

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

ADVANCED DISPLAY TECHNOLOGIES	§	
OF TEXAS, LLC.	§	
Plaintiff,	§	
	§	
vs.	§	CASE NO. 6:11-CV-011
	§	PATENT CASE
	§	
AU OPTRONICS CORP., ET AL	§	
Defendants.	§	

ADVANCED DISPLAY TECHNOLOGIES	§	
OF TEXAS, LLC.	§	
Plaintiff,	§	
	§	
vs.	§	CASE NO. 6:11-CV-391
	§	PATENT CASE
	§	
DELL, INC., ET AL	§	
Defendants.	§	

MEMORANDUM OPINION AND ORDER

This Memorandum Opinion construes the terms in U.S. Patent Nos. 5,739,931 (“the ‘931 patent) and 6,261,664 (“the ‘664 patent”) (together, the “Patents-in-Suit”). The Court also **GRANTS** Defendants’ Motion for Summary Judgment that Claim 1 of U.S. Patent No. 6,261,664 is Invalid Under 35 U.S.C. § 112 ¶ 2 (Doc. No. 165, “SJ MTN”).

BACKGROUND

Advanced Display Technologies of Texas, LLC (“ADT”) asserts the ‘931 and ‘664 patents against a number of defendants across two cases. In the interest in efficiency the Court held a consolidated *Markman* hearing in both cases. *See* 6:11cv011, Doc. No. 220; 6:11cv391, Doc. No. 190.

The following Defendants are named in case number 6:11cv011: AU Optronics Corporation, AU Optronics Corporation America, Apple, Inc., ASUS Computer International, ASUSTek Computer, Inc., Haier America Trading, LLC, Haier Group Corporation, Research in Motion Corporation, Research in Motion Limited, Sharp Corporation, Sharp Electronics Corporation, ViewSonic Corporation, and Vizio, Inc. (collectively “‘011 Defendants”).¹

The following Defendants are named in case number 6:11cv391: Dell, Inc., Futurewei Technologies, Inc. d/b/a Huawei Technologies (USA), HTC Corporation, Lenovo, Inc., Motorola Mobility Holdings, Inc., Philips Electronics North America Corporation, Sanyo North America Corporation, Sony Corporation of America, Sony Ericsson Mobile Communications (USA), Inc., Sony Ericsson Mobile Communications AB, and Toshiba America Information Systems, Inc. (collectively “‘391 Defendants”).²

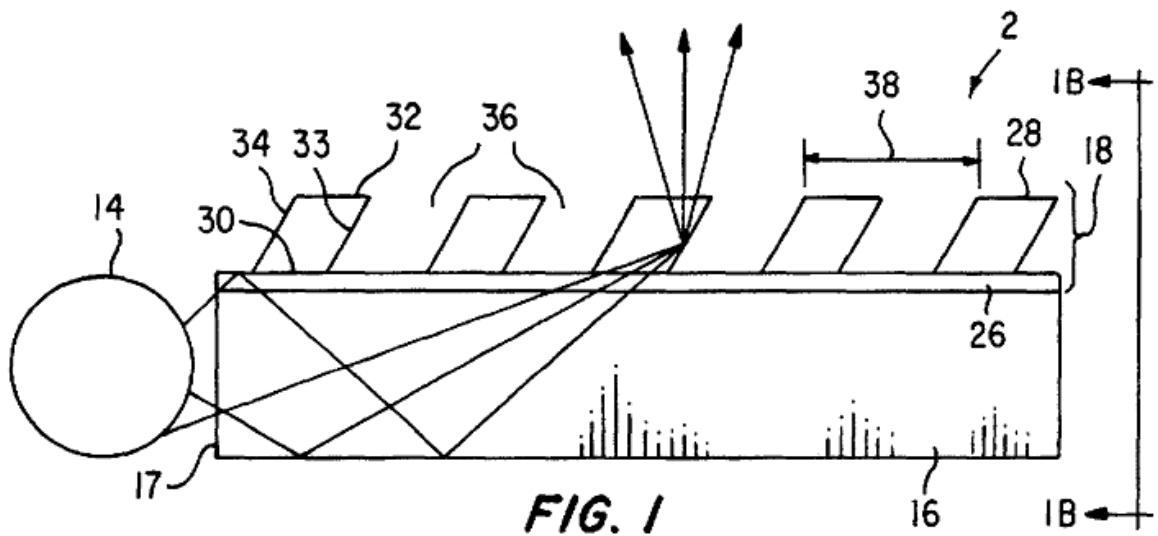
The use of “Defendants” throughout this Order refers to all remaining defendants across both the ‘011 and ‘391 cases.

¹ ViewSonic Corporation, Haier American Trading, LLC, Haier Group Corporation, Sharp Corporation, and Sharp Electronics Corporation were dismissed prior to the *Markman* hearing.

² HTC Corporation, Motorola Mobility Holdings, Inc., Sony Ericsson Mobile Communications AB were dismissed prior to the *Markman* hearing.

