

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

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)	
LEXINGTON LUMINANCE LLC,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 12-cv-12216-DJC
)	
AMAZON.COM, INC. and)	
AMAZON DIGITAL SERVICES, INC.,)	
)	
Defendants.)	
_____)	

MEMORANDUM AND ORDER

CASPER, J.

March 18, 2014

I. Introduction

Plaintiff Lexington Luminance LLC (“Lexington”) has filed this lawsuit for patent infringement against Amazon.com, Inc. and Amazon Digital Services, Inc. (collectively “Amazon”). Amazon has now moved for judgment on the pleadings. D. 49. In addition, the parties have argued their proposed claim constructions before the Court and the Court’s claim constructions follow. For the reasons stated below, the Court **ALLOWS** Amazon’s motion for judgment on the pleadings.

II. Standard of Review

A. Claim Construction

Claim construction is a question of law for the determination by the court. Markman v. Westview Instruments, Inc., 517 U.S. 370, 388-89 (1996). The Court assigns claim terms the ordinary and customary meaning that a person of ordinary skill in the art in question would have

assigned to the terms at the time of the invention. Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (citations omitted). “[T]he person of ordinary skill in the art is deemed to read the claim term . . . in the context of the entire patent, including the specification.” Id. at 1313.

The patent specification “is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term.” Id. at 1315 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). In fact, “the claims themselves provide substantial guidance as to the meaning of particular claim terms.” Id. at 1314. Because the purpose of the specification is to “teach and enable those of skill in the art to make and use the invention and to provide the best mode for doing so,” Phillips, 415 F.3d at 1323, it is “entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims.” Id. at 1317.

The patent’s prosecution history “can [also] often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” Id. (citations omitted). Although courts generally do not accord extrinsic evidence the weight that they accord to intrinsic evidence, the Court may consider extrinsic evidence “if the court deems it helpful in determining the true meaning of language used in the patent claims.” Id. at 1318. Ultimately, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention [in the specification] will be, in the end, the correct construction.” Id. at 1316 (citation omitted).

B. Indefiniteness

The Patent Act requires that every patent’s specification must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112(b). “Because the claims perform the fundamental function of delineating the scope of the invention, the purpose of the definiteness requirement is to ensure that the claims delineate the scope of the invention using language that adequately notifies the public of the patentee’s right to exclude,” Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citations omitted), and the boundaries of the patentee’s invention, Halliburton Energy Servs., Inc. v. M-I LLC, 514 F.3d 1244, 1253 (Fed. Cir. 2008). The patentee has satisfied this requirement only when the claims “clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise.” United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 236 (1942).

Patents are presumed valid. 35 U.S.C. § 282(a). “By finding claims indefinite only if reasonable efforts at claim construction prove futile, [courts] accord respect to the statutory presumption of validity and we protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal.” Exxon Research & Eng’g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). A party seeking a declaration of invalidity must prove same by clear and convincing evidence. Budde v. Harley–Davidson, Inc., 250 F.3d 1369, 1376 (Fed. Cir. 2001).

C. Motion for Judgment on the Pleadings

Pursuant to Rule 12(c), a party may move for judgment on the pleadings. “A motion for judgment on the pleadings is treated much like a Rule 12(b)(6) motion to dismiss.” Perez-Acevedo v. Rivero–Cubano, 520 F.3d 26, 29 (1st Cir. 2008) (citing Curran v. Cousins, 509 F.3d

36, 43-44 (1st Cir. 2007)). When considering a motion under Rule 12(c), a court must view the facts in the pleadings and the reasonable inferences therefrom in the light most favorable to the nonmovant. Perez-Acevedo, 520 F.3d at 29 (citation omitted). In reviewing the motion, the Court may also “consider ‘documents the authenticity of which are not disputed by the parties; . . . documents central to plaintiffs’ claim; [and] documents sufficiently referred to in the complaint.’” Curran, 509 F.3d at 44 (quoting Watterson v. Page, 987 F.2d 1, 3 (1st Cir. 1993)). To survive a Rule 12(c) motion, “a complaint must contain factual allegations that ‘raise a right to relief above the speculative level, on the assumption that all the allegations in the complaint are true. . . .’” Perez-Acevedo, 520 F.3d at 29 (quoting Bell Atlantic Corp. v. Twombly, 550 U.S. 544, 555 (2007)). “[A]n adequate complaint must provide fair notice to the defendants and state a facially plausible legal claim.” Ocasio-Hernandez v. Fortuño-Burset, 640 F.3d 1, 12 (1st Cir. 2011).

III. Factual Background and Procedural History

Lexington is a limited liability company organized under the laws of Massachusetts that is the sole owner of U.S. Patent No. 6,936,851 (“the ‘851 patent”) entitled “Semiconductor Light-Emitting Device and Method for Manufacturing the Same.” D. 1 ¶ 1, 9. The ‘851 patent’s specification describes the invention as relating to “the fabrication of semiconductor devices such as light-emitting devices in misfit systems.” Col. 1:9-10.¹ A light-emitting diode (“LED”) is a semiconductor light source that is used in various pieces of electronic equipment, especially for displaying readings on digital displays. D. 50 at 3; D. 51 at 6; D. 82-1 at 7-22. Part of the process for creating an LED includes applying a semiconductor layer on a substrate. Col. 2:12-

¹ References to “Col. _:_” refer to column and line numbers for the ‘851 patent. As the patent is attached to the complaint, the Court may consider it in its resolution of Amazon’s motion. Watterson, 987 F.2d at 3.

