUUM PUMP : POMPE M2005SD OIL, ALCATEL (A042289)

Serial number : AM731684

VACUUM LOSS : 55 **uHg/h**

SOURCE + STAND : HIREP II + & MBS 301 I Manual Version V6 **ARL Hirep Number** S701999

Condition select board	Ponts	Setting
	W1	0
	W2	0
	W3	0
	W4	0

ARGON QUALITY : AR 48

ARGON FLOW : **Analyse Argon Flow :** 3.5 **l/min**

Standby Argon Flow : 0.34 **l/min**

Entry Pression : ~ 2.0 **Bar(Kg/cm2)**

FIRMWARE : **ICS :** ICS 386/U1/OE(34/44/E97) V6.0-2 14/10/04 CCS/CND-C013

CCS : NONE

SOFTWARE : OXSAS V2.1.5a

SPC Version : BASIC 9286-RP vers. 4.51.0289

Analytical configuration

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al **Lines :** 13

Base	Electrode	Petrey table	Disk table	Insulator	Electrode holder	Brush
Al	3460_2-6mm S423156	3460_W_D12 S703281	None .	3460 S418820	None .	Mo S422255
	Remark :					

Optical Layout material

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al **Lines :** 13

Mirors	A	B	C	D	Total
Total	2	4	3	4	**13**

Foots	Bot	Top	Total
Total	7	6	**13**

Slits	25	37	50	75	Total
Total	7	2	3	1	**13**

Dec.
Total

Filters	-10	-13	-14	-16	Total
Total	4	2	4	1	**11**

PMTs	39-1	39-2	40-2	Total
Total	1	9	3	**13**

Masks	GMask	Total
Total	2	**2**

Adaptors	I	II	Total
Total	5	8	**13**

Screws Adaptor		Clamps Adaptor	
AA26818	**26**	S313031	**13**

Screws		Covers		Washers	
A028013	**65**	S421267	**65**	S421267	**65**

Phototubes

TOP	**77**	**73**	**69**	**65**	**61**	**57**	**53**	**49**	**45**	**41**	**37**	**33**	**29**	**25**	**21**	**17**	**13**	**9**	**5**	**1**		**I**
	78	**74**	**70**	**66**	**62**	**58**	**54**	**50**	**46**	**42**	**38**	**34**	**30**	**26**	**22**	**18**	**14**	**10**	**6**	**2**		**III**
BOTTOM	**75**	**71**	**67**	**63**	**59**	**55**	**51**	**47**	**43**	**39**	**35**	**31**	**27**	**23**	**19**	**15**	**11**	**7**	**3**			**II**
	76	**72**	**68**	**64**	**60**	**56**	**52**	**48**	**44**	**40**	**36**	**32**	**28**	**24**	**20**	**16**	**12**	**8**	**4**			**IV**

Optical Layout place

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al **Lines :** 13

Place	Elem	Mini	Avge	Maxi	WaveLn Ord	Positi	Miror	Slit	Dec	Pmt	Adap	Filter	Int	Trs	Mask	Remark
1 Top		342	348	354			B				II					
2 Top		348	354	361			C				I					
3 Bot		354	361	367			B				II					
4 Bot		361	367	373			C				I					
5 Top		367	373	379			A				I					
6 Top		373	379	385			D				II					
7 Bot		379	385	391			A				I					
8 Bot		385	391	397			D				II					
9 Top		391	397	404			B				II					
10 Top		397	404	410			C				I					
11 Bot		404	410	416			B				II					
12 Bot		410	416	422			C				I					
13 Top	**Cr4**	**416**	**422**	**428**	**425.43 x 1**	**425.43**	**A**	**25**		**40-2**	**I**		**1**	**No**		
14 Top		422	428	435			D				II					
15 Bot		428	435	441			A				I					
16 Bot		435	441	447			D				II					
17 Top		441	447	453			B				II					
18 Top		447	453	459			C				I					
19 Bot		453	459	465			B				II					
20 Bot		459	465	471			C				I					
21 Top		465	471	478			A				I					
22 Top		471	478	484			D				II					
23 Bot		478	484	490			A				I					
24 Bot		484	490	496			D				II					
25 Top		490	496	502			B				II					
26 Top		496	502	508			C				I					