The '931 Patent

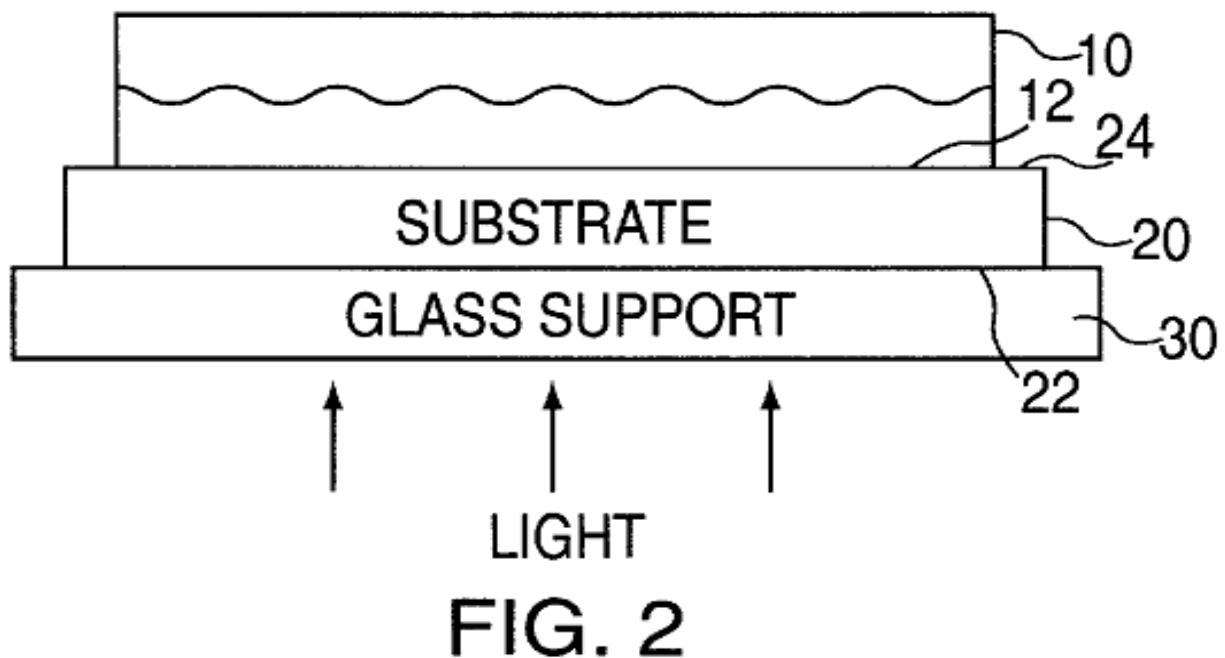
The '931 patent is directed to an "optical illumination system" that preferably consists of a light transmitting means that receives diffuse light from a light source and transmits the light via "total internal reflection." '931 patent at ABSTRACT; *id.* at 1:60-67. In a preferred embodiment, the light transmitting means is in contact with a series of "microprisms" which capture and redirect the diffuse light which emerges from the microprisms as a "spatially directed light source." *Id.* at 1:60-2:14. The invention is described as directed to any application that requires "a low profile spatially directed light source." *Id.* at 1:44-46; 2:55-3:9. A preferred embodiment is depicted in Figure 1 of the patent:



In the above figure, the diffuse light source is depicted as item 14, the light transmitting means as 16, and an array of microprisms is depicted by 28. *Id.* at 3:64-4:15.

The '664 Patent

The '664 patent is directed to an optical diffuser that can be made from a photopolymerizable process. '664 patent at 2:62-66. The process involves directing substantially collimated light through a substrate of transparent or translucent material into a film of photopolymerizable material. *Id.* The photopolymerizable material is exposed to the collimated light long enough to polymerize a portion of the material. *Id.* at 3:10-12. Thereafter, the non-polymerized portion is removed and the remaining structure can be used as a diffuser or to create a replica for embossing another material to create a diffuser. *Id.* at 3:12-17. The process is depicted in Figure 2 of the patent:



The collimated light is directed through the optional glass support 30, through the bottom surface of the substrate 20, and through the photopolymerizable layer 10. *Id.* at 5:3-5. The collimated light is removed prior to the entire thickness of the photopolymerizable layer 10 has

had an opportunity to polymerize (cross-link). *Id.* at 5:25–29. Thereafter, the unpolymerized portion is removed. *Id.* at 5:50–51.

APPLICABLE LAW

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). In claim construction, courts examine the patent’s intrinsic evidence to define the patented invention’s scope. *See id.*; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). This intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term’s context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can also aid in determining the claim’s meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term’s meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). “[T]he 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.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor’s lexicography governs. *Id.* Also, the specification may resolve ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc.*, 299 F.3d at 1325. But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323. The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc., v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent.”).

Although extrinsic evidence can be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court

understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition is entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

The patents-in-suit also contain means-plus-function limitations that require construction. Where a claim limitation is expressed in “means plus function” language and does not recite definite structure in support of its function, the limitation is subject to 35 U.S.C. § 112, ¶ 6. *Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). In relevant part, 35 U.S.C. § 112, ¶ 6 mandates that “such a claim limitation ‘be construed to cover the corresponding structure . . . described in the specification and equivalents thereof.’” *Id.* (citing 35 U.S.C. § 112, ¶ 6). Accordingly, when faced with means-plus-function limitations, courts “must turn to the written description of the patent to find the structure that corresponds to the means recited in the [limitations].” *Id.*

Construing a means-plus-function limitation involves multiple inquiries. “The first step in construing [a means-plus-function] limitation is a determination of the function of the means-plus-function limitation.” *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). Once a court has determined the limitation’s function, “the next step is to determine the corresponding structure disclosed in the specification and equivalents thereof.” *Id.* A “structure disclosed in the specification is ‘corresponding’ structure only if the specification or

prosecution history clearly links or associates that structure to the function recited in the claim.”

Id. Moreover, the focus of the “corresponding structure” inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is “clearly linked or associated with the [recited] function.” *Id.*

Summary Judgment Standard

Summary judgment is appropriate when the record, as a whole, together with the affidavits, if any, show that there is no genuine issue as to any material fact, and the moving party is entitled to judgment as a matter of law. FED. R. CIV. P. 56(c); *Celotex Corp. v. Catrett*, 477 U.S. 317, 323–25 (1986). A fact is material if it might affect the outcome of the suit under the governing law. *Merritt-Campbell, Inc. v. RxP Prods., Inc.*, 164 F.3d 957, 961 (5th Cir. 1999). A “genuine issue” of material fact exists when a fact requires resolution by the trier of fact. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248–49 (1986). When ruling on a motion for summary judgment, the Court is required to view all justifiable inferences drawn from the factual record in the light most favorable to the nonmoving party. *Matsushita Elec. Indus. Co., Ltd v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986); *Adickes v. S.H. Kress & Co.*, 398 U.S. 144, 158-59 (1970); *Merritt-Campbell, Inc.*, 164 F.3d at 961.

Indefiniteness

A claim is invalid as indefinite under 35 U.S.C. § 112, ¶ 2 if it fails to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. The party seeking to invalidate a claim as indefinite must show by clear and convincing evidence that one skilled in the art would not understand the scope of the claim when read in light of the specification. *Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308, 1319 (Fed. Cir. 2003). The test for indefiniteness is stringent—a claim is invalid

as indefinite if it is not “amenable to construction.” *Exxon Research & Eng’g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001). The definiteness requirement of § 112, ¶ 2 “focuses on whether the claims, as interpreted in view of the written description, adequately perform their function of notifying the public of the [scope of the] patentee’s right to exclude.” *S3 Inc. v. nVIDIA Corp.*, 259 F.3d 1364, 1371–72 (Fed. Cir. 2001) (citing *Solomon*, 216 F.3d at 1379). Section 112, ¶ 2 also requires “that the claims be amenable to construction, however difficult that task may be.” *Exxon Research*, 265 F.3d at 1375. Because a claim is presumed valid, a claim is indefinite only if the “claim is insolubly ambiguous, and no narrowing construction can properly be adopted.” *Id.*; see also *Honeywell Int’l, Inc. v. Int’l Trade Comm’n*, 341 F.3d 1332, 1338-39 (Fed. Cir. 2003).