26. The atomic structures of these two layers both form a matrix or “lattice” pattern, but do not align perfectly and therefore form what the patent refers to as a “lattice misfit system.” Col. 1:9-10. One of the drawbacks of the “misfit system” is that “the quality of the directly disposed layer is inferior to the penetration of the threading dislocations in this material system.” Col. 1:19-23. Elsewhere in the patent these are referred to as “lattice defects.” Col. 1:11. That is, as Lexington contended at the Markman hearing, because the atoms in these structures do not align perfectly, these defects propagate in the active layer of the LED construct and manifest themselves by decreasing the efficacy and longevity of the device. D. 84 (argument at 11/21/2014 Markman hearing). The patented invention teaches the user to “guide” “the lattice defects” such that they are “contained in designated locations,” which results in “the free propagation of extended defects . . . [being] restricted and the overall defect density of the system [being] reduced.” Col. 1:12-15. The invention accomplishes this feat by creating a curved surface or “textured district” atop the substrate. Col. 8:38. Accordingly, the defects do not all rise directly upward into the active layer of the LED device, but instead bounce to the side, as demonstrated in Figure 2A of the patent:

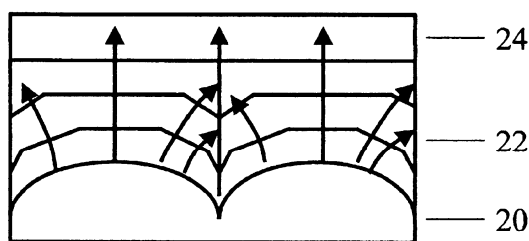


Fig. 2A

Only one of the patent claims is at issue in this litigation, claim 1, which reads:

A semi conductor light-emitting device comprising: a substrate; a textured district defined on the surface, of said substrate comprising a plurality of etched trenches having a sloped etching profile with a smooth rotation of microfacets

without a prescribed angle of inclination; a first layer disposed on said textured district; comprising a plurality of inclined lower portions so as to guide the extended lattice defects away from propagating into the active layer, said first layer and said substrate form a lattice-mismatched system, said substrate is selected from the group comprising group III-V, group IV, group II-VI elements and alloys, ZnO, spinel and sapphire; and a light-emitting structure containing an active layer disposed on said first layer.

Col. 8:35-52.

Amazon markets e-reader devices and tablet computers, including the “Kindle Fire.” D. 1 ¶ 12. Lexington filed this lawsuit on November 29, 2012 and alleges that these Amazon products infringe the ‘851 patent. *Id.* Amazon filed its answer and counterclaims on February 15, 2013, asserting an invalidity defense, D. 13 at 4 ¶ 16, and a counterclaim for a declaratory judgment that that the ‘851 is invalid. *Id.* at 7 ¶ 17. Amazon moved for judgment on the pleadings on its invalidity defense to Lexington’s claim of infringement and its counterclaim for a declaration of invalidity. D. 49. The Court heard the parties on these matters and on claim construction on November 21, 2013 and took this matter under advisement. D. 84.

IV. Discussion

A. Undisputed Terms

As an initial matter, the Court adopts the undisputed constructions jointly proposed by the parties. These terms shall be construed as follows:

<u>Term</u>	<u>Construction</u>
Substrate	The supporting material upon which the other layers of an light-emitting device are grown
Layer	A thickness of material, which may be made up of sublayers, but does not refer to a substrate
Disposed on	Applied directly or indirectly above

Comprising a plurality of inclined lower portions	Including one or more lower portions that are inclined relative to the overall plane of the substrate
Lattice-mismatched misfit system	A system in which a crystal layer exhibiting one lattice constant is disposed on a substrate that exhibits a different lattice constant
Group III-V . . . elements and alloys	an alloy of at least one group III element (i.e., boron, aluminum, gallium, indium, thallium, scandium, yttrium) and at least one group V element (i.e., nitrogen, phosphorous, arsenic, antimony, bismuth, vanadium, niobium, tantalum, dubnium)
Group IV . . . elements and alloys	a group IV element alone (i.e., carbon, silicon, germanium, tin, lead, titanium, zirconium, hafnium, rutherfordium), or an alloy of two or more group IV elements
group II-VI . . . elements and alloys	an alloy of at least one group II element (i.e., beryllium, magnesium, calcium, strontium, barium, radium, zinc, cadmium, mercury, copernicium) and at least one group VI element (i.e., oxygen, sulfur, selenium, tellurium, polonium, livermorium, chromium, molybdenum, tungsten, seaborgium)
active layer	the layer in the light-emitting device that emits the light

