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	Form approved by:	
Inspected by:	**GM**	**22/07/14**
Supervisor in charge:	**TK**	**22/07/14**
	Initial	Date

J-Lab Apex Magnet Small Coil - Coil Test Record

Test Item:

Test Item:	**(1) Water Circuit Leak Test.**
Detail:	Apply water pressure of 1.5 [Mpa] to each cooling circuit for 30 minutes and check for leakage.

Unit Under Test:

Contract:	Customer	Purchase Order #	Magnet Serial Number	
	J-Labs	**881190**	**PO # 197292**	
Part:	Drawing No.	Revision	Description	
	062713-00	1	Large Coil 90° Assembly	☑
	062713-01	-	Large Coil 45° Assembly	☐
Coil Serial Number:	**89039**			

Equipment:

	Model	Serial Number	Calibration Due Date
Pressure Gauge:	**Dwyer DPGW-09**	**BSL-0004-DPG**	**23/07/2014**

Test Condition:

Date:	**22/07/2014**	[DD / MM / YYYY]
Ambient Temp:	**16.5**	[°C]
Humidity:	**71**	[%]

Criteria:

Observation:	No water leaks detected.

Results:

Pancake 1:	~~**Leaks**~~	/	**No Leaks**
Pancake 2:	~~**Leaks**~~	/	**No Leaks**
Pancake 3:	~~**Leaks**~~	/	**No Leaks**
Pancake 4:	~~**Leaks**~~	/	**No Leaks**

Strike through whatever is not applicable

Judgement:

PASS	/	~~**FAIL**~~

Strike through whatever is not applicable

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	Initial	Date

J-Lab Apex Magnet Small Coil - Coil Test Record

Test Item:

Test Item:	**(2) Water Circuit Flow Test.**
Detail:	Measure the flow rate of each cooling circuit at a pressure drop of 32.5 [PSI] and water inlet temperature of 35 [°C].

Unit Under Test:

Contract:	Customer	Purchase Order #	Magnet Serial Number	
	J-Labs	**881190**	**PO # 197292**	
Part:	Drawing No.	Revision	Description	
	062713-00	1	Large Coil 90° Assembly	☑
	062713-01	-	Large Coil 45° Assembly	☐
Coil Serial Number:	**89039**			

Equipment:

	Model	Serial Number	Calibration Due Date
Flow Meter:	**RS**	**FG5**	**10/01/2015**
Pressure Gauge:	**Dweyer DPG-09**	**BSL-0009-DPG-788**	**11/07/2015**
Pressure Gauge:	**Dweyer DPG-09**	**BSL-0009-DPG-788**	**8/05/2014**

Test Condition:

Date:	**22/07/2014**	[DD / MM / YYYY]
Ambient Temp:	**14.4**	[°C]
Humidity:	**69**	[%]

Criteria:

Measurement:	Water flow rate ≥ 3.95 [L/min] @ 32.5 [PSI] pressure drop

Results:

	Pressure [PSI]			Flow Rate
	Inlet	Outlet	Drop	[l/min]
Pancake 1:	**40.3**	**8.61**	**30.19**	**3.95**
Pancake 2:	**42.7**	**10.11**	**32.15**	**3.95**
Pancake 3:	**43.2**	**10.55**	**43.2**	**3.95**

Judgement:

PASS / ~~FAIL~~

Strike through whatever is not applicable

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	Initial	Date

J-Lab Apex Magnet Small Coil - Coil Test Record

Test Item:

Test Item:	**4-4 (1) (b) (i) Resistance Measurement of Magnet.**
Detail:	Measure the resistance of each pancake and the whole coil by 4-terminal method. Measure the temperature and correct the resistance measurement to 20 [°C].

Unit Under Test:

Contract:	Customer	Purchase Order #	Magnet Serial Number	
	J-Labs	**881190**	**PO # 197292**	
Part:	Drawing No.	Revision	Description	
	062713-00	1	Large Coil 90° Assembly	☑
	062713-01	-	Large Coil 45° Assembly	☐
Coil Serial Number:	**89039**			

Equipment:

	Model	Serial Number	Calibration Due Date
Thermometer:	**HH506RA**	**11000285**	**11/04/2015**
Power Supply:	**Isotech IPS303DD**	**3010892G3**	**23/04/2015**
Voltmeter:	**Isotech IDM72**	**25900022**	**8/05/2015**

Test Condition:

Date:	**22/07/2014**	[DD / MM / YYYY]
Ambient Temp:	**16.5**	[°C]
Humidity:	**71**	[%]

Criteria:

Measurement:	Record the resistance and temperature measurements below.
Observation:	No abnormalities

Results:

	Pancake 1	Pancake 2	Pancake 3	Coil		
R_{meas}:	**2.16**	**2.16**	**2.15**	**6.47**	[Ω]	
T_{meas}:	**17.0**	**17.0**	**17.0**	**17**	[°C]	
$R_{20°C}$:	**2.185**	**2.185**	**2.175**	**6.546**	[Ω]	

$$R_{20°C} = R_{meas} (1 + 0.00393 (20 - T_{meas}))$$

Judgement:

PASS / ~~FAIL~~

Strike through whatever is not applicable

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Supervisor in charge:	TK	22/07/14
	Initial	Date

J-Lab Apex Magnet Small Coil - Coil Test Record

Test Item:

Test Item:	**(4) Induced Voltage Test.**
Detail:	Perform a 500V impulse test on the completed coil to verify the inter-turn insulation. Record the resulting waveform.

