Procedural Review Voting Sheet
Editorial Change(s) to a published Standard or Safety Guideline (Independently from a Letter Ballot)

REGION/LOCALE: North America
GLOBAL TECHNICAL COMMITTEE: Physical Interfaces & Carriers
EVENT: NA Fall Standards Meetings
DATE OF MEETING: 11/06/2019
PLACE OF MEETING: SEMI HQ/Milpitas,CA/USA
TC CHAPTER CO-CHAIRS: Matt Fuller/Entegris, Melvin Jung/Intel
SEMI STANDARDS STAFF: Laura Nguyen

A&R Voter: Name/Company
Date: MM/DD/YYYY

I. Document Title

Document Title

SEMI E177-0919, Specification for Transmission Electron Microscope (TEM) Lamella Carriers Used in Electron Microscopy Workflows

II. Type 1 Editorial Change

Editorial changes that meet the requirements of the Regulations (see *Regulations* ¶¶ 8.9.4 & 8.9.5) are approved by a simple majority vote in a regularly scheduled meeting of the TC Chapter. [See PM 2.11.4]

Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

III. Type 2 Editorial Change

Editorial changes that meet the requirements of the Regulations (see *Regulations* ¶¶ 8.9.4 & 8.9.5) are approved by a simple majority vote in a regularly scheduled meeting of the TC Chapter. [See PM 2.11.4]

Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

1	**FROM: Section/Paragraph 7** • 2-2.16 Shape of Pins • 2-4.1 Material(s) • 2-5.1 Material of Film • 2-5.2 Thickness of Film • 2-5.4 Total Number of Defective Sites in Zones A, B, and C • 2-5.5 Missing Film Area • 2-5.6 Surface Roughness • 2-6.1 Particulate Contamination • 2-6.2 Surface Roughness • 2-7.4 Face for the ID Mark • 2-7.6 Side Length of Square Dot • 2-7.7 Depth of Dot • 2-7.8 Marking Quality • 2-7.9 Content of ID Mark
	TO: Section/Paragraph 7 • 2-2.16 Shape of Pins • 2-3.1 Center Fiducial • 2-4.1 Material(s) • 2-5.1 Material of Film • 2-5.2 Thickness of Film • 2-5.4 Total Number of Defective Sites in Zones A, B, and C • 2-5.5 Missing Film Area • 2-5.6 Surface Roughness • 2-5.7 Number of Holes per Site • 2-5.8 Position of Holes on Site • 2-5.9 Diameter of Holes • 2-6.1 Particulate Contamination • 2-6.2 Surface Roughness • 2-7.43 Face for the ID Mark • 2-7.65 Side Length of Square Dot • 2-7.76 Depth of Dot • 2-7.87 Marking Quality • 2-7.98 Content of ID Mark

Justification: (If necessary)

Bullet list in section 7 does not match Table 1, part 2 – editorial change for consistency

FROM: Section/Paragraph Table 1, Part 2

Part 2 Lamella Carrier

		ITEM	SPECIFICATION	
2-1. General Characteristics				
♦	2-1.1	Manufacturing Method	[ ] Method A? [ ] Method B? [ ] Method C? [ ] Other (specify): _____	
♦	2-1.2	Form Factor	[ ] Circle, [ ] Half-Moon	
2-2. Dimensional Characteristics				
	2-2.1	Outer Diameter	3.025 ± 0.025 mm	by
	2-2.2	Rim Width	0.525 ± 0.025 mm	by
	2-2.3	Rim Open Sector Angle#2	±82.5° with respect to the positive *x*-axis with a tolerance −0°/+1°	by
	2-2.4	Active Area Diameter	1.8 +0/−0.1 mm	by
♦	2-2.5	Thickness	(specify): Target [ ] ± 10%	by
	2-2.6	Warp	≤100 µm	by
♦	2-2.7	Edge Profile	(specify): _____	
	2-2.8	Edge Exclusion Zone Width	100 µm ± 10 µm	by
♦	2-2.9	Grid Bars Width#1	(specify): Target [ ] ± Tolerance [ ] µm	by
♦	2-2.10	Grid Opening Width#1	(specify): Target [ ] ± Tolerance [ ] µm	by

2-6. Surface Preparation#2				
	2-6.1	Particulate Contamination	(specify): ≤[ ] Particles	b
	2-6.2	Surface Roughness	(specify): Target [ ] ± Tolerance [ ] nm rms	b
2-7. ID Marking				
	2-7.1	Type	Two-dimensional square DMC	
	2-7.3	Position	Distance from Chord: 25 µm	b
♦	2-7.4	Face for ID Mark	(specify): Front Face [ ], Rear Face [ ]	
	2-7.5	Dimensions of ID Mark Field	Width = 680 µm Height = 680 µm	b
♦	2-7.6	Side Length of Square Dot#3, #4	Target [ ] ± Tolerance [ ] µm	b
♦	2-7.7	Dot Depth#3, #4	Target [ ] ± Tolerance [ ] µm	b
♦	2-7.8	Marking Quality#4	Better than grade C according to ISO/IEC 29158	I
♦	2-7.9	Content of ID Mark	(specify according to ISO/IEC 16022, ECC200):_____	