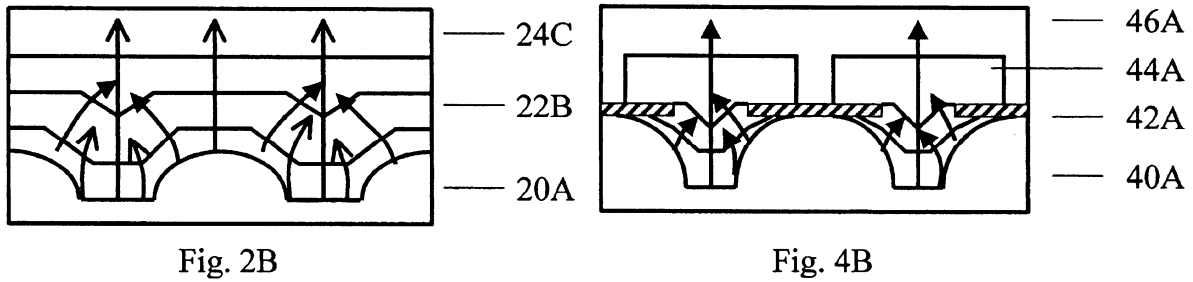
B. Disputed Terms

The parties dispute the meaning of the following terms and the Court resolves these disputes as discussed below:

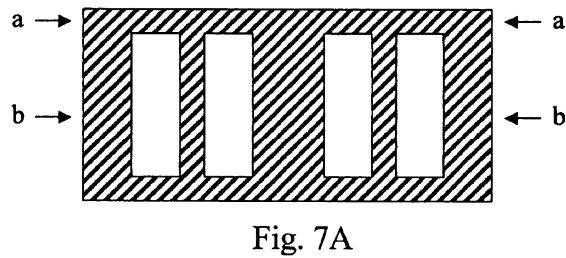
1. “Trenches”

Term	Lexington’s Proposed Construction	Amazon’s Proposed Construction
trenches	[No construction required] otherwise, areas in the surface of the substrate from which some amount of material is removed in order to create a pattern on the surface of the substrate	Generally elongated depressions bounded on the sides and bottom and open at the top

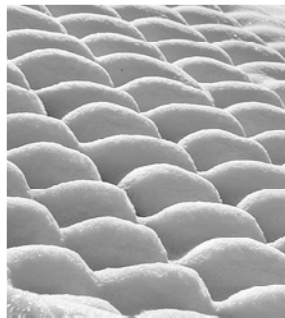
The parties' disagreement regarding "trenches" lies at the heart of the dispute as to how the Court should construe the claim. At oral argument, Lexington argued that Figure 2B and Figure 4B of the patent support its proposed construction.



Extrapolating from this figure, and relying on language from the specification that describes the trenches as "stripes" or "mesas," Col. 3:48, Lexington's position is that the surface of the substrate can appear as "stripes," as shown in Fig. 7A,



or as "mesas." D. 50 at 7-10. An aerial view of "mesas," however, does not appear in the specification. Accordingly, at oral argument, counsel for Lexington brought his own model of such a construct, resembling the following three-dimensional image of snow moguls:



Lexington argues that if this is a potential embodiment of the patent-in-suit, then the trenches could not be generally elongated if the “textured district” is a mesa pattern. D. 58 at 4-6. Amazon, at oral argument, noted that a visual rendering of mesas does not appear in the specification, and that if Lexington wanted to claim such a feature, it could have done so. D. 84. Amazon also points to the “ordinary meaning” of trench – a depression in an otherwise flat surface, which is bounded on the side and open on the top. D. 51 at 10.

Ultimately, when construing a claim, the Court must look to the ordinary meaning of trench first. E-Pass Technologies, Inc. v. 3Com Corp., 343 F.3d 1364, 1368 (Fed. Cir. 2003) (citation and internal quotation marks omitted) (applying the “heavy presumption that a claim term carries its ordinary and customary meaning”). The Court agrees with Amazon, that by their plain and ordinary meaning, trenches are “depressions bounded on the sides and bottom and open at the top.” D. 51 at 10. However, the Court declines to go so far as to limit “trenches” to being “generally elongated,” in the absence of any claim language supporting this proposition and where the ordinary meaning of “trench” does not necessarily support such a limitation. See Aventis Pharma S.A. v. Hospira, Inc., 675 F.3d 1324, 1330 (Fed. Cir. 2012) (noting that “[i]t is . . . not enough that the only embodiments, or all of the embodiments, contain a particular limitation” to limit a claim term beyond its ordinary meaning) (internal citations omitted).

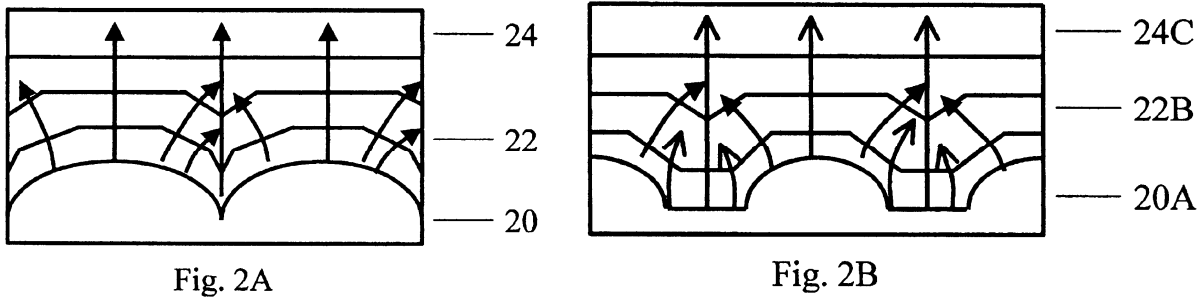
Accordingly, the Court construes “trenches” to mean “depressions bounded on the sides and bottom and open at the top.”

