Record of Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: North America
Global Technical Committee: Physical Interfaces & Carriers
TC Chapter Cochairs: Matt Fuller (Entegris), Melvin Jung (Intel)
Standards Staff: Laura Nguyen

	Scheduled in Background Statement	Actual
Date	07/10/2019	07/10/2019
Location	Moscone Center, San Francisco, CA	Moscone Center, San Francisco, CA
Reason for Change of Date and/or Location (if changed)		

Note: See *Regulations* ¶ 9.5 Exceptions for allowable reason to change.

I. Document Number and Title

Document Number	Document Title
6311A	New Standard: SPECIFICATION FOR TEM LAMELLA CARRIERS USED IN ELECTRON MICROSCOPY WORKFLOWS

II. Tally

Standards staff to fill in.

Voting Tally: As-cast tally after close of voting period

Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (*Regulations* ¶ 9.6.2.1.1)

Voting Tally (with example values):

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	55	÷	83	=	66.3%	≥60%
Intercommittee Ballot	44					
Voting Interest Reject(s)	1		Total Voters with Rejects		1	
Voting Interest Accept(s)	37					

Note: See *Regulations* § 3.2.1 for definition of Voting Interest.

III. Rejects

Voting Interest Reject 1 (Voting Interest Name: TEL)
Voter Reject 1 (Voter: Supika Mashiro/Tokyo Electron Ltd.)
Negative 1

<table>
<tr>
<td rowspan="6">Negative</td>
<td>Referenced Section/ Paragraph</td>
<td colspan="4">*TF/TC Chapter to fill in, including text in the ballot if necessary.</td>
</tr>
<tr>
<td colspan="4">Section 7</td>
</tr>
<tr>
<td rowspan="4">Negative Text</td>
<td colspan="4">*Original complete Negative text (e.g., issue, justification, suggestion) should be copied.</td>
</tr>
<tr>
<td colspan="4">The usage of footnotes in section 7 is wrong and not in accordace with the Style Manual. As the footnote doesn't provide reference to outside SEMI material or trademark owner information. They should be expressed by using NOTE following each section needs an explanation by a description in NOTE.
It seems the TF leader/author confuse the requirement of using footnote in a Figure or Table.</td>
</tr>
</table>

<table>
<tr>
<td colspan="2">TF input (optional)</td>
<td colspan="4"></td>
</tr>
<tr>
<td colspan="2" rowspan="2">Withdrawal (check one)</td>
<td>X</td>
<td colspan="2">No Negative withdrawal made by Voter.</td>
<td>GO TO "Related" subsection</td>
</tr>
<tr>
<td></td>
<td colspan="2">Withdrawal document received by Standards staff on MM/DD/YYYY.</td>
<td>GO TO "Final" subsection → (A)</td>
</tr>
<tr>
<td rowspan="10">Related</td>
<td rowspan="3">Motion and Reason (check one)</td>
<td>X</td>
<td colspan="2">'Related' is mutually agreed upon. (Needs no motion.)</td>
<td>GO TO "Persuasive" subsection</td>
</tr>
<tr>
<td></td>
<td colspan="3">Negative is not related. (Needs ≥2/3 votes to pass.)</td>
</tr>
<tr>
<td style="background:black;"></td>
<td>Reason</td>
<td>XXXX</td>
<td></td>
</tr>
<tr>
<td colspan="2">Motion by/ 2nd by</td>
<td colspan="3">Name (Company)/Name (Company)</td>
</tr>
<tr>
<td colspan="2">Discussion</td>
<td colspan="3"></td>
</tr>
<tr>
<td colspan="2" rowspan="3">Result of Vote (check one)</td>
<td colspan="3">XX Y-XX N; Motion passed/failed.</td>
</tr>
<tr>
<td></td>
<td colspan="2">[Negative is not related.] < 2/3</td>
<td>GO TO "Persuasive" subsection</td>
</tr>
<tr>
<td></td>
<td colspan="2">2/3 ≤ [Negative is not related.]</td>
<td>GO TO "Final" subsection → (B)</td>
</tr>
<tr>
<td rowspan="6">Persuasive</td>
<td rowspan="3">Motion and Reason (check one)</td>
<td></td>
<td colspan="3">Negative is related and persuasive. (Needs >1/3 votes to pass.)</td>
</tr>
<tr>
<td>X</td>
<td colspan="3">Negative is related and not persuasive. (Needs ≥2/3 votes to pass.)</td>
</tr>
<tr>
<td style="background:black;"></td>
<td>Reason</td>
<td colspan="2">The issue can be resolved by an editorial change.</td>
</tr>
<tr>
<td colspan="2">Motion by/ 2nd by</td>
<td colspan="3">Larry Hartsough (UA Associates) / Alan Crockett (Self)</td>
</tr>
<tr>
<td colspan="2">Discussion</td>
<td colspan="3">None.</td>
</tr>
<tr>
<td colspan="2"></td>
<td colspan="3">11 Y-0 N; Motion passed.</td>
</tr>
</table>