CLAIM TERMS

The ‘931 Patent

“a light transmitting means”

ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
<u>Function</u> : transmitting light via reflection	<u>Function</u> : transmitting light via reflection	<u>Function</u> : transmitting light via reflection
<u>Structure</u> : a light pipe, light wedge or waveguide, and any equivalents of that structure;	<u>Structure</u> : a light pipe, light wedge or waveguide, and any equivalents of that structure;	<u>Structure</u> : a light pipe, light wedge or waveguide;

“having means for accepting light”

ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
<u>Function</u> : accepting light from a light source	<u>Function</u> : accepting light from a light source	<u>Function</u> : accepting light from a light source
<u>Structure</u> : light accepting surface 17 or 17a, and any equivalents of that structure	<u>Structure</u> : light accepting surface 17 or 17a, and any equivalents of that structure	<u>Structure</u> : light accepting surface 17 or 17a;

The parties have the same dispute regarding “a light transmitting means” and “having means for accepting light.” ADT and the ‘011 Defendants agree that the proper constructions of both phrases should include “and any equivalents of that structure.” *See* 611cv011, Doc. No. 194, “PL. BRIEF” at 1–2. The ‘391 Defendants disagree, and contend that adding such language is both confusing and unnecessary. *See* 6:11cv391, Doc. No. 172, “‘391 DEF. RESP.” at 28–29.

The law explicitly states that means-plus-function claims “shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” 35 U.S.C. § 112 (2006). As such, ADT and the ‘011 Defendants’ proposed constructions are consistent with controlling law regarding mean-plus-function claim limitations. *See Mediatek, Inc. v. Sanyo Elec. Co.*, 513 F. Supp. 2d 778, 789 (E.D. Tex. 2007).

Accordingly, the Court adopts ADT and the ‘011 Defendants’ proposed constructions and construes: (1) “a light transmitting means” as “transmitting light via reflection” with the corresponding structure being “a light pipe, light wedge or waveguide, and any equivalents of that structure;” and (2) “having means for accepting light” as “accepting light from a light source” with the corresponding structure being “light accepting surface 17 or 17a, and any equivalents of that structure.”

“microprism”

ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
small optical material consisting of no less than two surfaces that are at an angle relative to each other so as to reflect or refract light	a small prism having a light input surface parallel to a light output surface	a small prism having a light input surface parallel to a light output surface

Based on the parties' proposed constructions, it appears that they agree that "micro" should be construed as "small." The crux of the parties' dispute is the proper meaning of "prism." ADT contends that prism (or microprism) is used in the claims according to its ordinary and customary meaning; therefore, it should be afforded such a construction. PL. BRIEF 3–4. As such, ADT proposes a dictionary definition that it deems embodies the ordinary meaning of "prism."

Defendants argue that their proposed construction is grounded in the intrinsic record. *See* 611cv011, Doc. No. 204, "'011 DEF. RESP." at 15–17. Defendants contend that the entire specification is drawn toward an invention that utilizes microprisms with a light input surface and light output surface configured parallel to one another. *Id.* Defendants also look to the prosecution history of U.S. Patent No. 6,129,439 ("the '439 patent"), which shares a common ancestor with the '931, where ADT allegedly avoided an obviousness rejection by arguing that "prism" must have parallel congruent polygons as bases. *Id.* at 17.

Defendants seek to limit "microprism" to having a light input surface parallel to a light output surface. '011 DEF. RESP. at 15–17. Should the Court adopt Defendants' proposed construction, it would effectively read a limitation of one claim into another and render a dependent claim superfluous. Independent Claim 7 identifies a microprism "comprising" a light input surface, light output surface, and at least one sidewall. '931 patent at 9:30–10:6. Claim 11, which depends from Claim 7, explicitly claims a configuration of the microprism "wherein said output surface is parallel to said input surface." *Id.* at 10:15–17. Other claims of the '931 patent broadly disclose microprisms without restricting the input and output surface to being parallel. *See e.g.*, '931 patent at 8:54–68. As such, the Court cannot read the explicit limitation of parallel surfaces into the other claims. *See Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314

F.3d 1313, 1326 (Fed. Cir. 2003) (“Our court has made clear that when a patent claim does not contain a certain limitation and another does, that limitation cannot be read into the former claim”).

Defendants’ proposal also requires improperly importing specific embodiments from the specification into the claims. *See e.g.*, ‘931 patent at 1:60–2:5 (“In one preferred embodiment . . . [t]he microprism comprises a light input surface in contact with the waveguide and a light output surface distal to and parallel with the light input surface.”). Again, as the claims demonstrate, the patentee explicitly claimed such an embodiment via Claim 11, yet the other claims fail to limit the claimed microprisms to parallel surfaces. By explicitly modifying the term in one claim, there is a strong implication that the modifying concept is not part of the ordinary meaning of the term. *See Phillips*, 415 F.3d at 1314 (holding that claiming “steel baffles” creates a strong implication that term “baffles” does not include the “steel” modifier).³

ADT’s construction, on the other hand, purportedly captures the ordinary meaning of the term within the context of the claims and specification. PL. BRIEF 3–4. ADT’s construction, however, fails to evaluate the ordinary meaning of the term “microprism” in view of the specification and instead invokes a broad dictionary definition without reference to the context and usage of the term in the specification. *See Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1204 (Fed. Cir. 2002). Instead, the Court must determine the ordinary meaning by “ascertain[ing] possible meanings that would have been attributed to the words of the claims by those skilled in the art, and by further utilizing the intrinsic record to select from those possible meanings the one or ones most consistent with the use of the words by the inventor.” *Id.*

³ Defendants also contend that the patentee disclaimed the full meaning of the term “microprism” during the prosecution of U.S. Patent No. 6,129,439, a related patent that shares a common ancestor with the ‘931 patent. ‘011 DEF. RESP. at 15–17. A review of the ‘439 prosecution does not reveal an unambiguous disclaimer nor does it demonstrate that the patentee attempted to overcome prior art because the art included non-parallel input and output surface. *See* 011 DEF. RESP., Ex. 4 and 5.