Unit Under Test:

Contract:	Customer	Purchase Order #	Magnet Serial Number	
	J-Labs	**881190**	**PO # 197292**	
Part:	Drawing No.	Revision	Description	
	062713-00	1	Large Coil 90° Assembly	☑
	062713-01	-	Large Coil 45° Assembly	☐
Coil Serial Number:	**89039**			

Equipment:

	Model	Serial Number	Calibration Due Date
Impulse Tester:	**IWT 5000A**	**12I5A30005**	**4/12/2014**

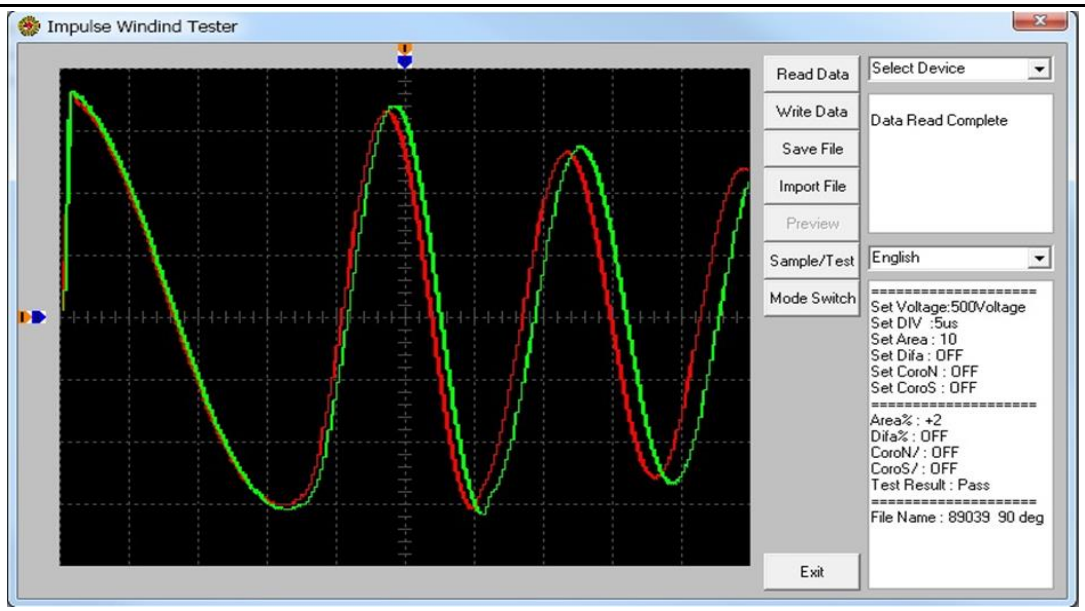
Test Condition:

Date:	**22/07/2014**	[DD / MM / YYYY]
Ambient Temp:	**17.5**	[°C]
Humidity:	**60.0**	[%]

Criteria:

Measurement:	Record the resulting waveform and insert below.
Observation:	No significant difference between the measured waveform and the reference waveform.

Results:



Judgement:

PASS	/	~~**FAIL**~~

Strike through whatever is not applicable

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J-Lab Apex Magnet Small Coil - Coil Test Record

Test Item:

Test Item:	**(5) DC Hipot Test.**
Detail:	Immerse the completed coil in tap water and then measure the leakage current between the coil terminals and the water bath at 4.8[kVDC] for 1 minute.

Unit Under Test:

Contract:	Customer	Purchase Order #	Magnet Serial Number	
	J-Labs	**881190**	**PO # 197292**	
Part:	Drawing No.	Revision	Description	
	062713-00	1	Large Coil 90° Assembly	☑
	062713-01	-	Large Coil 45° Assembly	☐
Coil Serial Number:	**89039**			

Equipment:

	Model	Serial Number	Calibration Due Date
Hipot Tester:	**Quadtech 20plus**	**S00300001272**	**5/03/2015**

Test Condition:

Date:	**22/07/2014**	[DD / MM / YYYY]
Ambient Temp:	**16.5**	[°C]
Humidity:	**71**	[%]

Criteria:

Measurement:	Record the leakage current @ 4.8 [kVDC]
Observation:	No evidence of breakdown or significant change in insulation resistance.

Results:

Leakage Current:	**0.3**	[µA] @ 4.8 [kV_{DC}]

Judgement:

PASS / ~~FAIL~~

Strike through whatever is not applicable