



# DLS Permanent Magnet Quadrupole Motion Axis Specification

Date	Revision	Notes
27/03/19	001	First issue
20/06/19	002	Updated to match motion calculations
12/11/19	003	Motor and gearbox updated
17/06/20	004	Updated and document renamed
03/09/20	005	Updated

Reference Documents	Comment
1251-meng-calc-001	Motion calculations

Document Name  
Author

1251-meng-spec-005  
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Titles	System				
	Motion Engineer		Mike Lowe		Lee Hudson
	Mechanical Engineer		Nick Krumpa		Walter Tizzano
	Electrical Engineer		Mike Lowe		Mark Popkiss
	Controls Engineer		?		Austen Rose
	Controller Electrical Drawing No.				
	Motion Stage Assembly No.				
	Motion Stage Assembly Title				
	Axis title				
	EPICS Designation				
	Motion Controller Name				
	Motion Controller Axis No				
Controller Location					
Specification	Range	mm or mRad	90	mm	
	Mechanical Resolution	mm or mRad	0.01	mm	
	Repeatability	mm or mRad	0.01	mm	
	Speed	mm/s or mRad/s	1	mm/s	
	Load	kg	235	kg	
	Environment	In Air			
	Rotary/Linear Stage	Rotary/LinearLinear			
	Vertical/Horizontal Movement	Vertical/HorizontalVertical			
	Mode of Operation	Step Scan/Fly Scan	Step Scan		
	Is this part of a feedback system?	Yes/NoYes			
	Open/Closed loop	Open/ClosedOpen			
	Co-ordinated motion	Yes/NoNo			
	Home	Yes/NoYes			
	Notes				
Design	Stage/Assembly Supplier	DL in house			
	Motor Type		Stepper		
	Motor/Gearbox Supplier	Mclennan			
	Motor Model	Part No.	23HSX206CE		
	Motor Current	A	4.2 (restrict to 2)		
	Motor Encoder	Yes/No	Yes		
	Motor Full Step Resolution	mm or mRad	0.0004	mm	
	Gearbox Model	Part No.	IP57-M02		
	Gearbox Ratio		50 to 1		
	Brake	Part No.	None		
	Temperature Sensor	Yes/No	No		
	Screw Type	Ball screw			
	Lead Pitch	mm	4		
	Encoder Brand	None			
	Encoder Readhead Model	Part No.	None		
	Encoder Type	Absolute/IncrementalNone			
	Reference Mark	Yes/No	None		
	Encoder Strip	Part No.	None		
	Encoder Interpolator Model	Part No.	None		
	Encoder Resolution	mm or mRad	none	none	
	Limit Switch Brand	ZF			
	Limit Switch Model	Part No.	D413-VRD		
	Home Switch Brand	Omron			
	Home Switch Model	Part No.	D5A-3310		
	Overtravel Switch Brand	None			
	Overtravel Switch Model	Part No.	None		
	Hardstop	Yes/No	Yes		
	Notes				