2. “Having”

Term	Lexington’s Proposed Construction	Amazon’s Proposed Construction
Having	[No construction required] otherwise, comprising	Consisting of

The claim provides that the “textured district” is comprised of “etched trenches having a sloped etching profile.” Col. 8:39-40. The parties agree that “comprising” is an open term, meaning “including but not limited to,” whereas “consisting of” is a closed term, meaning “including and limited to.” See *Vehicular Techs. Corp. v. Titan Wheel Int’l, Inc.*, 212 F.3d 1377, 1382-83 (Fed. Cir. 2000). The patent clearly contemplates that the “etched trenches” have a “sloped etching profile.” The patentee viewed the shape of these trenches as “essential” to guide the lattice defects away from the active layer. Col. 2:33. Thus, opening the claim to encompass embodiments without a “sloped etching profile” would frustrate the purpose of the invention.

Again, relying on Figure 2B and Figure 4B, Lexington argues that the patent claims “textured districts” with flat spaces between surface features. The Court, however, agrees with Amazon that such an embodiment conflicts with the purpose of the invention. A comparison of Figure 2A, which has no space between surface features and Figure 2B, which does, illustrates this:



Whereas the embodiment shown in Figure 2A only leaves enough room between surface features for a single lattice defect to propagate directly upward at a 90 degree angle from the substrate, the spaces between the features shown in Figure 2B leave a proportionately higher amount of space between the features such that defects would propagate directly up at a 90 degree angle. See D. 51 at 8. In this way, Lexington’s proposed construction is antithetical to the purpose of the patent. See, e.g., Col. 1:12-15 (discussing lattice defect reduction). This fact weighs against Lexington’s proposed construction even where Figure 2B is a disclosed embodiment, because “[a]lthough reluctant to exclude an embodiment, this court must not allow the disclosed embodiment to ‘outweigh the language of the claim, especially when the court’s construction is supported by the intrinsic evidence.’” Rolls-Royce, PLC v. United Technologies Corp., 603 F.3d 1325, 1334-35 (Fed. Cir. 2010) (quoting TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1373 (Fed. Cir. 2008)); see also Ascion, LLC v. Ruoey Lung Enter. Corp., No. 09-10293-GAO, 2010 WL 4183834, at *4 (D. Mass. Oct. 25, 2010) (construing claims in light of purpose of invention over disclosed embodiments, noting that “[n]one of those features [in disclosed embodiments] is necessary to achieve the purpose of the invention”).

In addition, the Court notes that while there is certainly no presumption of “having” being an open or closed term, it is clear that a closed construction is more consistent with the context of the specification and claims. See Crystal Semiconductor Corp. v. Tritech Microelectronics Int’l, 246 F.3d 1336, 1347 (Fed. Cir. 2001) (noting that a construction of “having” depends on context). Accordingly, the Court construes “having” to mean “consisting of,” consistent with Judge Young’s construction of same in Lexington Luminance LLC v. Feit Elec. Co., No. 12-11554-WGY, D. 43 (D. Mass. Jun. 25, 2013) (construing same claim).

3. “Microfacets”

Term	Lexington’s Proposed Construction	Amazon’s Proposed Construction
Microfacets	Very small planes that make up a surface contour	Planar crystal surfaces

The parties apparently agree that a “facet” is a “planar crystal surface” or a “plane surface of a crystal.” D. 50 at 17; D. 51 at 18. The parties dispute, however, whether the addition of “very small” to the construction of microfacets is appropriate. Amazon argues that “very small” adds an unnecessary layer of ambiguity to the claim. D. 51 at 18. The Court disagrees. First, the Court agrees with Lexington that courts have used “qualitative” terms in prior claim constructions. D. 50 at 16 (citing Inpro II Licensing, S.A.R.L. v. TMobile USA, Inc., et al., No. 03-1047 (GMS), 2004 U.S. Dist. LEXIS 29773, at *1 (D. Del. Nov 29, 2004) (construing the term “digital assistant module” as “a small portable computing device”); Southwest Efuel Network, L.L.C. v. Transaction Tracking Technologies, Inc., No. 07-cv-311-TJW, 2009 U.S. Dist. LEXIS 103395, at *40 (E.D. Tex. Oct. 23, 2009) (construing the term “keypad” as “a small hand held keyboard”)). Second, the Court notes that to simply construe “microfacets” to mean “planar crystal surfaces” would be to ignore a descriptive part of the term. The Court declines to do so here, where the claim construction process begins with term’s ordinary meaning. Phillips, 415 F.3d at 1312. Accordingly, the Court construes “microfacets” to mean “very small planar crystal surfaces.”