Optical Layout place

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al **Lines :** 13

Place	Elem	Mini	Avge	Maxi	WaveLn	Ord	Positi	Miror	Slit	Dec	Pmt	Adap	Filter	Int	Trs	Mask	Remark
27 Bot	**Cu9**	**502**	**508**	**514**	**510.55 x 1**		**510.55**	**B**	**50**		**40-2**	**II**		**2**	**No**		
28 Bot		508	514	520				C				I					
29 Top		514	520	526				A				I					
30 Top		520	526	532				D				II					
31 Bot		526	532	539				A				I					
32 Bot		532	539	545				D				II					
33 Top		539	545	551				B				II					
34 Top		545	551	557				C				I					
35 Bot	**Mg1**	**551**	**557**	**563**	**279.08 x 2**		**558.16**	**B**	**50**		**39-2**	**II**	**-13**	**3**	**No**		
36 Bot		557	563	569				C				I					
37 Top		563	569	575				A				I					
38 Top		569	575	581				D				II					
39 Bot		575	581	587				A				I					
40 Bot	**Na1**	**581**	**587**	**593**	**588.99 x 1**		**588.99**	**D**	**37**		**40-2**	**II**	**-16**	**4**	**No**		
41 Top		587	593	599				B				II					
42 Top		593	599	605				C				I					
43 Bot		599	605	611				B				II					
44 Bot	**Al4**	**605**	**611**	**617**	**305.47 x 2**		**610.94**	**C**	**75**		**39-1**	**I**	**-13**	**5**	**No**		**Int. Std**
45 Top		611	617	623				A				I					
46 Top		617	623	629				D				II					
47 Bot		623	629	635				A				I					
48 Bot	**Sn5**	**629**	**635**	**641**	**317.51 x 2**		**635.02**	**D**	**25**		**39-2**	**II**	**-14**	**6**	**No**		
49 Top		635	641	647				B				II					
50 Top		641	647	653				C				I					
51 Bot		647	653	659				B				II					
52 Bot	**Zn4**	**653**	**659**	**665**	**330.26 x 2**		**660.52**	**C**	**37**		**39-2**	**I**	**-14**	**7**	**No**	**GMask**	

Optical Layout place

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al **Lines :** 13

Place	Elem	Mini	Avge	Maxi	WaveLn Ord	Positi	Miror	Slit	Dec	Pmt	Adap	Filter	Int	Trs	Mask	Remark
53 Top		659	665	671			A				I					
54 Top	**Ti4**	**665**	**671**	**676**	**337.28 x 2**	**674.56**	**D**	**25**		**39-2**	**II**	**-14**	**8**	**No**		
55 Bot		671	676	682			A				I					
56 Bot	**Ni6**	**676**	**682**	**688**	**341.47 x 2**	**682.94**	**D**	**25**		**39-2**	**II**	**-14**	**9**	**No**	**GMask**	
57 Top		682	688	694			B				II					
58 Top		688	694	700			C				I					
59 Bot		694	700	706			B				II					
60 Bot		700	706	712			C				I					
61 Top		706	712	717			A				I					
62 Top		712	717	723			D				II					
63 Bot		717	723	729			A				I					
64 Bot		723	729	735			D				II					
65 Top	**Pb4**	**729**	**735**	**741**	**368.34 x 2**	**736.68**	**B**	**25**		**39-2**	**II**	**-10**	**10**	**No**		
66 Top	**Fe7**	**735**	**741**	**747**	**371.99 x 2**	**743.98**	**C**	**25**		**39-2**	**I**	**-10**	**11**	**No**		
67 Bot		741	747	752			B				II					
68 Bot		747	752	758			C				I					
69 Top		752	758	764			A				I					
70 Top		758	764	769			D				II					
71 Bot		764	769	775			A				I					
72 Bot		769	775	781			D				II					
73 Top	**Si4**	**775**	**781**	**786**	**390.55 x 2**	**781.10**	**B**	**50**		**39-2**	**II**	**-10**	**12**	**No**		
74 Top		781	786	792			C				I					
75 Bot		786	792	798			B				II					
76 Bot		792	798	803			C				I					
77 Top	**Mn5**	**798**	**803**	**809**	**403.45 x 2**	**806.90**	**A**	**25**		**39-2**	**I**	**-10**	**13**	**No**		
78 Top		803	809	815			D				II					

Attenuators & Programmable Attenuators positions

Instrument : ARL 3460 - 6788 **Customer :** HONDA OF SOUTH CAROLINA **Grating :** 1080
Base(s) : Al **Lines :** 13

*** = Bridge cutted** **' = Bottom Programmable Card**

Chn	Name	Programmable Attenuators Bit0 Position	Prog	Base(s)	Programmable Attenuators Bit1 Position	Base(s)
1	Cr4	3-10				
2	Cu9	4-14				
3	Mg1	4-14				
4	Na1	2-12				
5	Al4	4-15				
6	Sn5	2-12				
7	Zn4	2-10				
8	Ti4	2-14				
9	Ni6	2-14				
10	Pb4	2-13				
11	Fe7	2-15				
12	Si4	3-13				
13	Mn5	2-15				

Table of Contents