

# PRINT REPORT

LFM-0122-200-056









ReportNumber:	01	ProjectNumber:	LFM-0122-200-056
PartNumber:	LFM-0122-200-056	InquiryNumber:	LFM-0122-200-056.001
Requirements:	DO-01	DrawingNumber:	LFM-0122-200-056.idw
PartTitle:	Tube honeycomb	Visual testing date:	04.04.2022

## Testing information

Test standards:	DIN EN 13018	Printing process/ machine:	FDM (metal)/ Makerbot Method X
Test instruction:	internal	Printing specifications:	-
Test scope:	100%	Acceptance rule:	internal
Test device:	Digital vernier caliper	Testing aids:	Lamp, Camera, Lens
Illuminance meter:	Voltcraft LX-10	Lux measured:	455
Measuring device no.:	1662853		

## Test results

Exam area		Target [mm]	Scope <sup>1)</sup> / Actual [mm]	Visual inspection - documentation according to DIN EN 13018																				Evaluation <sup>2)</sup>		Remark							
				100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	118-a	118-b	201		202	301	302	303	A	NA	
Part properties																																	
	Outer diameter		ES100	x	x	x		x	x		x																				x	But: further processing for paper	
	Initial layer		ES100	x	x		x				x																					x	But: further processing for paper
	Top layer area		ES100	x	x		x																									x	But: further processing for paper
Part dimensions																																	
	Overall diameter	30,00	30,52																	x		x									x		Deviation accepted
	Overall height	25,00	25,40																	x		x									x		Deviation accepted
	Hole diameter	8,00	7,76																	x	x										x		Deviation accepted

### Legend:

- 1) ES ... Exterior surfaces (e.g. ES100%)  
S ... Support (e.g. S0%, S100%)  
2) A ... Requirements are accepted  
NA ... Requirements are **not** accepted

### Surface irregularities:

- 100 General  
101 Rough surface  
102 Blobs on surface  
103 Over extrusion  
104 Under extrusion  
105 Gaps in Walls  
106 Stringing  
107 Layer delamination  
108 Curling  
109 Warping  
110 Overheating  
111 Layershifting  
112 Bad support structures  
113 Missing support

- 114 Bad corners  
115 Bad overhangs  
116 Waves on surfaces  
117 z-seam on surfaces  
118 Dimensional issue  
118-a Undersize  
118-b Oversize

### Infill irregularities:

- 201 False infill  
202 Defect infill

### Other irregularities:

- 301 Clogged extruder  
302 Broken filament  
303 No print bed adhesion

Appendix <input checked="" type="checkbox"/> YES / <input type="checkbox"/> NO (Description/Pages)	General test instructions, acceptance rule, printing properties/ 2 pages
Remarks:	<ul style="list-style-type: none"> <li>Preview with LABS extruder, Raft, no support</li> <li>ABS was used for the preview simulation because an OEM metal template does not exist</li> <li>Printing material is BASF Ultrafuse 316l</li> </ul>



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<b>Checked</b>		<b>Rated</b>		<b>Customer release</b> (if requested)
Name:	<u>Inspector #2</u>	Name:	<u>Production manager</u>	Name: _____
Test location:	<u>Test area</u>			
Date:	<u>04.04.2022</u>	Date:	<u>04.04.2022</u>	Date: _____
Signature:	<u>xxx</u>	Signature:	<u>xxx</u>	Signature: _____

## Appendix

<b>Test instruction</b>	<ul style="list-style-type: none"> <li>The assessment and evaluation must be carried out by experienced and trained personnel.</li> <li>Visual inspection after printing the part.</li> <li>The surfaces must be free of any coating, dirt, dust, powder etc.</li> <li>The testing/ inspection is carried out in daylight or under artificial light. The illuminance during the test must be at least 350lx, 500lx is recommended.</li> </ul>
<b>Acceptance rule</b>	<ul style="list-style-type: none"> <li>There is currently no existing standard for 3D printing that defines the possible irregularities and limits for evaluation.</li> <li>For this reason, only internal evaluation standards can be used.</li> <li>The acceptance of the examinations here is based on the individual assessment of the examiner.</li> </ul>
<b>Part images after printing</b>	
<b>General view immediately after printing</b>	
<b>View under test conditions</b>	
<b>View of the defects (if occurred)</b>	

<p><b>Rough surface</b> <b>Blobs</b> <b>Under extrusion</b> <b>Gaps</b> <b>Layer delamination</b></p>	
<p><b>Rough surface</b> <b>Over extrusion at hon-eycombs</b> <b>Layer delamination due to raft removal</b></p>	
<p><b>Rough surface</b> <b>Over extrusion at hon-eycombs and walls</b></p>	