4. *“Sloped etching profile with a smooth rotation of microfacets”*

Term	Lexington’s Proposed Construction	Amazon’s Proposed Construction
Sloped etching profile with a smooth rotation of microfacets	[No construction required] otherwise, sloped surface contour without sharp corners	when viewed in cross-section, the side and bottom walls of the etched trenches are made up of micro-facets with a gradual, incremental rotation in slope from micro-facet

		to microfacet such that there are no sharp corners
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The proposed constructions indicate the parties’ agreement that the claim’s reference to a “smooth rotation” of microfacets means that there are no sharp corners in the “textured district.” The parties disagree as to whether the “sloped etching profile” refers to a “surface contour” or the “etched trenches.” The Court must construe the claim in light of the specification. Phillips, 415 F.3d at 1315. The specification does not refer to a “surface contour,” but repeatedly refers to “trenches.” See, e.g., Col. 2:24, 2:37, 3:63. The Court therefore finds that Amazon’s proposed construction is more consistent with the specification.

Lexington argues that Amazon’s construction is inconsistent with Figure 2B, because a “flat bottom [as indicated in Figure 2B] cannot be part the sloped etching profile.” D. 50 at 20. As the Court has indicated above, however, a flat bottom is inconsistent with the purpose of the invention. Moreover, the parties have agreed that there are to be no sharp corners. Id. at 17. The Court agrees with Amazon that an absence of sharp corners is inconsistent with flat bottoms of trenches. D. 59 at 15. Even if the Court’s adoption of Amazon’s construction is inconsistent with Figures 2B and 4B, the Court is empowered to exclude a disclosed embodiment when it is required by the claim’s language. Lucent Techs., Inc. v. Gateway, Inc., 525 F.3d 1200, 1215-16 (Fed. Cir. 2008) (concluding that because “the claim language is unambiguous, we have construed the claims to exclude all disclosed embodiments”).²

² As discussed above, there is a “strong presumption” against constructions that excludes disclosed embodiments. In re Katz Interactive Call Processing Patent Litig., 639 F.3d 1303, 1324 (Fed. Cir. 2011); see also C.R. Bard., inc. v. U.S. Surgical Corp., 388 F.3d 858, 865 (Fed. Cir. 2004). Nevertheless, where inconsistent with the specification and claims, the disclosed embodiments must give way. Elektta Instrument S.A. v. O.U.R. Scientific Int’l, Inc., 214 F.3d 1302, 1308 (Fed. Cir. 2000) (excluding disclosed embodiment “in light of the prosecution history and the unambiguous language of the amended claim”).

Lexington also argues that Amazon’s proposed construction is improper because a “sloped etching profile” cannot be a “two-dimensional cross-section.” D. 50 at 18. However, almost all of the figures in the specification show the etching profile from a cross-sectional view, see, e.g., Figs. 1C, 2B, 3C, which is best apt to demonstrate the nature in which the surface features have no sharp corners. Amazon’s construction does not limit the claim to a two-dimensional view; it merely demonstrates how the textured district should look from a side-view. Finally, Amazon’s construction is consistent with the plain and ordinary meaning of profile, that is, the side-view.

Accordingly, the Court construes “sloped etching profile with a smooth rotation of microfacets” to mean “when viewed in cross-section, the side and bottom walls of the etched trenches are made up of micro-facets with a gradual, incremental rotation in slope from micro-facet to microfacet such that there are no sharp corners.”

5. “A sloped etching profile . . . without a prescribed angle of inclination”

Term	Lexington’s Proposed Construction	Amazon’s Proposed Construction
a sloped etching profile . . . without a prescribed angle of inclination	[No construction necessary], otherwise: a sloped surface contour... without a specific angle of inclination	when viewed in cross-section, the side and bottom walls of the etched trenches have no constant angle of inclination, and so they have no linear portions

For the reasons discussed above, the Court adopts Amazon’s construction of “sloped etching profile.” What remains, then, is “without a prescribed angle of inclination.” Lexington argues that “prescribed” must mean specific,” whereas Amazon asks the Court to construe the term to mean “constant.” Consistent with its earlier constructions, the Court looks to the purpose of the invention itself. As discussed above, the patentee was interested in removing sharp corners from the surface of the substrate. Col. 4:27-34. To accomplish this, the profile of the trench must always be curved. As counsel for Amazon noted at oral argument, if the etching profile were not curved, the angle of inclination would be constant – an angle of zero or 180 degrees. Accordingly, the Court agrees with Amazon that “prescribed” should be construed to mean “constant.” Similarly, the Court agrees that a constant angle of inclination necessarily requires there to be “no linear portions” on the “sloped etching profile.” Although Lexington again argues that the “no linear portions” requirement ignores plainly-disclosed embodiments, D. 50 at 23, the Court finds for the same reasons as discussed above that both the claim language itself and the purpose of the invention run counter to the embodiments disclosed in Figures 2B and 4B.

Accordingly, the Court construes “a sloped etching profile . . . without a prescribed angle of inclination” to mean “when viewed in cross-section, the side and bottom walls of the etched trenches have no constant angle of inclination, and so they have no linear portions.”

