



## Customer Information

**Customer Name** Prof. Steven Brown  
**Operator Name**  
**Company** Department of Physics. University of Warwick  
**Address**  
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## Bruker Information

**Office** Bruker UK  
**Engineer** Haydn M Smith  
**Central Hotline Phone** +442476855200  
**Central Hotline E-Mail** customersupport.bbio.eimea@bruker.com

## Probe Information

**Order No.**  
**Contract No.**  
**Description** PH MASDVT1200S6 BL3.2 15N-11B/H NO\_/E  
**P/N** H158422  
**S/N** 0003

## Installation Summary

I, an authorized customer representative, acknowledge that the above referenced probe was installed and demonstrated to operate in accordance with the specifications mutually agreed upon by both parties. We accept the delivery and installation of this probe as specified in the purchase order and release Bruker from any further obligation, other than those obligations as specified during the warranty period. If the contract requires a formal acceptance protocol this document serves as such.

## Warranty

The warranty period commences according to the contractual agreement.

Place	CV4 7AL Coventry, United Kingdom	Place	CV4 7AL Coventry, United Kingdom
Date	April 9, 2025	Date	April 9, 2025

\_\_\_\_\_  
Prof. Steven Brown  
Customer representative signature

\_\_\_\_\_  
Haydn M Smith  
Bruker representative signature

## Spectrometer Information

Order No. HCAB-22\_00014  
 System Avance Neo 1200  
 Location  
 TopSpin Version TopSpin 4.5.0 - Build local

## NMR Probe

Description	Probe ID	Inspection Lot	Status
PH MASDVT1200S6 BL3.2 15N-11B/H NO_I/E	H158422_0003	3.2_HX_acpt	pass

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

## Installation Checklist

Installation	pass	fail	n/a	Optional Components	pass	fail	n/a
All firmware	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sample Changer	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cortab for required nuclei	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	MAS controller	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lift / spin calibration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	High power equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Customer Training</b>	<b>pass</b>	<b>fail</b>	<b>n/a</b>	LC-NMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Basic safety	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Liquid Handler SamplePro Tube	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Handling of cryogenic liquids	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Micro-Imaging	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Troubleshooting	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Diffusion	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Backup (nmr_save, Images)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	CryoProbe / Cryoplatfrom	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Introduction to IconNMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	BNL / BSNL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Assure-SST / Performance check	<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"/>
CryoProbe	<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"/>
Handling / cleaning of probe	<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"/>
He cylinder exchange	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
He compressor cooling	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
RF heating / power limits	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
RF routing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
<b>Acceptance and Warranty</b>	<b>pass</b>	<b>fail</b>	<b>n/a</b>				
Explanation of warranty	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Customer support hotlines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

## General Test Information

### Summary of Inspection Lot

<b>Description</b>	<b>Probe ID</b>	<b>Inspection Lot</b>
PH MASDVT1200S6 BL3.2 15N-11B/H NO_I/E	H158422_0003	3.2_HX_acpt

### Experiments Measured

Sample	Experiment	Status
Z151230	Magic Angle setting, MAS (NPT_79Br_MAS_magicAngle)	pass
Z151230	Maximum spin rate testing, MAS (NPT_79Br_MAS_maxSpinRate)	pass
Z151230	Optimization of 79Br frequency (NPT_79Br_MAS_fieldsetting)	pass
Z151231	Optimization of 13C frequency (NPT_13C_MAS_fieldsetting_dec1h)	pass
Z151231	P90 1H pulse calibration, MAS (NPT_1H_MAS_p90det_1h)	pass
Z151230	P90 79Br pulse calibration, MAS (NPT_79Br_MAS_p90det_79br)	pass
Z151233	P90 13C 1H-13C CP pulse calibration, MAS (NPT_13C_MAS_p90det_cp1h_13c)	pass
Z151233	P90 15N 1H-15N CP pulse calibration, MAS (NPT_15N_MAS_p90det_cp1h_15n)	pass
Z151232	CP 1H-13C sensitivity, MAS (NPT_13C_MAS_sino_cp1h_13c)	pass
Z151232	CP 1H-15N sensitivity, MAS (NPT_15N_MAS_sino_cp1h_15n)	pass
Z151231	13C sensitivity, MAS (NPT_13C_MAS_sino_13c)	pass
Z151233	CP 1H-13C parameter optimization, MAS (NPT_13C_MAS_paropt_cp1h_13c)	pass
Z151233	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	Z151231	spec.	2.70	-	260	direct	pass
		ach.	2.68	240.0			
13C	Z151233	spec.	3.90	-	120	with CP	pass
		ach.	3.72	120.0			
15N	Z151233	spec.	5.00	-	300	with CP	pass
		ach.	4.78	285.6			
79Br	Z151230	spec.	3.90	-	120	direct	pass
		ach.	3.84	120.0			

#### Sensitivity

Nucleus	Sample		S/N	Remarks	Status
13C	Z151232	spec.	-	sensitivity of 1H-13C cross-polarization	pass
		ach.	649.9		
15N	Z151232	spec.	-	sensitivity of 1H-15N cross-polarization	pass
		ach.	122.3		

#### Sensitivity with NS

Nucleus	Sample		S/N	FWHM [Hz]	NS	Remarks	Status
13C	Z151231	spec.	-	10.0	16	noise: 20 ppm variable, method: sino best	pass
		ach.	451.2	8.7	16		

**Samples used for Inspection Lot**

Sample	Description
Z151230	Potassium Bromide (KBr, 34 ul)
Z151231	Adamantane (34 ul)
Z151232	Alpha-glycine (34 ul)
Z151233	2- <sup>13</sup> C, <sup>15</sup> N alpha-glycine (34 ul)

**Remarks / Exclusions**