Result of Vote (check one)			[Negative is related and persuasive.] > 1/3	**Is a technical change recommended?** (check one)		**Y**	**GO TO "Address by Technical Change Option" subsection**
			[Negative is related and not persuasive.] < 2/3			**N**	**GO TO "Final" subsection → (E)**
		X	2/3 ≤ [Negative is related and not persuasive.] < 90%	**GO TO "Final" subsection → (C)**			
			90% ≤ [Negative is related and not persuasive.]	**GO TO "Not Significant Finding Option" subsection**			
Final	**(check if applicable)**		**(A)**	Withdrawn **(counted under h in disposition)**			
			(B)	Not related **(counted under i in disposition)**			
		X	**(C)**	Related and not persuasive (significant)			
			(D)	Not significant **(counted under j in disposition)**			
			(E)	Related and persuasive and not addressed by technical change	**DOCUMENT FAILS**		
			(F)	Addressed by technical change **(counted under k disposition)**			
	(check if applicable)	**X**	Comment generated. **See Section V-(ii) Comment #**1.				

Disposition of Voting Interest Reject 1

Check only when the Document has not been failed.

1	Original number (#) of Negatives		**(g)**
0	Number of Negatives withdrawn		**(h)**
0	Number of Negatives found not related		**(i)**
0	Number of Negatives found not significant		**(j)**
0	Number of Negatives addressed by technical change **(Negative becomes not significant)**		**(k)**
Final		$g - (h + i + j + k) = 0$	**Reject is Not Valid and is not included in the denominator of § VI. *Approval Conditions Check***
	X	$g - (h + i + j + k) > 0$	**Reject is included in the denominator of § VI. *Approval Conditions Check***
		Reject without a Negative	**Not Valid**

Note: If all of the Negatives included with a Reject Vote are withdrawn, determined to be not related, or determined to be not significant, the Reject Vote is not valid. (*Regulations* ¶ 9.4.3.3)
Note: A Negative addressed by a technical change is automatically considered to be not significant. (*Regulations* ¶ 9.6.1.4.5.2)

IV. Other Technical Issues
None

Note: TC Chapter may choose to address a technical issue that is not part of a Negative received on a Letter Ballot (i.e., a Comment or a reason not addressed by a Vote response) by handling it as a Negative and finding it related and technically persuasive. The TC Chapter may then fail the Document or address such technical issue by using the procedure defined in *Regulations* § 9.6.1.4.3 to make a technical change to the Document. (*Regulations* ¶ 9.6.1.4.2.5)

V. Comments
V- (i) Voters' Comments
Commenter 1 (Hirokazu Tsunobuchi/Keyence) - Comment 1

<table>
<tr>
<td rowspan="2">Comment</td>
<td colspan="2">*TF/TC Chapter to fill in section/paragraph #, if necessary.</td>
</tr>
<tr>
<td colspan="2">

2-7. ID MARKING

2-7.1	Type	~~2-dim square DMC~~ Data Matrix (2D code)	ISO16022
2-7.3	Position	Distance from Chord: 25 μm	by mutual agreement
2-7.4	Face for ID Mark	(specify): Front Face [ ], Rear Face [ ]	by mutual agreement
2-7.5	~~Dimensions of ID Mark Window~~ Exclusion zone for ID Mark	Width = 680 μm Height = 680 μm	~~by mutual agreement~~
2-7.6	Side Length of Square Dot#3,#4	Target [ ] ± Tolerance [ ] μm	by mutual agreement
2-7.7	Dot Depth #3,#4	Target [ ] ± Tolerance [ ] μm	by mutual agreement
2-7.8	Marking Quality#4	Better than grade C according to ISO 29158	ISO 29158
~~2-7.9~~	~~Content of ID Mark~~	~~(specify according to ISO 16022, ECC200):~~	