6. “So as to guide the extended lattice defects away from propagating into the active layer”

Term	Lexington’s Proposed Construction	Amazon’s Proposed Construction
so as to guide the extended lattice defects away from propagating into the active layer	[No construction required] otherwise, such that free propagation of extended lattice defects into the active layer is significantly reduced relative to a device made by the same process without the textured districts	The term “the extended lattice defects” is indefinite. No construction is required for the remainder of this term.

a) Amazon Argues that Claim 1 of the ‘851 Patent Is Indefinite

Amazon argues that claim 1 of the ‘851 patent is invalid because it is indefinite. D. 49-1 at 9. Amazon argues that “. . . so as to guide the extended lattice defects away from propagating into the active layer” is indefinite because it does not explain to which “extended lattice defects” the claim refers. *Id.* at 11.

As an initial matter, the Court must evaluate whether these issues are appropriately decided on the pleadings. “A determination of claim indefiniteness is a legal conclusion that is drawn from the court’s performance of its duty as the construer of patent claims. . . . Indefiniteness, therefore, like claim construction, is a question of law.” *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1378 (Fed. Cir. 1999) (citing *Personalized Media Communications, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 705 (Fed. Cir. 1998)). In general, however, the issue of indefiniteness is decided on a motion for summary judgment. *See, e.g., Baker Hughes, Inc., v. Davis-Lynch, Inc.*, 31 Fed. App’x 650, 651 (Fed. Cir. 2002) (affirming

district court’s grant of partial summary judgment on issue of indefiniteness). That is because a court evaluating whether a claim is indefinite must often construe the claim prior to determining whether the claim is indefinite. See Enzo Biochem, Inc. v. Appellera Corp., 599 F.3d 1325, 1332-36 (Fed. Cir. 2010) (evaluating indefiniteness in part based upon district court’s claim constructions). Many courts, however, do not rely on their claim constructions in determining whether a claim is sufficiently definite. See Verve, LLC v. Crane Cams, Inc., 311 F.3d 1116, 1119-20 (Fed. Cir. 2002) (determining that the word “substantially” did not render claim indefinite where the district court did not construe the term). Moreover where, as here, however, the sections of the claim in dispute have already been construed as a matter of law, disposition of the issues raised by Amazon are appropriate for a motion for judgment on the pleadings. See Curran, 509 F.3d at 45 (affirming district court’s entry of judgment on the pleadings where the court only needed to decide issues of law).

b) The Word “The” Without Any Further Explanation Does Not Render the Claim Indefinite

Amazon argues that the ‘851 patent’s requirement that the “lower portions” “guide the extended lattice defects away from the active layer” is indefinite because it fails to specify which lattice defects to which the claim refers. D. 49-1 at 6 (emphasis in original) (internal quotation marks omitted). As put by Amazon:

[W]hat did the patentee mean when he referred to guiding “the extended lattice defects?” Did he mean that his invention would guide **all** extended lattice defects away from the active layer? Or, by using the plural “defects,” that the invention would simply guide **more than one** extended lattice defect? Or was it that the invention would guide **some other, indeterminate number** of lattice defects away from the active layer?

Id. (emphasis in original).

Amazon fails to meet its burden of proving invalidity as to this argument by clear and convincing evidence. Amazon’s argument might be persuasive if the Court read the claim in

isolation. However, “resolution of any ambiguity arising from the claims and specification may be aided by extrinsic evidence of usage and meaning of a term in the context of the invention.” Verve, 311 F.3d at 1119. Despite Amazon’s protestations to the contrary, it is clear that the goal of the invention is to “reduce” the number of lattice defects. Col. 1:12-15; Col. 1:48; Col. 1:55; Col. 1:63; Col. 2:9; Col. 2:22; Col. 2:36; Col. 3:46; Col. 5:11; Col. 5:19; Col. 5:37 (all references to lattice defect reduction). Accordingly, “guid[ing] the extended lattice defects away from the active layer” therefore means to reduce their manifestation in the active layer.

In a parallel litigation before another judge in this district, the court construed many of the terms at issue here, including “so as to guide the extended lattice defects away from propagating into the active layer.” See Feit Elec. Co., Inc., 12-11554-WGY, D. 43 (construing same claim). In that case, Judge Young construed this term in a manner consistent with Lexington’s proposed construction. Id. That court’s constructions consistently endorsed the notion that the goal of the invention was to reduce or “minimiz[e]” lattice defects. Feit Elec. Co., Inc., No. 12-11554-WGY, D. 50 at 24 (transcript of Markman hearing in which the court proposed a construction “‘that serves the purpose of minimizing the propagation of lattice defects into the active layer.’ I mean, that’s the goal [of the invention]”).