The '931 patent is directed to an “optical illumination system.” The system consists of a waveguide and an array of microprisms. '931 patent at ABSTRACT. Optionally, the system may include microlenses. *See* '931 patent at 1:15–22. Accordingly, the subject matter of the '931 patent involves concepts of “optics,” which is a subfield of physics related to the behavior of light. Therefore, in considering the meaning of terminology used in the '931 patent, one of skill would adopt the meanings of terms as found in the field of physics, particularly the subfield of “optics.”

An illustrated “microprism” 28 is described as receiving light through its input surface, which is then reflected off its sidewalls, and exits the microprism as a spatially directed light source. *Id.* at 4:9–15. The specification further describes the illustrated microprism 28 as being “constructed from any transparent solid material.” *Id.* at 4:27–28. Accordingly, the specification indicates that a “microprism” is a body of transparent solid material for reflecting light. In regard to its geometric configuration, the specification describes the preferred microprism as being a six-sided geometrical shape and depicts it as a rhomboid. *See id.* at 5:24–41.

ADT has advanced a dictionary definition in construing the term “prism.” As seen from ADT’s proposed construction, the specification, and the prosecution history, a definition of “prism” is highly contextual. When used in a mathematical context, such as in geometry, the definition of “prism” merely expresses the geometric configuration and relationship of its constituent surfaces. As used in the context of optics, however, the definition of “prism” focuses on its characteristic of being in the form of a transparent solid body and its useful function of reflecting or refracting light.

After a review of a number of dictionary definitions, the specification and prosecution history, one accepted, and fitting definition of the term “prism” in the context of optics is: “a

transparent polygonal solid, which is a three dimensional body formed by intersecting surfaces that are each a closed plane figure bounded by three or more line segments, for reflecting or refracting light.” See <http://www.thefreedictionary.com/prism>. This definition is consistent with the manner in which the term “prism” and hence, “microprism,” is used in the ‘931 patent. As such, the Court construes “microprism” as “a small transparent polygonal solid, which is a three dimensional body formed by intersecting surfaces that are each a closed plane figure bounded by three or more line segments, for reflecting or refracting light.”

“[input surface] for receiving a portion of light transmitting through said light transmitting means”

ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
the outer layer of the microprism that receives a portion of light transmitting through the light transmitting means	the outer surface of the microprism that receives a portion of light transmitting through the light transmitting means	the outer surface of the microprism that receives a portion of light transmitting through the light transmitting means

The only difference between the parties’ proposed constructions is whether “surface” should be redefined as “layer.” ADT contends that the ordinary meaning of “surface,” in context of the ‘931 patent, equates to a “layer.” PL. BRIEF at 7. Defendants counter that the surface need not be redefined and that the term is used without any special meaning throughout the ‘931 specification. ‘011 DEF. RESP. at 8–11.

The ‘931 patent describes the microprisms as having input and output surfaces and never assigns them a meaning contrary to the common understanding of the word “surface.” Given the complexity of this technology, and the lack of any special meaning in the ‘931 specification, there is no need to further confuse the issues, and ultimately the jury, by arbitrarily construing a commonly used term such as “surface.” As such, there is no need to construe “surface,” and the Court adopts the following construction for the phrase “[input surface] for receiving a portion of

light transmitting through said light transmitting means:” “the outer surface of the microprism that receives a portion of light transmitting through the light transmitting means.”

“optically coupled”

ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
<p>in a relationship where the combination of optical components allows light to be transferred between the optical components. Optical components may be optically coupled if there is an intervening optical component.</p>	<p><u>ViewSonic, AUO, VIZIO, ASUS:</u> optically connected without an intervening optical component</p> <p><u>RIM, Apple:</u> No construction necessary;</p> <p>In the alternative: in a relationship where the combination of optical components allows light to be transferred between the optical components.</p>	<p>No construction necessary.</p> <p>In the alternative: in a relationship where the combination of optical components allows light to be transferred between the optical components.</p>

RIM, Apple, and the ‘391 Defendants contend that no construction is necessary and that “optically coupled” should be given its ordinary meaning. ‘011 DEF. RESP. at 25–26. In the alternative, RIM, Apple, and the ‘391 Defendants propose the same construction as ADT, excluding the second sentence of ADT’s construction, which they argue is confusing and unnecessary. *Id.*

Defendants ViewSonic, AUO, VIZIO, and ASUS argue that the ‘931 patent precludes intervening optical components between two “optically coupled” components and propose a construction as such. ‘011 DEF. RESP. at 27–28. ADT disagrees. PL. BRIEF at 9–12.

As an initial matter, because the parties disagree regarding the ordinary meaning of “optically coupled” the Court is required to construe the term. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008). While ADT, RIM, Apple, and the ‘391 Defendants generally agree, at least in some instances, that two optical components may be

optically coupled if there is an intervening optical component (*see* '011 DEF. RESP. at 25–26), AUO, VIZIO, and ASUS wholesale disagree. *See* '011 DEF. RESP. at 27–28. Therefore, the crux of the parties' dispute amounts to whether two optical components may be “optically coupled” despite the presence of an intervening optical component(s) between them.

The '931 specification discloses an embodiment that includes the coupling of microprisms and a light transmitting means, or optical components, despite the presence of an intervening optical component. *See* '931 patent at 5:1–9; Figure 1A. Indeed, Figure 1A of the '931 demonstrates that the array of microprisms is optically coupled to the waveguide, with an “adhesion promoting layer” between them. *See id.* Therefore, a construction that excludes a preferred embodiment would be improper.

AUO, VIZIO, and ASUS contend that the “adhesion promoting layer” is not an “optical component” because “optical components” must change the spatial direction of the light. *See* Docket No. 225, “*MARKMAN* TRANSCRIPT” at 131–132; '011 DEF. RESP. at 27–28. However, the '931 patent does not explicitly limit optical components to components that change the spatial direction of the light, and the “adhesion promoting layer” is specifically referred to as “light transmissive;” therefore, may be reasonably considered an optical component. *See* '931 patent at 5:1–9.

Additionally, AUO, VIZIO, and ASUS's proposed construction would rewrite the ordinary meaning of the term “coupled” to mean “connected.” In other words, the proposed construction would suggest only a direct passage of light between optical components, which is belied by the disclosure of Figure 1A as explained above, and contrary to the ordinary meaning of “coupled.”