#3 Target values aiming at a Mark Grade better than C according to ISO 29158
#4 Specify either according to lines 2-7.6 and 2-7.7 or according to line 2-7.8

</td>
</tr>
</table>

Action		The TC Chapter agreed to do one of the following actions. Taskforce Recommendation (unanimous hand vote) Line 2-7.5: Change from 'Dimension of ID mark 'window' to 'field'	

The TC Chapter agreed to do one of the following actions.
Taskforce Recommendation (unanimous hand vote)
Line 2-7.5: Change from 'Dimension of ID mark 'window' to 'field'

*No motion is required in this step.

	Already addressed by Commenter #, Comment #
	No further action was taken by the TC Chapter.
	Refer to the TF for more consideration.
	New Business
X	Editorial Change

Options for editorial change (check one)		Case 1: No vote in this section:
		To be included and voted on as a group in § VI. *Editorial Changes Other than Those Voted on in § V.*
		Case 2: Voted in this section:
	X	Original section number and at least one full sentence are required in "FROM" and "TO" fields.

Line 2-7.5

	2-7.4	Face for ID Mark	(specify): Front Face [ ], Rear Face [ ]	
	2-7.5	Dimensions of ID Mark Window	Width = 680 μm Height = 680 μm	by mutual agreement

Table 2

lf	Distance of the Center of the Left Fiducial from the *y*-Axis of the Coordinate System	
my	Distance of the top of the ID Mark Window from the Chord	2-7.3
mh	Height of the ID Mark Window	2-7.5
mw	Width of the ID Mark Window	2-7.5
o	Grid Opening Width	2-2.9
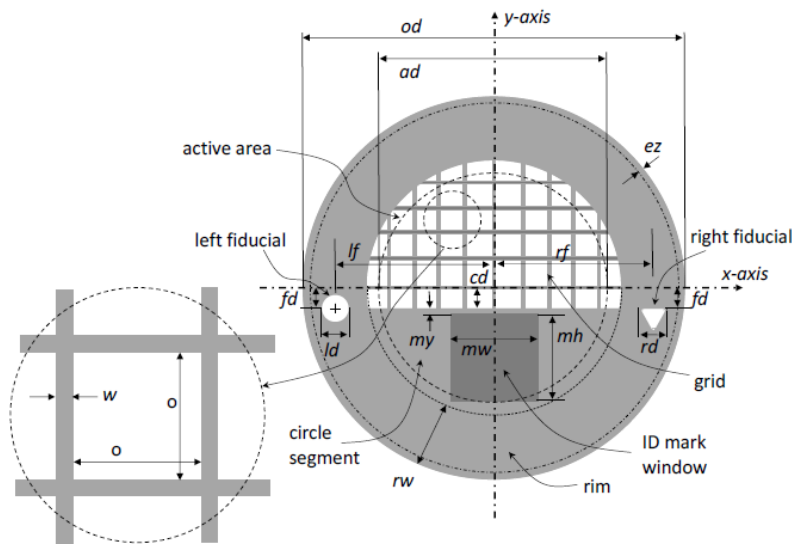
Figure 1

Figure 1
Drawing of Grid Lamella Carrier as Viewed from Front Face

8.1.4.2

8.1.4.2 *Dimensions, of ID Mark Window* — The mark shall be located within a window of width $mw = 680$ μm and a height of $mh = 680$ μm.

8.1.4.3

8.1.4.3 *Location* — The mark window shall be positioned on the circle segment. The window shall be symmetric with respect to the *y*-axis and shall be below the chord by the distance $my = 25$ μm. The DMC itself shall be completely within the mark window and the active area.

8.1.4.4

8.1.4.4 *Face for ID Mark Window* — The face the ID mark is located shall conform to the face as specified in the purchase order.