Amazon argues that the claim has multiple possible meanings, analogizing this case to Honeywell Int’l, Inc. v. Int’l Trade Comm’n, 341 F.3d 1332 (Fed. Cir. 2003), in which the Federal Circuit found a claim indefinite where “melting point elevation” could be measured in four different ways and each method yielded a different result. D. 49-1 at 11 (citing Honeywell, 341 F.3d at 1341). This is not such a case. Although Amazon argues that the patent fails to specify which lattice defects are guided away from the layer, the invention teaches here that guiding the defects away from the active layer simply means that they are reducing them as

much as possible, or as put by Judge Young, “minimizing” them. Col. 2:22; Feit Elec. Co., Inc., No. 12-11554-WGY, D. 50 at 24. There is clearly only one definition, unlike in Honeywell, and the fact that the patent does not specify exactly how many defects will be reduced does not doom the claim as indefinite. Kinetic Concepts, Inc. v. Blue Sky Medical Group., Inc., 554 F.3d 1010, 1022 (Fed. Cir. 2009) (concluding that “reduction . . . by at least 50%” is not indefinite).

c) The Court adopts Feit Elec. Co., Inc.’s construction of the term

Accordingly, for the foregoing reasons, the Court adopts the construction of this term in Feit Elec. Co. Inc., No. 12-11554-WGY, D. 43, and construes the claim to mean “such that free propagation of extended lattice defects into the active layer is significantly reduced relative to a device made by the same process without the textured districts.”

7. *“Said Substrate Is Selected from the Group Comprising”*

Term	Lexington’s Proposed Construction	Amazon’s Proposed Construction
said substrate is selected from the group comprising	[No construction required] otherwise, said substrate is selected from one or more of the following groups	said substrate is selected from the group that includes but is not limited to

Amazon asserts that the claim language “said substrate is selected from the group comprising group III-V, group IV, group II-VI elements and alloys, ZnO, spinel and sapphire” is indefinite because it allows for an unlimited amount of alternative embodiments. In other words, Amazon alleges that the group amounts to a Markush group that was incorrectly drafted. D. 49-1 at 15-21.

a) The Group of Elements from Which Those Practicing the Patent May Draw for the Claimed Substrate is a Markush Group

A Markush group derives its name from a nearly ninety year-old patent application. See Ex parte Markush, 1925 CD 126 (Com. Pat. 1924). Such a group is “a listing of specified alternatives of a group in a patent claim,” with members of the claimed group being functionally equivalent for purposes of claim validity. Abbott Labs. v. Baxter Pharm. Prods., Inc., 334 F.3d 1274, 1280 (Fed. Cir. 2003). Put another way, a Markush group provides for alternate embodiments of the claimed invention. See In re Harnisch, 631 F.2d 716, 720 (C.C.P.A. 1980). “A Markush group is . . . typically expressed in the form: a member selected from the group consisting of A, B, and C.” Maxma v. ConocoPhillips, Inc., No. 03-421, 2005 WL 1690611, at *5 (E.D. Tex. July 19, 2005) (citing Abbott Labs., 334 F.3d at 1280). In other words, the group includes and is limited to A, B and C. Thus, in the example discussed in Maxma, the embodiments would be limited to A; B; C; A and B; A and C; B and C; or A, B and C.

Here, the patent claims a substrate where “said substrate is selected from the group comprising group III-V, group IV, group II-VI elements and alloys, ZnO, spinel and sapphire.” Col. 8:46-49. The parties have stipulated and the Court takes judicial notice of the fact that groups III-V, IV and II-VI elements and alloys refer to a closed list of certain elements and combinations (i.e., alloys) of elements on the periodic table. D. 54 at 9; see also Encyclopedia Britannica Online, Periodic Table of Elements, <http://www.britannica.com/nobelprize/art-91> (last visited Oct. 10, 2013). Thus, it follows that the substrate could be made of any number of these elements and alloys, but can also include any other element or alloy. This is the very essence of a patent claiming alternate embodiments.

Lexington argues that Accenture v. Global Services GmbH v. Guidewire Software, Inc., No. 07-826, 2010 WL 883019 (D. Del. Mar. 5, 2010) compels the outcome of this case. D. 54 at 8. In Accenture, the court construed claim language in U.S. Patent No. 7,013,284, in which the

patentee claimed a computer program that organized information related to an insurance transaction into four levels. U.S. Patent No. 7,013,284, Col. 107:28-33 (claiming “an insurance transaction database . . . comprising a claim folder containing the information related to the insurance transaction decomposed into a plurality of levels from the group comprising a policy level, a claim level, a participant level and a line level”). In clarifying its construction of this claim, the court noted that it “rejected Guidewire’s argument that the four levels specified in the ‘284 patent constitute a Markush group” because “[t]he four levels set forth in the ‘284 patent are not functionally equivalent alternatives. Instead, each serves a different function in handling the claim, and each must be present.” Accenture Global Servs., GmbH v. Guidewire Software, Inc., 800 F. Supp. 2d 613, 623 (D. Del. 2011), aff’d, 728 F.3d 1336 (Fed. Cir. 2013), reh’g en banc denied (Dec. 12, 2013). Unlike the ‘284 patent at issue in Accenture, the invention claimed by the ‘851 patent are described as functionally equivalent alternatives. Thus, claim 1 of the ‘851 patent includes a Markush group.