Nevertheless, ADT’s proposed construction is cumbersome and may confuse the jury. Accordingly, the Court construes “optically coupled” as “in a relationship where the combination of optical components allows light to be transferred either directly or indirectly between the optical components.”

“sidewall”

ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
a wall forming a side of a microprism	wall forming the side of a microprism between a light input surface and a light output surface	wall forming the side of a microprism between a light input surface and a light output surface

The parties agree that a “sidewall” is “a wall forming a side of a microprism.” Defendants, however, contend that the specification and claims require the side wall to be located “between a light input surface and a light output surface.” Defendants contend that the ‘931 specification and disclosure, citing to the Summary of the Invention, requires that a sidewall be positioned between the light input and output surfaces. ‘011 DEF. RESP. at 12–13. ADT disagrees. PL. BRIEF at 12–14.

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. Differences among the claim terms can also assist in understanding a term’s meaning. *Id.* Claim 1 of the ‘931 patent explicitly requires the “sidewalls” be located between the light input and output surfaces. ‘931 patent at 8:42–50 (“a first pair of sidewalls disposed between said light input surface and said light output surface.”). Claim 3 of the ‘931 patent, however, does not require the sidewall be positioned between the light input and output surfaces. Accordingly, Defendants’ proposal would improperly limit the broader disclosure of Claim 3 without any clear disavowal of claim scope by the patentee. As such, the Court construes “sidewall” as “a wall forming a side of a microprism.”

“[at least one sidewall] positioned for effecting total internal reflection of a portion of light received by said light input surface”

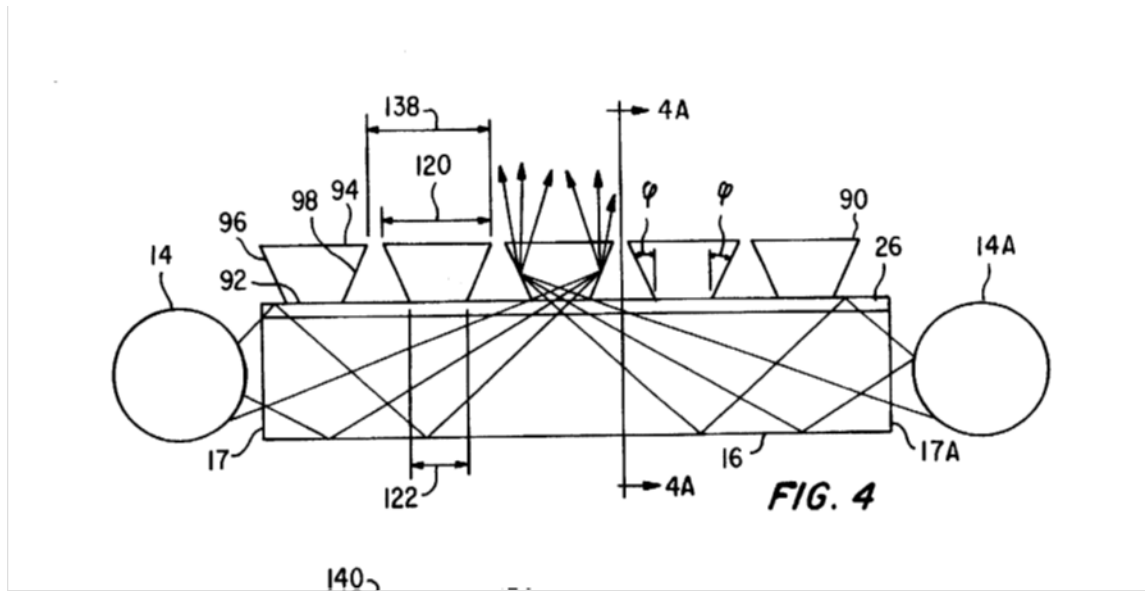
ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
<p>at least one sidewall of the microprism is in a position that causes total internal reflection of a portion (some, but not all) of light received by the light input surface</p>	<p><u>Apple</u>: at least one sidewall is angled to cause total internal reflection of the portion of light received by the light input surface that emerges from the microprism upon striking the “sidewall”</p> <p><u>Other Defendants</u>: at least one sidewall is angled to cause “total internal reflection” of the light that enters the light input surface and strikes that “sidewall”</p>	<p>at least one sidewall is angled to cause “total internal reflection” of the light that enters the light input surface and strikes that “sidewall”</p>

During the *Markman* hearing, ADT essentially agreed, based on Defendants’ presentation, that the difference between the parties’ proposed constructions regarding the “position” or “angle” of the sidewall is irrelevant. *MARKMAN* TRANSCRIPT at 117–118.

The primary dispute between the parties is directed at the meaning of “effecting total internal reflection of a portion of light received by said light input surface.” ADT’s construction only defines the phrase “a portion” as “some, but not all,” and otherwise tracks the claim language. In other words, ADT contends a sidewall should cause total internal reflection of some of the light received by the light input surface.

All Defendants, except Apple, propose a construction that for all intents and purposes construes “a portion” as the actual light that enters the light input surface and strikes a particular sidewall. Apple, on the other hand, proposes a construction that focuses on the “portion of” light that actually “emerges” from the microprism after striking a particular sidewall.

Claim 3 of the '931 patent recites “at least one sidewall having an edge defined by said light input surface and positioned for effecting total internal reflection of a portion of light received by said light input surface.” ‘931 patent at 8:64–67. Turning to the specification, Figure 4 describes an embodiment with two light sources:

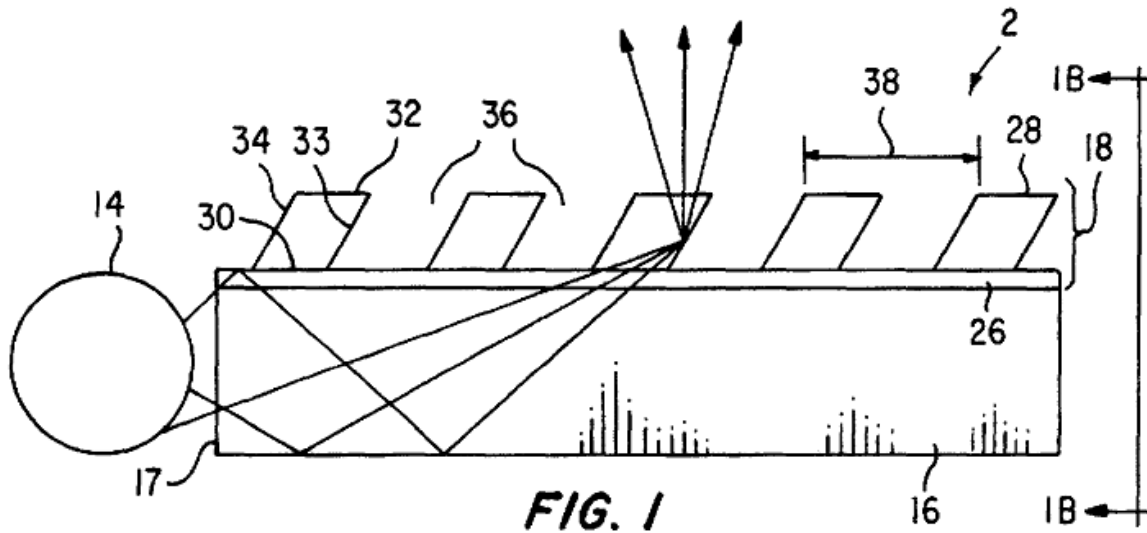


As shown, light from source 14 propagates down waveguide 16 and enters a microprism through its light input surface. The light from source 14 is reflected by one sidewall and exits the light output surface. Further, the reflection is indicated to be by total internal reflection (TIR). See '931 patent at 4:9–15. Similarly, light from source 14A, at the opposite end of waveguide 16, propagates down the waveguide and enters the microprism through the light input surface. The light from source 14A is reflected by the opposite sidewall and exits the light output surface. Again, the reflection is indicated to be by TIR.

As shown, the total light received by the light input surface of the microprism is light received from both source 14 and source 14A. The light received by TIR from each of the “at least one” sidewalls individually, however, is only a “portion” of the total light received by the

light input surface. Accordingly, Claim 3 of the '931 patent reads on the dual light source embodiment of Figure 4.

Another embodiment, having only one light source, is shown in Figure 1:



In this embodiment, light from source 14 propagates down waveguide 16 and enters a microprism through the light input surface. The light is reflected by one sidewall by TIR, and exits through the light output surface. Unlike the two light source embodiment, however, the total amount of light entering the microprism through the light input surface consists of light from single source 14. Accordingly, not just a “portion” of the light received by the input surface is reflected by “at least one” sidewall, all of the received light is reflected. Because all of the received light can be said to also be a “portion” of the received light, Claim 3 also reads on the embodiment disclosed in Figure 1.

ADT contends that the recitation of “a portion of light received by said light input surface” means, for example, in the context of the embodiment of Figure 1, that only some of the light from source 14 that enters the microprism through the input surface must be reflected by

TIR. ADT’s contention, however, is unsupported by the specification. In both embodiments, all of the light entering a microprism is reflected by TIR. Nowhere is there an indication that only some of the light received by the light input surface is reflected by TIR. ADT’s construction is not supported when read in view of the specification.

Defendants contend that the phrase means not all light that enters the microprism through the light input surface must strike a given a sidewall. Defendants’ proposed construction is consistent with both embodiments. Defendants’ construction allows for a dual light source embodiment, wherein only some of the light entering a microprism through the light input surface is reflected by each of the sidewalls. The construction also allows for a single light source embodiment, wherein all of the light that enters the light input surface, which also constitutes “a portion” of entering light, is reflected by only a single sidewall. As such, the Court construes “[at least one sidewall] positioned for effecting total internal reflection of a portion of light received by said light input surface” as “at least one sidewall is angled to cause total internal reflection of the light that enters the light input surface and strikes that sidewall.”

The ‘664 Patent

“polymerized material layer”

ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
a single thickness of material comprised of a substance that is formed by polymerization (such as plastic), and that does not contain any unpolymerized materials	single thickness of material formed by polymerization	single thickness of material formed by polymerization

The parties essentially agree that a “polymerized material layer” is a “single thickness of material formed by polymerization.” ADT contends that it will aid the jury to include an example of a type of material formed by polymerization. PL. BRIEF at 19–21. ADT also argues

that the polymerized material layer may not contain any unpolymerized materials. *Id.* Defendants disagree. ‘011 DEF. RESP. at 30–31.

As an initial matter, there is no need to complicate the construction by adding the parenthetical “such as plastic” in the construction. In fact, the additional language may confuse rather than aid the jury. Second, ADT’s exclusion of any unpolymerized materials reads out an embodiment disclosed in the specification. The ‘664 specification describes a method of producing the “polymerized material layer” without having to remove any unpolymerized material. *See* ‘664 patent at 6:36–7:8. Therefore, the Court construes “polymerized material layer” as a “single thickness of material formed by polymerization.”

“which layer has a highly modulated surface having smooth bumps ranging from about 1 micron to about 20 microns in both height and width”

ADT’s Proposal	‘011 Defendants’ Proposal	‘391 Defendants’ Proposal
<p>a layer whose surface is substantially covered with smooth bumps in the range of 1 micron to 20 microns that have aspect ratios that are [1] sufficient to make the light source uniform and [2] sufficient hide the structural features of the individual patterned light source so that the features or patterns of the light source are not evidence, and that are smooth enough to diffuse light in a forward, used direction, so as to [1] minimize optical backscatter and to [2] increase optical efficiency</p> <p>“highly modulated:” a surface substantially covered with smooth bumps that have</p>	<p><u>AUO, Vizio, ASUS:</u></p> <p>Indefinite;</p> <p>In the alternative: the polymerized layer has a surface of smooth bumps that are adjusted proportionately enough to diffuse light without exposure to the air and have a height and width within about 1 micron and 20 microns</p> <p><u>RIM:</u></p> <p>Indefinite;</p> <p>In the alternative: the layer has a surface formed to include many smooth bumps with heights and widths between about 1 and about 20 microns; for example, the surface 42</p>	<p>Indefinite</p> <p>In the alternative: the layer has a surface formed to include many smooth bumps with heights and widths between about 1 and about 20 microns; for example, the surface 42 shown in Figure 3</p>

<p>aspect ratios (<i>i.e.</i>, the ratio of height to width) that are [1] sufficient to make the light source uniform and [2] sufficient to hide the structural features of the individual patterned light source so that the features or patterns are not evidence in the image</p> <p>“smooth bumps:” bumps having surfaces that are smooth enough to diffuse light in a forward, used direction, so as to [1] minimize optical backscatter and to [2] increase optical efficiency</p>	<p>shown in Figure 3</p> <p><u>Apple:</u></p> <p>Indefinite;</p> <p>In the alternative: the polymerized material layer has a surface formed of smooth bumps that exhibit high aspect ratios and have a height and width within about 1 and about 20 microns</p>	
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Defendants contend that Claim 1 of the ‘664 patent is indefinite under 35 U.S.C. § 112 ¶ 2 because the claim uses two terms of degree, “highly modulated” and “smooth bumps,” which lack any objective anchor against which one of skill in the art can compare a potentially infringing product to determine whether it meets the limitations of Claim 1. *See generally* SJ MTN. ADT disagrees and contends that terms of degree may be construed to mean the degree necessary to serve the inventor’s purpose as disclosed in the intrinsic record. Docket No. 176 (“SJ OPP.”) at 5.