TO: Section/Paragraph Table 1, Part 2

Part 2 Lamella Carrier

	ITEM		SPECIFICATION
2-1. General Characteristics			
♦	2-1.1	Manufacturing Method	~~[ ] Method A?~~ ~~[ ] Method B?~~ ~~[ ] Method C?~~ ~~[ ] Other~~ (specify): _____
♦	2-1.2	Form Factor	[ ] Circle, [ ] Half-Moon
2-2. Dimensional Characteristics			
	2-2.1	Outer Diameter	3.025 ± 0.025 mm
	2-2.2	Rim Width	0.525 ± 0.025 mm
	2-2.3	Rim Open Sector Angle#2	±82.5° with respect to the positive *x*-axis with a tolerance −0°/+1°
	2-2.4	Active Area Diameter	1.8 +0/−0.1 mm
♦	2-2.5	Thickness	(specify): Target [ ] ± 10%
	2-2.6	Warp	≤100 µm
♦	2-2.7	Edge Profile	(specify): _____
	2-2.8	Edge Exclusion Zone Width	100 µm ± 10 µm
♦	2-2.9	Grid Bars Width#1	(specify): Target [ ] ± Tolerance [ ] µm
♦	2-2.10	Grid Opening Width#1	(specify): Target [ ] ± Tolerance [ ] µm
2-6. Surface Preparation#2			
♦	2-6.1	Particulate Contamination	(specify): ≤[ ] Particles
♦	2-6.2	Surface Roughness	(specify): Target [ ] ± Tolerance [ ] nm rms
2-7. ID Marking			
	2-7.1	Type	Two-dimensional square DMC
	2-7.~~3~~2	Position	Distance from Chord: 25 µm
♦	2-7.~~4~~3	Face for ID Mark	(specify): Front Face [ ], Rear Face [ ]
	2-7.~~5~~4	Dimensions of ID Mark Field	Width = 680 µm Height = 680 µm
♦	2-7.~~6~~5	Side Length of Square Dot#3, #4	Target [ ] ± Tolerance [ ] µm
♦	2-7.~~7~~6	Dot Depth#3, #4	Target [ ] ± Tolerance [ ] µm
♦	2-7.~~8~~7	Marking Quality#4	Better than grade C according to ISO/IEC 29158
♦	2-7.~~9~~8	Content of ID Mark	(specify according to ISO/IEC 16022, ECC200):_____

Justification: (If necessary)

Table does not match bullet list in Section 7 – editorial change for consistency

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FROM: Section/Paragraph Table 2

Table 2 List of the Labels Used in Alphabetical Order

Label	*Meaning*	*Line Number in Table 1*
ad	Active Area Diameter	2-2.4
β	Rim Open Sector Angle	2-2.3
cd	Chord Distance	2-2.11
ez	Edge Exclusion Zone Width	2-2.8
fd	Distance of the Center of the Left and Right Fiducials from the *x*-Axis of the Coordinate System	
ld	Diameter of Left Fiducial	2-3.2

Label	*Meaning*	*Line Number in Table 1*
lf	Distance of the Center of the Left Fiducial from the *y*-Axis of the Coordinate System	2-3.2
my	Distance of the top of the ID Mark Field from the Chord	2-7.3
mh	Height of the ID Mark Field	2-7.5
mw	Width of the ID Mark Field	2-7.5
o	Grid Opening Width	2-2.10
od	Outer Diameter	2-2.1
pd	Distance of Pin from *y*-axis	2-2.13
ph	Height of Pin	2-2.15
pw	Width of Pin	2-2.14
rd	Side Length of Right Fiducial	2-3.3
rf	Distance of the Center of the Right Fiducial from the *y*-Axis of the Coordinate System	2-3.3