Note 1

NOTE 1: With a dot size of 30 μm 10 × 10, 12 × 12 and 16 × 16 dot matrices fit in the ID mark window.

Editorial Changes

1

Figure 4
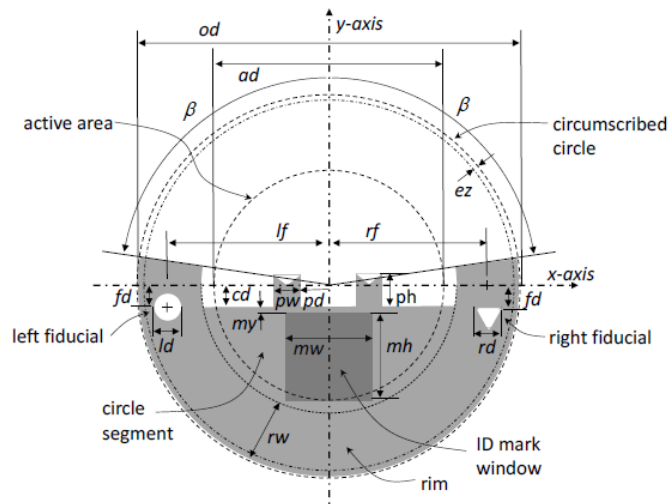
Figure 4
Drawing of Half-Moon Lamella Carrier as Viewed from Front Face.
Number, Position and Shape of Pins shown in the Figure are only an Example.

TO: Section/Paragraph

	2-7.5	Dimensions of ID Mark ~~Window~~Field	Width = 680 µm Height = 680 µm	by mutual agreement
		Side Length of Square		

Table 2

	Coordinate System	
my	Distance of the top of the ID Mark Field ~~Window~~ from the Chord	2-7.3
mh	Height of the ID Mark ~~Window~~Field	2-7.5
mw	Width of the ID Mark ~~Window~~Field	2-7.5
o	Grid Opening Width	2-2.9
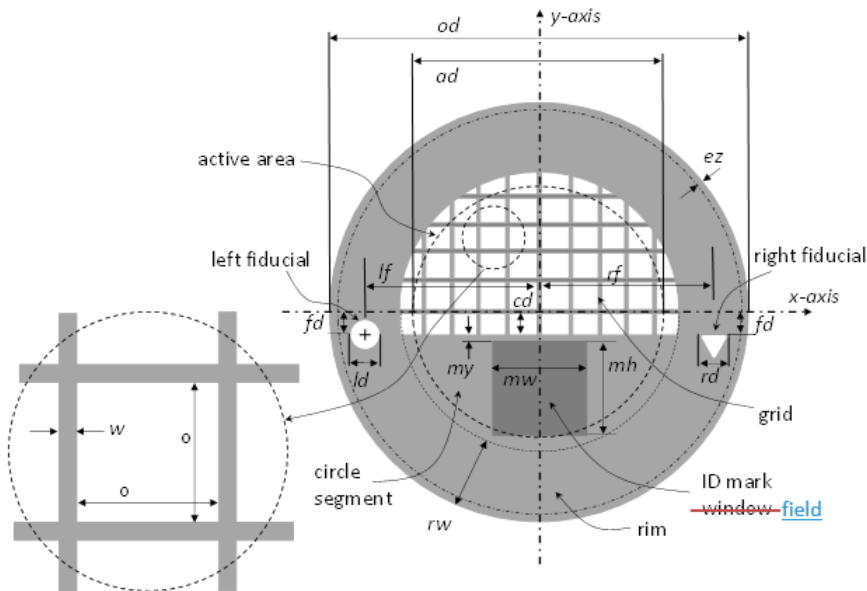
Figure 1

Figure 1
Drawing of Grid Lamella Carrier as Viewed from Front Face

8.1.4.2

8.1.4.2 *Dimensions, of ID Mark ~~Window~~ Field* — The mark shall be located within a ~~window~~ field of width $mw = 680$ µm and a height of $mh = 680$ µm.

8.1.4.3

8.1.4.3 *Location* — The mark ~~window~~ field shall be positioned on the circle segment. The ~~window~~ field shall be symmetric with respect to the y-axis and shall be below the chord by the distance $my = 25$ µm. The DMC itself shall be completely within the mark ~~window~~ field and the active area.

