

nScope eMRI – Site Preparation Checklist

Thank you for purchasing an Agilent **instrument**. To get you started and to assure a successful and timely installation, please refer to this specification or set of requirements.

Correct site preparation is the key first step in ensuring that your instruments and software systems operate reliably over an extended lifetime. This document is an **information guide AND checklist** prepared for you that outlines the supplies, consumables, space and utility requirements for your equipment for your site.

Customer Responsibilities

Make sure your site meets the following prior specifications before the installation date. For details, see specific sections within this checklist, including:

- ☐ The necessary laboratory or bench space is available
- ☐ The environmental conditions for the lab as well as laboratory gases and plumbing
- ☐ The power requirements related to the product (e.g., number & location of electrical outlets)
- ☐ The required operating supplies necessary for the product and installation
- ☐ Please consult Other Requirements section below for other product-specific information.
- ☐ For more details, please consult the Agilent MRI Systems Site Planning Guide (part number 91-002718-00A), referred to as the SPG in the rest of this document.

If Agilent is delivering installation and familiarization services, users of the instrument should be present throughout these services; otherwise, they will miss important operational, maintenance and safety information.

- ☐ If customer's responsibility (check contract), customer should arrange for riggers to move the system from the delivery vehicle to the laboratory.

Important Customer Information

1. If you have questions or problems in providing anything described as a Customer Responsibilities above, please contact your local Agilent or partner support/service organization for assistance prior to delivery. In addition, Agilent and/or it's partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.
2. Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-arrange any services that have been purchased.
3. Other optional services such as additional training, operational qualification (OQ) and consultation for user-specific applications may also be provided at the time of installation when ordered with the system, but should be contracted separately.

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Dimensions and Weight

Identify the laboratory floor space before your system arrives based on the table below.

Pay special attention to the **total height and total weight requirements for all system components you have ordered**. Also pay special attention to the total weight of the modules you have ordered to ensure your laboratory floor can support this weight.

Special Notes

1. Consider the position of the 5G contour surrounding the magnet. The magnetic field in public areas must not exceed 5G. Refer to the SPG for more details.
2. Ensure that there is enough room at the service end of the magnet to load the gradient coil(s).
Minimum clearances:
7T/210, 1.60 m (5' - 3")
7T/310, 2.00 m (6' - 7")
9.4T/210, 1.80 m (5' - 11")
9.4T/310, 2.00 m (6' - 7")
3. Ensure that there is enough ceiling height in the magnet room.
Minimum ceiling heights (without AV pads):
7T/210, 277.0 cm (109.1 inches)
7T/310, 303.0 cm (119.3 inches)
9.4T/210, 303.0 cm (119.3 inches)
9.4T/310, 299.0 cm (117.7 inches)
If AV pads are used add 25 mm (1.0 inches) to the minimum ceiling height.
4. Check that the access route between the loading dock and lab is suitable: especially door heights and widths.

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Instrument Description	Weight		Height		Depth		Width	
	kg	lbs	cm	in	cm	in	cm	in
7T/210/ASR magnet	2,300	5,070	160.0	63.0	128.1	50.4	120.0	47.2
7T/310/ASR magnet	5,000	11,000	206.5	81.3	163.6	64.4	169.0	66.5
9.4T/210/ASR magnet	5,000	11,000	206.5	81.3	142.0	55.9	169.0	66.5
9.4T/310/ASR magnet	8,000	17,600	203.6	80.2	176.9	69.6	174.0	68.5
MRI console	335	739	198.5	78.1	78.3	30.8	60.5	23.8
RF power cabinet	136	300	116.3	45.8	88.9	35.0	62.0	24.4
Gradient power supply	700	1,544	205.8	81	138.8	54.6	60.0	23.6
Gradient chiller (Haskris WW1, water cooled)	91	200	64	25	66	26	48	19
Gradient chiller (Haskris R175, air cooled)	181	400	94	37	67	26	70	28
Compressor chiller (Haskris WW2, water cooled)	113	250	86	34	64	25	76	30
Compressor chiller (Haskris R300, air cooled)	317	700	122	48	79	31	89	35
Cryocooler compressor (CP289C)	119	263	61.5	24.2	68.6	27.0	49.4	19.4
Optional 10 A RT shim supply	300	670	152	60	76	30	61	24
Magnet remote monitor unit	18	40	107	42	61	24	61	24
Host workstation	18	39	46	18	46	18	18	7

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Environmental Conditions

Operating your instrument within the recommended temperature ranges insures optimum instrument performance and lifetime.

