PAUL SCHERRER INSTITUT	Project
	TBD
Title: **Linear Stage Factory Acceptance Test Report**	Document Identification: **TBD**
Author: **TBD**	Review Index: **0.1**

Overall stage image

Required image not found
../Media/I1.[jpg|jpeg|png|pdf]

TBD linear stage during testing

Organisation	Copies	Distribution / Name	Reviewed by	Responsible	Date / Signature
TBD	1	**TBD**	**TBD**	**TBD**	

Release Traceability: **TBD**

File Name:	Linear_Stage_FAT_Report_Template.pdf	Author signature	Date / Signature
Date:	October 30, 2026	**TBD**	

Equipment	**TBD**
Test type	Factory Acceptance Test
Encoder	**TBD**
Motor	**TBD**
Drive	**TBD**
Location	**TBD**
Dates	**TBD**
Operator	**TBD**
Applicable standards	**TBD**

1 FAT Checklists

1.1 Pre-Test Safety

Item	Checklist Item	Yes	No	Remarks
2.1	Risk assessment conducted	☐	☐	
2.2	Safety barriers in place	☐	☐	
2.3	E-stop functional	☐	☐	
2.4	Equipment grounded	☐	☐	
2.5	Personnel briefed	☐	☐	
2.6	Cable routing safe	☐	☐	
2.7	Environmental conditions OK	☐	☐	

1.2 Equipment Verification

Item	Checklist Item	Yes	No	Remarks
3.1	Stage model verified	☐	☐	
3.2	Encoder model verified	☐	☐	
3.3	Motor model verified	☐	☐	
3.4	Drive model verified	☐	☐	
3.5	Encoder interface verified	☐	☐	
3.6	Measurement system calibrated	☐	☐	
3.7	Documentation available	☐	☐	
3.8	Calibration certificates valid	☐	☐	

1.3 Mechanical and Electrical Checks

Item	Checklist Item	Yes	No	Remarks
4.1	Mounting interfaces verified	☐	☐	
4.2	Travel unobstructed	☐	☐	
4.3	End stops functional	☐	☐	
4.4	Cable carrier movement OK	☐	☐	
4.5	Encoder alignment checked	☐	☐	
4.6	Motor coupling secure	☐	☐	
4.7	Supply voltage verified	☐	☐	
4.8	Signal connections verified	☐	☐	
4.9	Ground continuity checked	☐	☐	
4.10	No abnormal noise or vibration	☐	☐	

1.4 Control System Verification

Item	Checklist Item	Yes	No	Remarks
5.1	Communication established	☐	☐	
5.2	Drive parameters verified	☐	☐	
5.3	Encoder scaling verified	☐	☐	
5.4	Current or force limit verified	☐	☐	
5.5	Homing or referencing functional	☐	☐	
5.6	Software limits configured	☐	☐	
5.7	E-stop response verified	☐	☐	
5.8	Motion profile verified	☐	☐	
5.9	Closed-loop stability verified	☐	☐	
5.10	Following error acceptable	☐	☐	

1.5 Test Execution

Item	Checklist Item	Yes	No	Remarks
6.1	Measurement system aligned	☐	☐	
6.2	Environmental compensation set	☐	☐	
6.3	Test parameters recorded	☐	☐	
6.4	Required cycles completed	☐	☐	
6.5	Raw data saved	☐	☐	
6.6	Analysis files generated	☐	☐	
6.7	Environmental data logged	☐	☐	
6.8	All configurations tested	☐	☐	

2 Hardware and Configuration

Component	Verified specification
Stage	**TBD**
Travel	**TBD**
Encoder	**TBD**
Encoder interface	**TBD**
Encoder resolution and scaling	**TBD**
Motor or actuator	**TBD**
Drive	**TBD**
Controller and control mode	**TBD**
Measurement system	**TBD**

2.1 Coordinate Convention

Quantity	Project convention (defaults shown)
Linear stage travel	Z axis
Vertical direction	Y axis, perpendicular to Z
Horizontal direction	X axis, perpendicular to Y and Z
Roll	Rotation about Z (travel axis)
Yaw	Rotation about Y (vertical axis)
Pitch	Rotation about X (horizontal axis)
Positive rotational direction	Right-hand rule