8.1.4.4

8.1.4.4 *Face for ID Mark ~~Window~~* — The face the ID mark is located shall conform to the face as specified in the purchase order.

Note 1

NOTE 1: With a dot size of 30 µm 10 × 10, 12 × 12 and 16 × 16 dot matrices fit in the ID mark field~~window~~.
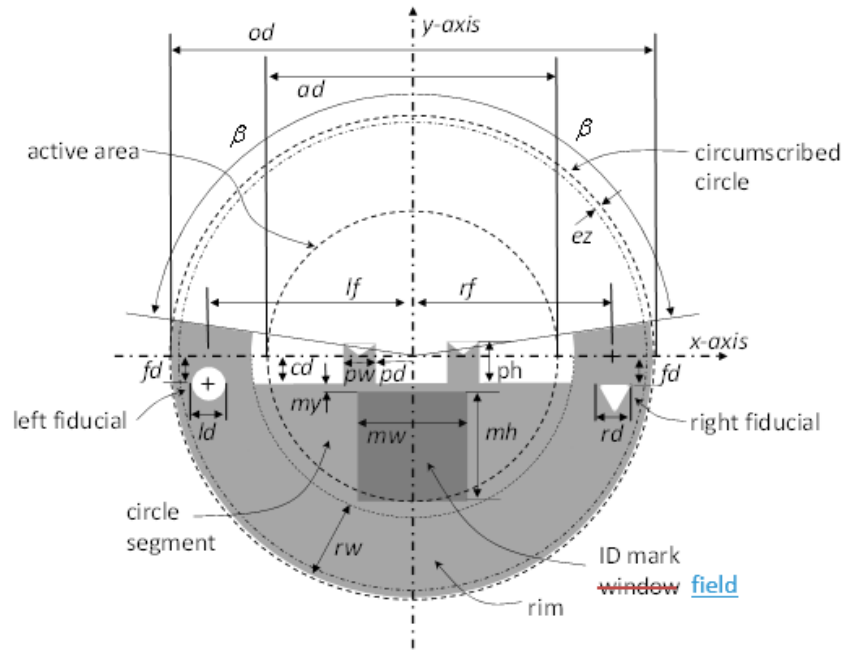
7

Figure 4

Figure 4
Drawing of Half-Moon Lamella Carrier as Viewed from Front Face.
Number, Position and Shape of Pins shown in the Figure are only an Example.

Justification (If necessary) Change from 'Dimension of ID mark 'window' to 'field' throughout the document. "Mark Field" is defined in the COT.	

Motion	To approve above editorial change(s) And to not to follow the comments with the exception of the editorial change of the term "ID Mark Window" to "ID Mark Field". Change from 'Dimension of ID mark 'window' to 'field' throughout the document.
Motion by/2nd by	Peter Wagner (Self) / Larry Hartsough (UA Associates)
Discussion	"Mark Field" is defined in the COT. Figures 1 and 4 also need to be changed.
Vote	10 **Y**-0 **N**; Motion passed.

This table is needed for each Comment accompanied a Vote

Commenter 2 (Tsuyoshi Onishi/Hitachi Ltd.) - Comment 1

Comment

*TF/TC Chapter to fill in section/paragraph #, if necessary.

We decide to accept this SEMI draft document 6311A.
But there is more appropriate expression for some terms and items in "2-7 ID Marking".
We would like to expect that these items will be corrected.

2-7. ID MARKING

2-7.1	Type	~~2-dim square DMC~~ Data Matrix (2D code)	ISO16022
2-7.3	Position	Distance from Chord: 25 μm	by mutual agreement
2-7.4	Face for ID Mark	(specify): Front Face [ ], Rear Face [ ]	by mutual agreement
2-7.5	~~Dimensions of ID Mark Window~~ Exclusion zone for ID Mark	Width = 680 μm Height = 680 μm	~~by mutual agreement~~
2-7.6	Side Length of Square Dot#3,#4	Target [ ] ± Tolerance [ ] μm	by mutual agreement
2-7.7	Dot Depth #3,#4	Target [ ] ± Tolerance [ ] μm	by mutual agreement
2-7.8	Marking Quality#4	Better than grade C according to ISO 29158	ISO 29158
~~2-7.9~~	~~Content of ID Mark~~	~~(specify according to ISO 16022, ECC200):~~	

#3 Target values aiming at a Mark Grade better than C according to ISO 29158
#4 Specify either according to lines 2-7.6 and 2-7.7 or according to line 2-7.8

Action

The TC Chapter agreed to do one of the following actions.
Taskforce Recommendation (unanimous hand vote)
Line 2-7.5: Change from 'Dimension of ID mark 'window' to 'field'

*No motion is required in this step.