Highly Modulated

“When a word of degree is used, the district court must determine whether the patent’s specification provides some standard for measuring that degree.” *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1351 (Fed. Cir. 2005). Claim 1 of the ‘664 recites:

1. An optical diffuser comprising a polymerized material layer on a transparent or translucent substrate, which layer has a **highly modulated** surface having smooth bumps ranging from about 1 micron to about 20 microns in both height and width.

Defendants contend that the neither the claim language, nor the specification, offer a clue as to the difference between a “highly modulated” and “modulated” surface. SJ MTN at 1–4. ADT, on the other hand, contends that the specification provides guidance by way of describing the “inventor’s purposes” for using a “highly modulated” surface. SJ OPP. at 5.

The ‘664 specification includes a section entitled “highly modulated surface,” where the surface 42, of the photocrosslinked component 40, is described as highly modulated by way of exhibiting smooth bumps from about 1 micron to about 20 microns in both height and width. ‘664 Patent at 5:65–6:35. In other words, the specification merely repeats the language of Claim 1. The specification further describes the “aspect ratios, i.e., the ratios of the heights to the widths, of the bumps on the highly modulated surface 42 . . . [as] quite high.” *Id.* Next, the specification describes how to make the highly modulated surface. *Id.* Last, the specification discloses that the “photopolymerized component 40” may be used in a number of ways, including using the component as a light diffuser for either a projection viewing screen or a liquid crystal display (LCD) illumination system to hide the system’s structural features. *Id.* The highly modulated surface is shown in Figure 3:

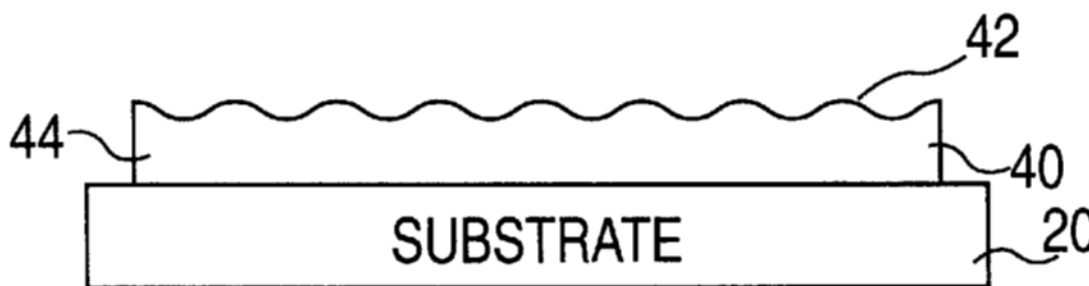


FIG. 3

In sum, viewing the '664 patent as a whole, the “highly modulated surface” is described as composed of smooth bumps from about 1 micron to 20 microns in both height and width, where the aspect ratios of the bumps are “quite high.” ‘664 patent at 5:65–6:35. Additionally, the component with the highly modulated surface may be used to hide an illumination system’s structural features. *Id.*

The ‘664 patent, however, fails to provide a standard for measuring the difference between a mere modulated surface and a *highly* modulated surface. In fact, the patent provides conflicting descriptions of the kinds of bumps that comprise a highly modulated surface. The text of the specification requires the “bumps” on the surface be taller than they are wide (‘664 patent at 5:65–6:35); yet the accompanying Figure 3 depicts bumps that are wider than they are tall. As such, the patent fails to provide a person of ordinary skill in the art an objective anchor against which a potentially infringing product may be compared to determine whether the product meets the highly modulated limitation of Claim 1.

ADT contends that the claim itself describes *how* the surface is modulated, *i.e.*, with smooth bumps ranging from about 1 micron to about 20 microns. SJ OPP. at 4. ADT further argues that the ordinary meaning of “modulated” informs a person of ordinary skill in the art that the surface is “substantially covered with smooth bumps.” *Id.* Even accepting both of these contentions as true, there is no guidance in the intrinsic record to determine what comprises a *highly* modulated surface compared with a mere modulated surface.

In an effort to fill the gap, ADT relies on an expert declaration and *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 450 (Fed. Cir. 1986), to argue that terms of degree may be construed “to mean the degree necessary to serve the inventor’s purposes.” SJ OPP. at 4–5. ADT, via its expert’s declaration, contends that the ‘664 specification teaches that

the “purpose” of the surface of the diffuser layer is met when it is highly modulated to the extent that it is sufficient to: (1) make the light source uniform; and (2) hide the structural features of the individual patterned light source. *Id.* at 4–9.

As an initial matter, while expert testimony is “useful . . . for a variety of purposes,” it should be discounted when it is inconsistent with a claim construction as required by the claims and specification. *Phillips*, 415 F.3d at 1318. Additionally, ADT’s reliance on *Bausch & Lomb, Inc.*, is overstated given that the case was decided long before the Federal Circuit clarified the roles of different evidence when construing claims. That said, even considering ADT’s expert’s declaration, ADT’s position that the ‘664 specification provides objective guidance regarding what comprises a highly modulated surface is pure conjecture. Unlike *Bausch & Lomb Inc.*, the ‘664 specification provides no objective framework regarding what is necessary to serve the inventor’s purposes.

While ADT identifies an alleged purpose of a “highly” modulated surface as being one of hiding structural features of the light source, the specification instead describes that feature only as a *potential* use of the surface as a component in an LCD display. *See* ‘664 patent at 6:30–34. The same is true for the alleged purpose of making the light source uniform. The ‘664 specification identifies one of many functions for a diffuser in an LCD display to be that of light source uniformity. *Id.* at 7:60–8:22. A potential use is not a purpose. Accordingly, ADT’s attempt to divine objective guidance from the specification via expert testimony does not save the claims from a finding of indefiniteness.

