

Customer Information

Customer Name	Sai Sankar Gupta, K.B.
Operator Name	Sai Sankar Gupta, K.B.
Company	University of Leiden
Address	Wassenaarseweg 76
Postal Code / City / Country	2333 AL Leiden, Netherlands
Phone Contact Customer	0031715274638
Fax	
E-Mail	k.b.sai.sankar.gupta@lic.leidenuniv.nl

Bruker Information

Office	GSEC
Engineer	Narendra
Service Contract No.	
SAP Service Ticket No.	

Spectrometer Information

Order No.	442759
System	Avance Neo 750
Console Part and Serial No	HCAB-76 / 3
Coil	BR.091075110
Dewar	BD228972
Location	
TopSpin Version	TopSpin 4.1.3 - Build 17

Installation Summary

Approval

Place 2333 AL Leiden, Netherlands
Date July 13, 2023

Place 2333 AL Leiden, Netherlands
Date July 13, 2023

Sai Sankar Gupta, K.B.
Customer representative signature

Narendra
Bruker representative signature

NMR Probe

Description	Probe ID	Inspection Lot	Status
PH MAS DVT BL4	H8780_0002	2023-07-12	pass

Copies of all spectra (default and additional) are included in customer's PDF report.

Service Checklist

General Components	pass	fail	n/a
All firmware	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Software updated	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cortab	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lift / spin calibration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
He / N2 log files	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
MICS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BSMS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
AQS chassis	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shim system turbine cleaned	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Door filter(s) replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Optional Components	pass	fail	n/a
Sample Changer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
MAS controller	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High power equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LC-NMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Liquid Handler SamplePro Tube	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Micro-Imaging	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diffusion	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CryoProbe / Cryoplatfom	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BNL / BSNL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Additional cooling/heating units (like BCU1 / BCU2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LT-MAS (Low Temperature MAS equipment)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Gyrotron magnet and DNP console	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

General Test Information

Summary of Inspection Lot

Description	Probe ID	Inspection Lot
PH MAS DVT BL4	H8780_0002	2023-07-12

Experiments Measured

Sample	Experiment	Status
Z151220	Magic Angle setting, MAS (NPT_79Br_MAS_magicAngle)	pass
Z151220	Maximum spin rate testing, MAS (NPT_79Br_MAS_maxSpinRate)	pass
Z151220	Optimization of 79Br frequency (NPT_79Br_MAS_fieldsetting)	pass
Z151221	P90 1H pulse calibration, MAS (NPT_1H_MAS_p90det_1h)	pass
Z151220	P90 79Br pulse calibration, MAS (NPT_79Br_MAS_p90det_79br)	pass
Z151222	CP 1H-15N sensitivity, MAS (NPT_15N_MAS_sino_cp1h_15n)	pass
Z151224	CP 1H-31P sensitivity, MAS (NPT_31P_MAS_sino_cp1h_31p)	pass
Z151221	13C sensitivity, MAS (NPT_13C_MAS_sino_13c)	pass
Z151221	1H sensitivity, MAS (NPT_1H_MAS_sino_1h)	pass
Z151223	CP 1H-15N parameter optimization, MAS (NPT_15N_MAS_paropt_cp1h_15n)	pass

Achieved Specifications

Pulse Width

Nucleus	Sample		90° Pulse		Power Limit [W]	Method	Status
			Duration [μs]	Power [W]			
1H	Z151221	spec.	-	-	150	direct	pass
		ach.	2.85	101.0			
79Br	Z151220	spec.	-	-	250	direct	pass
		ach.	4.42	192.0			

Sensitivity

Nucleus	Sample		S/N	Remarks	Status
15N	Z151222	spec.	-	sensitivity of 1H-15N cross-polarization	pass
		ach.	66.8		
31P	Z151224	spec.	-	sensitivity of 1H-31P cross-polarization	pass
		ach.	10268.3		

Sensitivity with NS

Nucleus	Sample		S/N	FWHM [Hz]	NS	Remarks	Status
1H	Z151221	spec.	-	-	-	noise: 20 ppm variable, method: sino best	pass
		ach.	25504.0	357.4	1		
13C	Z151221	spec.	-	-	-	noise: 20 ppm variable, method: sino best	pass
		ach.	68.9	2.3	1		

Samples used for Inspection Lot

Sample	Description
Z151220	Potassium Bromide (KBr, 80 ul)
Z151221	Adamantane (50 ul)

Sample	Description
Z151222	Alpha-glycine (50 ul)
Z151223	2- ¹³ C, ¹⁵ N alpha-glycine (50 ul)
Z151224	Ammonium Dihydrogenphosphate (NH ₄ H ₂ PO ₄ , 50 ul)

Remarks / Exclusions