REPORT OF THE TESTING IN ACCORDANCE WITH EN1154:1997/A1:2002/AC:2006

SAMPLE B.

AST3001

COMMERCIAL IN CONFIDENCE

TEST REPORT NWL-910-936

Northwest Laboratories Ltd
Unit 3 Astra Business Centre
Roman Way, Preston PR2 5AP

Registered in England: 12616379

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INTRODUCTION

The test was conducted by Northwest Laboratories Ltd at their premises at Unit 3 Astra Business Centre, Roman Way, Preston PR2 5AP, United Kingdom.

Test Specimen received : 07/01/2025

Test start date: 07/01/2025

Test end date: 05/03/2025

Tests performed by: James Gibbs

Test observed by: Mark Gallagher

Test report: NWL-910-936

Report issued by: Mark Gallagher (Managing Director) Date: 05/03/2025

CLIENT DETAILS

Report prepared for: Astra Door Control Limited

Address: Astra Business Centre, Roman Way, Preston, PR2 5AP

Customer Product Ref: AST3001

Product Type: Concealed Jamb mounted

Power Size: 1 (minimum power)

Item(s) were received in good condition? Yes

If no describe the issues found:

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Reason for Test				Power Size	
EN1154:1997/A1:2002/AC:2006 Sample B				1	
Planned Start	**Description of Test Unit**			**Start Counter**	**Test Rig No.**
07/01/2025	AST3001 – Concealed Jamb Mounted			0	
Part No	**Description**	**Revision**	**Comments**		
AST3001	3000 series, fixed power size 1	-	Supplied by manufacturer (D.O.M 07.01.25)		
Customer Notes Test to EN1154:1997/A1:2002/AC:2006 sample B					

Specification	Requirement	Result
Closer strength – Size 1	Test Door Mass 20Kg	20kg
Max Opening angle	105° Grade 3 or 180° Grade 4	105°
Door Closes from	105° Grade 3 or 180° Grade 4	105°
Door under control from	70° minimum	Yes
Set closing time 90° to 0°	3-7 Secs	4.56 secs
Set Opening time 0° to 90°	2-3 Secs	2.5 secs
Latch effect adjustable	If incorporated must be effective over a maximum range of 15° and shall be adjustable.	Yes
Measured latch angle		

Date Finish	Results			End Counter
05.03.2025	Pass ☒	Fail ☐	Stopped ☐	500,000

Conclusions
Cycle test completed. Efficiency test, overload and cycle tests all passed

Further Actions
No further action

Counter	Date	Temp (°C)	Comments
0	07.01.25	21	Start - Cycle to 5,000
5,000	08.01.25	19.5	Cycle test paused for power trace and overload tests

Tests after 5000 cycles

Specification	Test requirement	Test Result
Cycles completed	5,000 Cycles	5000 Cycles
Ambient Temp	15-30°C	18.88°C
Closer Temp	Within 2° of ambient	18.5°C

Closing time	Min: less than/equal to 3 Secs	1.58 secs
	Max: greater than/equal to 20 Secs	28.13 secs
Closing Overload Test (5000)	SEE QP 9.6/FORM 960	
Delayed Action Tests	Torque to push door from delay zone max 150 Nm min 2*90° torque for size of closer Position of end of delay zone. Delay time adjustable to >20 secs	n/a

Continued cycling 5000 to 500,000 cycles

Delayed action closers only	Delay time set to 20 secs Dwell time set to 270 secs Perform 500 cycles Delay time for last 5 cycles 10-30 s	n/a
Closing time	Closing time 90-0° set to 3-7 secs	n/a
Back Check	Opening speed at 60° between 51.6 and 63° per sec. Arrest angle < 80°	n/a
Backcheck closers cycle up to 100,000 cycles with backcheck as set.		
Backcheck	Opening speed at 60° between 51.6 and 63° per sec. Arrest angle < 90°	n/a
Backcheck closers cycle from 100,000-500,000 without backcheck		n/a
None backcheck closers cycle from 5,000-500,000 Cycles		n/a

Cycle Test Log

Counter	Date	Temp (°C)	Comments
5,000	08.01.2025	19.5	Cycle test resumed
66,729	15.01.2025	22.5	
140,667	23.01.2025	21.5	
500,000	05.03.2025	20	Cycle test completed Removed for Power trace x3 Overload x10

Tests after 500,000 cycles

Specification	Test requirement	Test Result
Cycles completed	500,000 Cycles	500,000
Ambient Temp	15-30°C	20°C
Closer Temp	Within 2° of ambient	20.5°C

Specification	Test requirement	Test Result
Closing time	Min: less than/equal to 3 Secs	1.38 secs
	Max: greater than/equal to 20 Secs	24.84 secs
Closing Overload Test (500,000)	SEE QP 9.6/FORM 960	
Delayed Action Tests	Torque to push door from delay zone max 150 Nm min 2*90° torque for size of closer. Position of end of delay. Delay time adjustable to >20 secs.	n/a

This report applies only to the following part(s) of EN1154:1997/A1:2002/AC:2006 clause 7.3 Sample B

NORTH WEST LABS

Power Size:	1 <-- Set power size	**Job Ref:**	**936**
Door Mass:	20 Kg	**Product Code:**	AST3001
Test option:			**5000 Cycle Test**
		Test 1	08/01/2025 11:50
Closer Temperature:	18.5 °C	**Test 2**	08/01/2025 11:57
Ambient Temperature:	18.88 °C	**Test 3**	08/01/2025 12:05