X	Already addressed by Commenter 1, Comment #1
	No further action was taken by the TC Chapter.
	Refer to the TF for more consideration.
	New Business
	Editorial Change

Commenter 3 (Kyoichiro Asayama/JEOL) - Comment 1

<table>
<tr><td rowspan="7">Comment</td><td colspan="2">*TF/TC Chapter to fill in section/paragraph #, if necessary.</td></tr>
<tr><td colspan="2">We accept this SEMI draft document 6311A.
But there is more appropriate expression for some terms and items in '2 7 ID Marking'.
We would like to expect that these items will be corrected.</td></tr>
</table>

2-7. ID MARKING

2-7.1	Type	~~2-dim square DMC~~ Data Matrix (2D code)	ISO16022
2-7.3	Position	Distance from Chord: 25 μm	by mutual agreement
2-7.4	Face for ID Mark	(specify): Front Face [ ], Rear Face [ ]	by mutual agreement
2-7.5	~~Dimensions of ID Mark Window~~ **Exclusion zone for ID Mark**	Width = 680 μm Height = 680 μm	~~by mutual agreement~~
2-7.6	Side Length of Square Dot#3,#4	Target [ ] ± Tolerance [ ] μm	by mutual agreement
2-7.7	Dot Depth #3,#4	Target [ ] ± Tolerance [ ] μm	by mutual agreement
2-7.8	Marking Quality#4	Better than grade C according to ISO 29158	ISO 29158
~~2-7.9~~	~~Content of ID Mark~~	~~(specify according to ISO 16022, ECC200):~~	

#3 Target values aiming at a Mark Grade better than C according to ISO 29158
#4 Specify either according to lines 2-7.6 and 2-7.7 or according to line 2-7.8

<table>
<tr><td rowspan="6">Action</td><td colspan="2">The TC Chapter agreed to do one of the following actions.
Taskforce Recommendation (unanimous hand vote)
Line 2-7.5: Change from 'Dimension of ID mark 'window' to 'field'

*No motion is required in this step.</td></tr>
<tr><td>X</td><td>Already addressed by Commenter 1, Comment #1</td></tr>
<tr><td></td><td>No further action was taken by the TC Chapter.</td></tr>
<tr><td></td><td>Refer to the TF for more consideration.</td></tr>
<tr><td></td><td>New Business</td></tr>
<tr><td></td><td>Editorial Change</td></tr>
</table>

V-(ii) Comments Created by Handling Negative
Comment (Created by Handling Negative) NC – 1

<table>
<tr><td rowspan="2">Comment</td><td colspan="2">*TF/TC Chapter to fill in</td></tr>
<tr><td colspan="2">The usage of footnotes in section 7 is wrong and not in accordace with the Style Manual. As the footnote doesn't provide reference to outside SEMI material or trademark owner information. They should be expressed by using NOTE following each section needs an explanation by a description in NOTE.
It seems the TF leader/author confuse the requirement of using footnote in a Figure or Table.</td></tr>
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<tr><td></td><td>Already addressed by Commenter #, Comment #</td></tr>
<tr><td></td><td>No further action was taken by the TC Chapter.</td></tr>
<tr><td></td><td>Refer to the TF for more consideration.</td></tr>
<tr><td></td><td>New business</td></tr>
<tr><td>X</td><td>Editorial change</td></tr>
</table>

	Options for editorial change (check one)		**Case 1: No vote in this section:**	
			Case 2: Voted in this section:	
		X		