ADT’s proposed construction, moreover, is potentially indefinite itself. For example, ADT fails to provide any objective limits or boundaries of what is “sufficient” light uniformity and “sufficient” hiding of structural features. Additionally, ADT’s expert states that the

“structural features of the individual patterned light source” are “irregularities deliberately placed in or on the waveguide” that enable light to escape from the waveguide. PL. BRIEF, Ex. 7 ¶¶ 20–21. Under ADT’s construction, whether the surface of a diffuser is “highly modulated” would depend on features of a particular waveguide with which the diffuser happens to be used. As such, determining whether a particular diffuser infringes would change depending on the waveguide.

Indeed, Defendants examined ADT’s expert on this precise issue. Defendants presented ADT’s expert with an accused diffuser and two different waveguides and he conceded that the accused diffuser hides structural features of one waveguide, but fails to hide the structural features of the second waveguide. SJ MTN, EX. 1 at 122–131. Such a result fails to provide the public notice of whether or not they infringe. *See Halliburton Energy Servs., Inc. v. M-I, LLC*, 514 F.3d 1244, 1255 (2008) (“When a proposed construction requires that an artisan make a separate infringement determination for every set of circumstances in which the composition may be used, and when such determination are likely to result in differing outcomes (sometimes infringing and sometimes not), that construction is likely to be indefinite.”). As such, Claim 1 of the ‘664 patent is indefinite because the claims and specification fail to provide an objective standard to determine whether the a surface is “highly” modulated.

Smooth Bumps

Defendants also argue that the term “smooth bumps” is indefinite because the claims and patent specification fail to provide an objective standard to determine whether a bump is “smooth.” SJ MTN at 8–9. ADT counters, much like its argument regarding “highly modulated,” that one of ordinary skill in the art would understand the bounds of “smooth bumps” in the context of the patent specification. SJ OPP. at 9–15. ADT proposes a functional construction

which purportedly captures the “inventor’s purposes” of “minimizing optical backscatter” and “increas[ing] optical efficiency.” *Id.* at 10–13.

ADT proposes an understanding of “smooth” in the unrelated context of surface roughness. ADT again leverages off an expert declaration to supplement the disclosure of the specification as to possible functional uses and not actual “purposes” of the invention. Contrary to ADT’s contentions, the ‘664 specification fails to link the “smooth bumps” to the functions of minimizing backscatter and increasing optical efficiency. For example, while ADT is correct that the specification describes a “highly desirable” possible function of the invention as minimizing backscatter and increasing optical efficiency (*see* ‘664 patent at 1:50–55), the specification fails to tie the “smoothness” of the bumps to such a potential function.

Even assuming the “smoothness” of the bumps did aid in minimizing backscatter or increased optical efficiency, the ‘664 specification fails to provide any objective anchor to determine *how* smooth the bumps must be to facilitate such a function; or even how to measure the “smoothness” of the bumps to reach the proper threshold of smoothness. Additionally, ADT’s proposed construction itself provides no such guidance by using such unbounded and imprecise terms as “minimizing” and “increasing.” ADT essentially argues for a construction of an unbounded term of degree using other terms of degree.

ADT argues, via its expert declaration, that the specification provides objective anchors to measure minimizing backscatter and increasing optical efficiency because it teaches that the invention is designed to improve upon the prior art. SJ OPP. at 13. As such, ADT contends that a potential infringer could simply test the amount of reduction of backscatter by using “traditional diffusers” as the benchmark. *Id.* The specification, however, fails to provide any guidance regarding which prior art device should serve as a benchmark to evaluate whether the

backscatter is sufficiently minimized or the efficiency is increased. ADT's proposal still fails to provide a person of skill an objective anchor to measure the supposed functions of the smooth bumps.

Much like the "highly modulated" term, the '664 claims and specification simply fail to provide any objective guidance to determine whether a bump is "smooth." While ADT identifies alleged purposes of the invention, nothing in the specification ties the "smoothness" of the bumps to "minimizing" of backscatter or the "increasing" of optical efficiency. ADT cannot simply supplement the specification with an expert declaration absent some link in the written description tying the specific smoothness of the bumps to the purported functions of the invention. Again, a potential function is not a purpose. Accordingly, Claim 1 of the '664 patent is indefinite because the claims and specification fail to provide an objective standard to determine whether a bump is "smooth."

CONCLUSION

For the foregoing reasons, the Court interprets the claim language in this case in the manner set forth above. For ease of reference, the Court's claim interpretations are set forth in a table as Appendix A. Additionally, Defendants' Motion for Summary Judgment that Claim 1 of U.S. Patent No. 6,261,664 is Invalid Under 35 U.S.C. § 112 ¶ 2 (Doc. No. 165) is **GRANTED**.

So ORDERED and SIGNED this 12th day of July, 2012.

A handwritten signature in black ink, appearing to read 'Leonard Davis', written over a horizontal line.

**LEONARD DAVIS
UNITED STATES DISTRICT JUDGE**

APPENDIX A

U.S. Patent No. 5,739,931

Claim Term	Court's Construction
a light transmitting means	<u>Function</u> : transmitting light via reflection <u>Structure</u> : a light pipe, light wedge or waveguide, and any equivalents of that structure
having means for accepting light	<u>Function</u> : accepting light from a light source <u>Structure</u> : light accepting surface 17 or 17a, and any equivalents of that structure
microprism	a small transparent polygonal solid, which is a three dimensional body formed by intersecting surfaces that are each a closed plane figure bounded by three or more line segments, for reflecting or refracting light
[input surface] for receiving a portion of light transmitting through said light transmitting means	the outer surface of the microprism that receives a portion of light transmitting through the light transmitting means
optically coupled	in a relationship where the combination of optical components allows light to be transferred either directly or indirectly between the optical components
sidewall	a wall forming a side of a microprism
[at least one sidewall] positioned for effecting total internal reflection of a portion of light received by said light input surface	at least one sidewall is angled to cause total internal reflection of the light that enters the light input surface and strikes that sidewall

U.S. Patent No. 6,261,664

Claim Term	Court's Construction
polymerized material layer	single thickness of material formed by polymerization
which layer has a highly modulated surface having smooth bumps ranging from about 1 micron to about 20 microns in both height and width	indefinite