Specification	Test 1	Test 2	Test 3	Average	Test requirement		
Opening 0-4°	*12.81*	*12.84*	*12.84*	12.83	*26*	Nm Max	Pass
Opening 0-60°	*18.05*	*18.00*	*17.96*	18.00	*26*	Nm Max	Pass
Closing 0-4°	*11.41*	*11.41*	*11.43*	11.42	*9*	Nm Min	Pass
Closing 0-4°	*11.41*	*11.41*	*11.43*	11.42	*13*	Nm Max	Pass
Closing 88-92°	*12.91*	*12.90*	*12.93*	12.92	3	Nm Min	Pass
Closing any other angle	*10.70*	*10.72*	*10.72*	10.72	*2*	Nm Min	Pass
Efficiency	*89.05*	*88.88*	*88.99*	88.97	*50*	% Min	Pass

			500,000 Cycle Test
		Test 4	05/03/2025 15:47
Closer Temperature:	20.5 °C	**Test 5**	05/03/2025 15:51
Ambient Temperature:	20 °C	**Test 6**	05/03/2025 15:56

Specification	Test 1	Test 2	Test 3	Average	Test requirement		
Opening 0-4°	*12.29*	*12.32*	*12.42*	12.34	*26*	Nm Max	Pass
Opening 0-60°	*17.35*	*17.49*	*17.31*	17.39	*26*	Nm Max	Pass
Closing 0-4°	*10.06*	*10.11*	*10.15*	10.11	*9*	Nm Min	Pass
Closing 0-4°	*10.06*	*10.11*	*10.15*	10.11	*13*	Nm Max	Pass
Closing 88-92°	*12.50*	*12.30*	*12.24*	12.35	3	Nm Min	Pass
Closing any other angle	*8.75*	*8.94*	*9.10*	8.93	*2*	Nm Min	Pass
Efficiency	*81.90*	*82.11*	*81.69*	81.90	*50*	% Min	Pass

			Closing				Opening	Efficiency
Power Size	Leaf mm Max	Door Mass Kg	0-4 Min Nm Min	0-4 Max Nm Max	88-92 Nm Min	Any other angle Nm Min	0-60 Nm Max	0-4 % Min
1	750	20	9	13	3	2	26	50
2	850	40	13	18	4	3	36	50
3	950	60	18	26	6	4	47	55
4	1100	80	26	37	9	6	62	60
5	1250	100	37	54	12	8	83	65
6	1400	120	54	87	18	11	134	65
7	1600	160	87	140	29	18	215	65

Taken from EN1154:1997/A1:2002 : Table 1

This report applies only to the following part(s) of EN1154:1997/A1:2002 clause 7.3 Sample B

Power Size: 1 <-- Set power size

Door Mass: 20kg

Overload Weight 15kg

Job Ref: 936

Product Code: AST3001

5000 Cycles

Specification	Test requirement	Test Result	Pass/Fail
Closing time	Min: less than/equal to 3 Secs	1.58 s	Pass
	Max: greater than/equal to 20 Secs	28.13 s	Pass
Closing Overload	Overload weight	15kg	Pass
Test	Closing time 90-0° set to 10 secs	10.25	Pass
	Overload weight arrest at 15°	13.567°	Pass
	10x Overload tests performed	10	Pass
Delayed Action Tests	Torque to push door from delay zone max 150 Nm min 2*90° torque for size of closer Position of end of delay zone. Delay time adjustable to >20 secs	N/A	N/A

500,000 Cycles

Specification	Test requirement	Test Result	Pass/Fail
Closing time	Min: less than/equal to 3 Secs	1.38 s	Pass
	Max: greater than/equal to 20 Secs	24.34 s	Pass
Closing Overload	Overload weight	15kg	Pass
Test	Closing time 90-0° set to 10 secs	9.83 s	Pass
	Overload weight arrest at 15°	14.33°	Pass
	10x Overload tests performed	10	Pass
Delayed Action Tests	Torque to push door from delay zone max 150 Nm min 2*90° torque for size of closer Position of end of delay zone. Delay time adjustable to >20 secs	N/A	N/A

Power Size:	1	2	3	4	5	6	7
Test Door mass:	*20kg*	*40kg*	*60kg*	*80kg*	*100kg*	*120kg*	*160kg*
Overload Test weight:	15kg	18kg	21kg	24kg	27kg	30kg	33kg
Nm Min:	3	4	6	9	12	18	29

Taken from EN1154:1997/A1:2002 Table 2

This report applies only to the following part(s) of EN1154:1997/A1:2002 clause 7.3.4.4

The AST3001, Jamb mounted, concealed closer was fully tested to EN1154 Sample B at power size 1, and met with all the durability, efficiency and overload requirements with no visual or mechanical signs of any issues.

Decision Rule

To comply with the requirements of ISO 17025:2017 the decision rules used by Northwest labs are as follows: -

If a result falls within the acceptance interval it will be a PASS for that section of the test and the risk of false accept will be 2.5%.

If the result falls within the specified guard band, it will be a CONDITIONAL PASS for that section and the risk of false accept will be 50%.

If the result falls outside the tolerance limits it will be a FAIL.

Based on our measured uncertainty multiplied by a factor of k=2.0 to give a confidence level of 95%.

The decision rule applies to the following forms within this document:

Form 940, 950 and 960

Mark Gallagher

Signed by: ..... Date: 05.03.25

Reviewed by .....Date 06.03.2025

End of test report.