TO: Section/Paragraph Table 2

Table 2 List of the Labels Used in Alphabetical Order

Label	*Meaning*	*Line Number in Table 1*
ad	Active Area Diameter	2-2.4
β	Rim Open Sector Angle	2-2.3
cd	Chord Distance	2-2.11
ez	Edge Exclusion Zone Width	2-2.8
fd	Distance of the ~~C~~center of the Left Fiducial and the baseline of the Right Fiducials from the *x*-Axis of the Coordinate System	2-3.3
ld	Diameter of Left Fiducial	2-3.2
lf	Distance of the ~~C~~center of the Left Fiducial from the *y*-Axis of the Coordinate System	2-3.2
my	Distance of the top of the ID Mark Field from the Chord	2-7.~~3~~2
mh	Height of the ID Mark Field	2-7.~~5~~4
mw	Width of the ID Mark Field	2-7.~~5~~4
o	Grid Opening Width	2-2.10
od	Outer Diameter	2-2.1
pd	Distance of Pins from *y*-axis	2-2.13
ph	Height of Pins	2-2.15
pw	Width of Pins	2-2.14
rd	Side Length of Right Fiducial	2-3.3
rf	Distance of the ~~C~~center of the baseline of the Right Fiducial from the *y*-Axis of the Coordinate System	2-3.3
rw	Rim Width	2-2.2
tc	Thickness	2-2.5
W	Warp	2-2.6
w	Grid Bar Width	2-2.9

Justification: (If necessary)

4	**FROM: Section/Paragraph 8.1.2.8.3** 8.1.2.8.3 *Right Edge Fiducial* — The fiducial shall be a triangular opening with side lengths *rd* = 250 µm ± 20 µm and its base center on the *x*-axis. The coordinates of the base line center shall be *x* = 1.25 mm, *y* = −0.150 mm with tolerances of ±0.01 mm in *x*- and *y*-directions, so that its distance *rf* = 1.25 mm ± 0.01 mm from the *y*-axis and *fd* = 0.150 mm ± 0.01 mm from the *x*-axis of the coordinate system. The tip of the triangle shall be pointing towards the negative *y*-axis. The corners of the triangle shall be rounded with a radius *rr* ≤ 30 µm, see Figure 2.
	TO: Section/Paragraph 8.1.2.8.3 8.1.2.8.3 *Right Edge Fiducial* — The fiducial shall be a triangular opening with side lengths *rd* = 250 µm ± 20 µm and its baseline center on the *x*-axis. The coordinates of the base line center shall be *x* = 1.25 mm, *y* = −0.150 mm with tolerances of ±0.01 mm in *x*- and *y*-directions, so that its distance *rf* = 1.25 mm ± 0.01 mm from the *y*-axis and *fd* = 0.150 mm ± 0.01 mm from the *x*-axis of the coordinate system. The tip of the triangle shall be pointing towards the negative *y*-axis. The corners of the triangle shall be rounded with a radius *rr* ≤ 30 µm, see Figure 2.
	Justification: (If necessary)

Motion	To approve the above editorial change(s).
Motion by/ 2nd by	Laurens Kwakman (Thermo Fisher Scientific) / Larry Hartsough (UA Associates)
Discussion	None
Vote	9 **Y**-0 **N** ; If Y > 50% Motion passes, **GO TO VI**

IV. Safety Check

Note: See *Regulations* § 15 for further information.

Motion	**X**	**This is not a Safety Document**, when all safety-related information is removed, the Document is still technically sound and complete. (*Regulations* ¶ 8.7.1)
		This is a Safety Document, when all safety-related information is removed, the Document is not technically sound and complete. (*Regulations* ¶ 8.7.2)
		Safety Checklist (*Regulations* ¶ 15.3) is complete and has been included with the Document throughout the balloting process. (*Regulations* ¶ 15.1.2)

Motion by/2nd by	Laurens Kwakmen (Thermo Fisher Scientific) / Kenji Yamagata (Daifuku)
Discussion	None.
Vote	10 **Y** -0 **N**; Motion passed.

V. Intellectual Property Check

Note: This Document may cover all or part of a Standard or Safety Guideline. Regardless of the coverage, this IP check applies to the entire Standard or Safety Guideline*. See *Regulations* § 16 for further information.

X	The TC Chapter meeting chair asked those participating, if they were aware of any patented technology that might be relevant (see *Regulations* ¶ 16.3.1.1) to the Standard or Safety Guideline; or, any copyrighted items or trademarks that are used/reproduced (see *Regulations* ¶ 16.4.1.2) in the Standard or Safety Guideline. (Also see, *Regulations* § 8.8)					
	X	The question is NOT answered in affirmative (No potentially material patented technology or use/reproduction of copyrighted items/trademarks is known.)	**GO TO SECTION VI.**			
		The question is answered in affirmative	Is any of the known IPs a patented technology?		**Yes, at least one of them is a patented technology**	**GO TO V (a) "Patented Technology" subsection**
					No	**GO TO V (b) "Copyright items" subsection**

VI. Action for this Document

Motion	**X**	This Document passed TC Chapter review with editorial changes and will be forwarded to the ISC A&R SC for procedural review.

Motion by/ 2nd by	Laurens Kwakmen (Thermo Fisher Scientific) / Larry Hartsough (UA Associates)	
Discussion	None.	
Vote	9 **Y** 0 **N**; Motion passed.	
Final Action	**X**	Motion passed
		Motion failed