- b) By Using the Word “Comprising,” the ‘851 Patent Claims an Infinite Number of Possibilities for the Nature of the Substrate, Rendering the Claim Indefinite

Amazon posits that use of the word “comprising” rather than “consisting” provides for a substrate selected from a group that has no limits. D. 49-1 at 15-16. “A Markush group by its nature is closed. If an applicant tries to claim a Markush group without the word ‘consisting,’ the PTO will insist upon the addition of this word to ensure a closed meaning.” Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1372 (Fed. Cir. 2005). If a Markush group uses the term “comprising” rather than “consisting of,” it is not closed. Abbott Labs., 334 F.3d at 1280-81 (quoting Stephen A. Becker, Patent Applications Handbook § 2:17 (9th ed. 2000)). This is because “‘comprising’ is a “term of art used in claim language which means that the named

elements are essential, but other elements may be added and still form a construct within the scope of the claim.” Sevenson Env'tl. Servs., Inc. v. United States, 76 Fed. Cl. 51, 74 (Fed. Cl. 2007) (quoting Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997) (internal quotation marks omitted)). In other words, “‘comprising’ is well understood to mean ‘including, but not limited to.’” CIAS, Inc. v. Alliance Gaming Corp., 504 F.3d 1356, 1360 (Fed. Cir. 2007) (citation omitted).

To illustrate the difference between a group “comprising” certain elements and a group “consisting of” certain elements, the Court returns to the example cited in Maxma, 2005 WL 1690611, at *5. Whereas a Markush group expressed in the form “a member selected from the group consisting of A, B and C,” id., would be limited to A; B; C; A and B; A and C; B and C; or A, B and C, a Markush group comprising A, B and C would include any one of the aforementioned embodiments, but would not be limited to them such that it could include an infinite number of alternative embodiments.

Here, claim 1 of the ‘851 patent provides that the “substrate is selected from the group comprising group III-V, group IV, group II-VI elements and alloys, ZnO, spinel and sapphire.” Col. 8:46-49. Using the Federal Circuit’s definition of “comprising,” this means that the substrate may include the enumerated elements or alloys, but may also include an indeterminate number of other elements or alloys. The Manual of Patent Examining Procedure (“MPEP”) recognizes that “a Markush group may be so expansive that persons skilled in the art cannot determine the metes and bounds of the claimed invention.” MPEP § 2173.05(h).³ That is exactly the case here, where the claim fails to narrow down the composition of the claimed

³ While the MPEP does not have the force of law, it is entitled to judicial notice as an official interpretation of statutes or regulations as long as it is not in conflict therewith. Molins PLC v. Textron, Inc., 48 F.3d 1172, 1180 n.10 (Fed. Cir. 1995) (citation omitted).

substrate to any degree of substantial certainty. It is therefore indefinite. See Halliburton Energy Servs., Inc., 514 F.3d at 1253 (finding claim indefinite and noting that “[w]hile patentees are allowed to claim their inventions broadly, they must do so in a way that distinctly identifies the boundaries of their claims”).

Lexington argues that the proper way to interpret the claim is to say that the substrate must include one of the enumerated elements or alloys but may include others. D. 54 at 9-10. Even if true, the claim would still envision an infinite number of combinations from which the substrate can be derived, because it uses the word “comprising.” Indeed, in the Accenture case that Lexington cites, the court acknowledged that had it found that “the four levels specified in the ‘284 patent constitute a Markush group,” “the use of the term ‘comprising’ [would] automatically lead to indefiniteness.” Accenture, 800 F. Supp. 2d at 623; see also Severson, 76 Fed. Cl. at 74 (noting that “[b]y proposing the word ‘comprising,’ Severson improperly broadens the scope of each Markush group by converting it to an open group where other members could be added. Such a construction would contradict the established law relating to Markush groups”).

Lexington relies on the district court opinion in Gillette, where another judge in this district noted that “comprising is not a weasel word with which to abrogate all claim limitations.” Gillette Co. v. Energizer Holdings, Inc., No. 03-11514-PBS, 2004 WL 3366162, at *5 (D. Mass. Jan. 15, 2004) (citation omitted). However, that ruling was vacated on appeal, with the Federal Circuit applying the term’s “open” usage and determining that a claim describing “comprising a group of first, second, and third blades” encompassed more than only three-bladed razors. Gillette, 405 F.3d at 1371 (vacating district court’s denial of preliminary injunction). Moreover, because the district court’s findings at the preliminary injunction stage addressed only the

plaintiff's likelihood of success on infringement, the Federal Circuit remanded the matter to the district court to consider the defendant's invalidity defenses. Id. at 1375. Accordingly, the neither court addressed whether the claim in the patent at issue was indefinite and therefore Gillette is inapposite.

For all these reasons, since the claim fails to narrow the composition of the substrate to any degree of substantial certainty, claim 1 of the '851 patent is indefinite.

V. Conclusion

For the foregoing reasons, the Court ALLOWS Amazon's motion for judgment on the pleadings, D. 49. Judgment shall enter on Amazon's counterclaim for a declaration of invalidity in its favor and Lexington's complaint shall be DISMISSED.⁴

So Ordered.

/s/ Denise J. Casper
United States District Judge

⁴ Where a patent is deemed invalid, judgment must enter against the patentee. Aspex Eyewear, Inc. v. Altair Eyewear, Inc., 818 F. Supp. 2d 348, 365 (D. Mass. 2011) (entering judgment in favor of defendant upon determination that patent was invalid).