Special Notes

1. Performance can be affected by sources of heat & cold e.g. direct sunlight, heating/cooling from air conditioning outlets, drafts and/or vibrations.
2. The site's ambient temperature conditions must be stable for optimum performance.
3. A quench pipe and passive vent are normally required in the magnet room, together with an oxygen level monitor. See the SPG for more details.
4. The site needs to be reviewed for any ferromagnetic material near the magnet, such as steel beams. Also, any other instruments nearby may not operate correctly in stronger than normal magnet fields. Refer to the SPG for more details.
5. Without pneumatic anti-vibration feet, the floor of the magnet room must be sufficiently rigid to reduce the vibration from adjacent dynamic loads to a negligible level, defined as no single peak vibration greater than 20 μg acceleration from 5 to 100 Hz. See the SPG for more details.
6. If the chillers are air cooled, the additional heat load will be about 18.5 kW (63,000 BTU/hr).

Instrument Description	Operating temp range °C (F)	Operating humidity range (%)	Maximum Heat Dissipation (BTU/hour)
Magnet	15 - 21 (59 - 70)	30 - 60	0
MRI console	15 - 32 (59 - 90)	30 - 75	5,800
RF power cabinet	15 - 32 (59 - 90)	30 - 75	7,850
Gradient power supply	15 - 32 (59 - 90)	30 - 75	27,300
Cryocooler compressor	15 - 32 (59 - 90)	30 - 75	3,410
Water cooled chiller for compressor	15 - 32 (59 - 90)	30 - 75	1,710
Water cooled chiller for gradient	15 - 32 (59 - 90)	30 - 75	1,710
Host workstation	15 - 32 (59 - 90)	30 - 75	1,280

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Power Consumption

Special Notes

1. If a computer system is supplied with your instrument, be sure to account for those electrical outlets.
2. See the SPG for more details.

Instrument Description	Outlets/circuits required	Electrical Requirements
Host workstation and peripherals	6	120/220 VAC 15 A
Two-cabinet console	1	205-235 VAC, 20 A
RF power cabinet	1	205-235 VAC, 30 A
Gradient power supply	1	187-229 VAC, 100 A, 3 Ø or 360-440 VAC, 50 A, 3 Ø
Gradient chiller (Haskris WW1, water cooled)	1	208-230 VAC, 15 A
Gradient chiller (Haskris R175, air cooled)	1	208-230 VAC, 25 A
Compressor chiller (Haskris WW2, water cooled)	1	208-230 VAC, 15 A
Compressor chiller (Haskris R300, air cooled)	1	208-230 VAC, 35 A
Optional 10 A RT shim supply	1	187-229 VAC, 20 A, 3 Ø, 5 wire, 50 or 60 Hz
Magnet monitor + EDU	2	120/220 VAC
Accessories and test equipment	6	120 VAC, 20 A or 230 VAC, 10 A
Cryocooler Compressor	1	50 Hz: 380/420 VAC 3 phase (3W+PE), 25 A. 60 Hz: 460 VAC 3 phase (3W+PE), 25 A

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Required Operating Supplies by Customer
Special Notes

1. For information on Agilent consumables, accessories and laboratory operating supplies, please visit <http://www.chem.agilent.com/en-US/Products/consumables/Pages/default.aspx>
2. Refer to the SPG for more details.

Magnet type	Recommended Quantity of Cryogens and Gases (excluding any additional liquid helium needed after training quenches)
7T/210/ASR magnet	1,250 L liquid helium, 1,200 L liquid nitrogen & 3 large (200 SCF) bottles of helium gas.
7T/310/ASR magnet	3,500 L liquid helium, 3,000 L liquid nitrogen & 8 large (200 SCF) bottles of helium gas.
9.4T/210/ASR magnet	3,000 L liquid helium, 3,000 L liquid nitrogen & 8 large (200 SCF) bottles of helium gas.
9.4T/310/ASR magnet	4,500 L liquid helium, 6,000 L liquid nitrogen & 10 large (200 SCF) bottles of helium gas.

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1. Special safety precautions need to be considered in relation to the hazards presented by the strong magnetic field and liquid cryogens. Refer to the SPG and system user guides for more information.

Important Customer Web Links

- ☐ For additional information about our solutions, please visit our web site at <http://www.chem.agilent.com/en-US/Pages/HomePage.aspx>
- ☐ Need to get information on your product?
Literature Library - <http://www.agilent.com/chem/library>
- ☐ Need to know more?
Customer Education – <http://www.agilent.com/chem/education>
- ☐ Need technical support, FAQs? – <http://www.agilent.com/chem/techsupp>
- ☐ Need supplies? – <http://www.agilent.com/chem/supplies>