Editorial Changes

1

FROM: Section/Paragraph Section 7.1

- 2-1.1 Manufacturing Method
- 2-1.2 Form Factor
- 2-2.5 Thickness
- 2-2.7 Edge Profile
- 2-2.9 Grid Bar Width[3]
- 2-2.9 Grid Opening Width[3]
- 2-2.12 Number of Pins[4]
- 2-2.12 Distance of Pins from y-Axis[4]
- 2-2.13 Width of Pin[4]
- 2-2.13 Height of Pin[4]
- 2-2.16 Shape of the Pins

- 2-4.1 Material(s) of LC
- 2-5.1 Material of Film[3]
- 2-5.2 Thickness of Film[3]
- 2-5.4 Total Number of Defective Sites in Zones A, B and C[3]
- 2-5.5 Missing Film Area[3]
- 2-5.6 Surface Roughness[3]
- 2-6.1 Particulate Contamination[4]
- 2-6.2 Surface Roughness[4]
- 2-7.4 Face for the ID Mark
- 2-7.6 Side Length of Square Dot[5]
- 2-7.7 Depth of Dot[5]
- 2-7.8 Marking Quality[5]
- 2-7.9 Content of ID Mark

[5] Either dot size and depth or marking quality shall be included in the purchase order.

[3] Applies only to grid LC
[4] Applies only to half-moon LC

TO: Section/Paragraph Section 7.1

- 2-1.1 Manufacturing Method
- 2-1.2 Form Factor
- 2-2.5 Thickness
- 2-2.7 Edge Profile
- 2-2.9 Grid Bar Width[3]
- 2-2.9 Grid Opening Width[3]
- 2-2.12 Number of Pins[4]
- 2-2.12 Distance of Pins from y-Axis[4]
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- 2-2.13 Height of Pin[4]
- 2-2.16 Shape of the Pins

- 2-4.1 Material(s) of LC
- 2-5.1 Material of Film[3]
- 2-5.2 Thickness of Film[3]
- 2-5.4 Total Number of Defective Sites in Zones A, B and C[3]
- 2-5.5 Missing Film Area[3]
- 2-5.6 Surface Roughness[3]
- 2-6.1 Particulate Contamination[4]
- 2-6.2 Surface Roughness[4]
- 2-7.4 Face for the ID Mark
- 2-7.6 Side Length of Square Dot[5]
- 2-7.7 Depth of Dot[5]
- 2-7.8 Marking Quality[5]
- 2-7.9 Content of ID Mark

[5] Either dot size and depth or marking quality shall be included in the purchase order.

[3] Applies only to grid LC
[4] Applies only to half-moon LC

Justification (If necessary)
Motion is justified because the information is already contained in the acceptable Table Footnote(s).

Motion	To approve above editorial change(s)
Motion by/2nd by	Larry Hartsough (UA Associates) / Alan Crockett (Self)
Discussion	Motion is justified because the information is already contained in the acceptable Table Footnote(s).
Vote	11 Y-0 N; Motion passed.

This table is needed for each Comment created by handling Negative.

VI. Editorial Changes Other than Those Voted on in § V
None other than listed in previous section.

VII. Approval Conditions Check
VII. - (i). Approval Rate

APPROVAL CONDITION 1: All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (*Regulations* ¶ 9.6.2.1.2)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations* ¶ 9.6.2.1.3)

Note: If both approval conditions are not satisfied, the Document fails.

		Accepts		(Accepts + Valid Rejects)			
Approval Rate	=	37	/	38	=	97.4%	≥90%

VII. – (ii) Approval Level (check one)

Note: See *Regulations* § 9.6.2 for further information.

X **Globally Approved (No Ratification Ballot needed):**
The Letter Ballot meets the Letter Ballot approval conditions for the global technical committee.

Need a Ratification Ballot:
The Letter Ballot meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.

VIII. Safety Check

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		Troy Morrison (Thermo Fisher Scientific) / Alan Crockett (Self)
Discussion		None.
Vote		9 **Y**-XX **N**; Motion passed or failed

IX. Intellectual Property (IP) Check

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 X.**		
		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 IX (a) "Patented Technology" subsection**
				No	**GO TO IX (b) "Copyright items" subsection**

X. Action for This Document

	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		Alan Crockett (Self) / Troy Morrison (Thermo Fisher Scientific)	
Discussion		None.	
Vote		9 **Y**-0 **N**	
Final Action		X	Motion passed
			Motion failed