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Gravity Probe B Relativity Mission

CLEAN ROOM UTILITY STANDARDS

GP-B P0047 Rev -

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Date

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CLEAN ROOM UTILITY STANDARDS

UTILITY	DESIGN SPEC	REF. SPEC.
HVAC		
Temperature		
130	64-72	
132	68+/-3.6 F	
litho	68+/-1.8 F	
MGP1	68-71	
MGP2	68-71	
MGP3	68-71	
MGP4	68-71	
MGP5	68-75	
FIST OPS	65-75	
FIST OPS AUXILIARY	65-75	
Humidity		
130	n/a	
132	60% max	
litho	45+/-3 %	
MGP1	45+/-10%	
MGP2	45+/-10%	
MGP3	45+/-10%	
MGP4	45+/-10%	
MGP5	45+/-10%	
FIST OPS	n/a	
FIST OPS AUXILIARY	n/a	
Flow Rate		
130	2500 cfm max.	
132	8500 cfm max.	
litho	3100 cfm max.	
MGP1	7000 cfm combined total	
MGP2	"	
MGP3	"	
MGP4	"	
MGP5	28,000 cfm	
FIST OPS	n/a	
FIST OPS AUXILIARY	n/a	

Pressurization (all values +/- 0.005 " H₂O)

130-Ambient	0.035 " H ₂ O
130-132	0.010 " H ₂ O
132 -Ambient	0.045 " H ₂ O
132-Litho	0.010 " H ₂ O
MGP1-Ambient	0.020 " H ₂ O
MGP1-MGP2	0.020 " H ₂ O
MGP2-132	0.010 " H ₂ O
MGP2-MGP3	0.010 " H ₂ O
MGP3-Ambient	0.045 " H ₂ O
MGP3-MGP5	0.045 " H ₂ O
MGP5-Ambient	0.090 " H ₂ O
FOA-FO	>0.00 " H ₂ O
FO-Ambient	0.020 " H ₂ O

Particle Count

130	Class 10,000
132	Class 10,000
litho	Class 1,000
MGP1	Class 1,000
MGP2	Class 1,000
MGP3	Class 1,000
MGP4	Class 1,000
MGP5	Class 10
FIST OPS	Class 100,000
FIST OPS AUXILIARY	Class 100,000

Other Utilities CITY WATER

130	no	yes	yes
132	yes	yes	yes
litho	no	yes	yes
MGP1	no		
MGP2	no		
MGP3	no		
MGP4	no		
MGP5	no		
FIST OPS	no	yes	yes*
FIST OPS AUXILIARY		yes	no

COOLING WATER

no	no
no	no
no	no
no	no
no	no
no	no

HIGH PRESSURE AIR

Other Utilities NITROGEN AC POWER

130	yes	yes
132	yes	yes
litho	yes	yes
MGP1	no	yes
MGP2	no	yes
MGP3	yes*	yes*
MGP4	yes*	yes*
MGP5	yes*	yes*
FIST OPS ¹	yes*	yes*
FIST OPS AUX.	no	yes*

* Note: There are special sources or requirements, including backup generators, independent high pressure air compressors, nitrogen boiloff tanks, etc.

¹ Note: FIST OPS also has a helium utility supply.

CITY WATER

Pressure	60 psi
Flow Rate	5 gpm
Filter size	20 micron

COOLING WATER

Supply Pressure	50 psi		
Return Pressure	< 5 psi		
Temperature			
min	none	60F	1
max	none	60F	1
Resistivity	1 megohm		
Filter size	n/a		

HIGH PRESSURE AIR

Pressure	80 psi
Flow capacity	1 cfm max.
Filter size	none
Dew point	none

NITROGEN

Pressure	70 psi
Flow capacity	8 scfm
Filter size	1 micron
Particle Count	n/a
Purity	n/a
Dew point	-70 F (10 ppm H ₂ O)

AC POWER

none	100-125 V ²
	60±3 Hz ²
	200-230 V ²
	3ø ²

1 Leybold-Heraeus TMP/NT-450.
2 IBM AT Technical Reference.