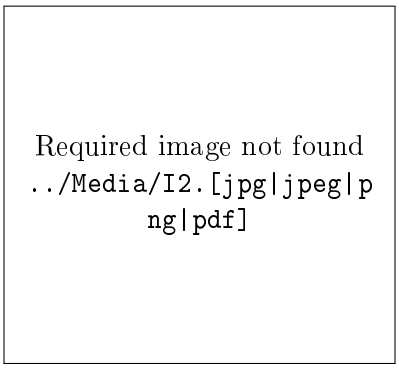


Figure 1: Encoder

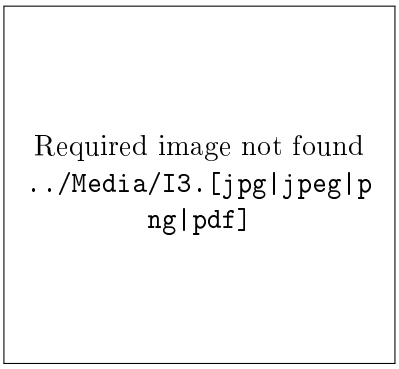


Figure 2: Motor

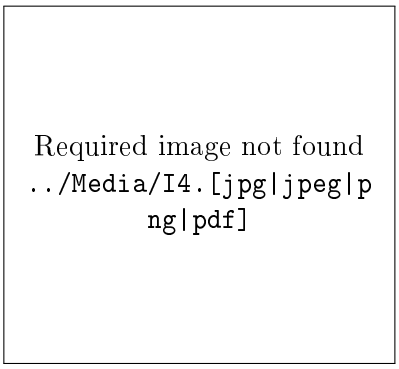


Figure 3: Motor coupling

Required image not found
../Media/I5.[jpg|jpeg|png|pdf]

Figure 4: General test setup - view 1

Required image not found
../Media/I6.[jpg|jpeg|png|pdf]

Figure 5: General test setup - view 2

3 Test Description and Acceptance Criteria

3.1 Applicable Standards and Procedures

- Applicable standard(s), edition(s), and clause(s): **TBD**
- Internal test procedure and revision: **TBD**
- Measurement-system operating procedure and revision: **TBD**

3.2 Positioning Test

- Travel and target positions: **TBD**
- Number and direction of cycles: **TBD**
- Velocity, acceleration, and settling criterion: **TBD**
- Tested orientations and control modes: **TBD**
- Accuracy acceptance limit: **TBD**
- Repeatability acceptance limit: **TBD**

3.3 Straightness and Additional Tests

- Straightness planes, range, and point spacing: **TBD**
- Additional performance quantities evaluated, including bidirectional repeatability, reversal error, or minimum incremental motion: **TBD**
- Additional load, velocity, thermal, vibration, or endurance test conditions: **TBD**
- Applicable acceptance limit(s): **TBD**

4 Environmental Conditions

Test	Temperature (°C)	Pressure	Humidity (%)	Notes
Positioning	**TBD**	**TBD**	**TBD**	**TBD**
Straightness	**TBD**	**TBD**	**TBD**	**TBD**
Additional test	**TBD**	**TBD**	**TBD**	**TBD**

5 Test Files and Data

The following exact evidence basenames identify the delivered raw and analysis files.

5.1 Raw Files

- `TBD_positioning_raw_file.ext`
- `TBD_straightness_raw_file.ext`
- `TBD_environment_log.ext`

5.2 Analysis Files

- `TBD_positioning_analysis.pdf`
- `TBD_straightness_analysis.pdf`

6 Conclusions

6.1 Positioning

- Measured result: **TBD**
- Stated measurement uncertainty: **TBD**
- Acceptance criterion: accuracy **TBD**; repeatability **TBD**
- Disposition: **TBD**

6.2 Straightness and Additional Tests

- Measured result: **TBD**
- Stated measurement uncertainty: **TBD**
- Acceptance criterion: **TBD**
- Disposition: **TBD**

6.3 Overall FAT Conclusion

Overall disposition: TBD.

Deviations and open actions (including responsible owner and due date): TBD.

References

- Stage manufacturer document, number, and revision: **TBD**
- Encoder, motor, drive, and controller documents and revisions: **TBD**
- Standards and procedures: **TBD**; **TBD**; **TBD**
- Calibration certificates: **TBD**

Document History

Date	Version	Description
October 30, 2026	0.1	Initial project-specific report generated from template

Appendix: Measurement Analysis Files

The following measurement analysis documents are attached in the listed order.

- `TBD_positioning_analysis.pdf`
- `TBD_straightness_analysis.pdf`