

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

OPTOLUM, INC.,)	
)	
Plaintiff,)	
)	
v.)	1:17CV687
)	
CREE, INC.,)	
)	
Defendant.)	

MEMORANDUM OPINION AND ORDER

OSTEEN, JR., District Judge

OptoLum, Inc. ("OptoLum") sues Defendant Cree, Inc. ("Cree") for patent infringement, violations of the Lanham Act, and unjust enrichment. (Doc. 32.) This matter is before the court on Cree's motion for partial summary judgment pursuant to Federal Rule of Civil Procedure 56. (Doc. 190.) Because there is no genuine issue of material fact with respect to Cree's argument that the Gen 2.5 bulbs do not infringe and that Cree's Single Ring bulbs do not literally infringe the asserted patents, the court will grant Cree's motion on these issues. The court finds, however, that Cree fails to show that there is no genuine issue of material fact as to the remaining issues, and the court will deny Cree's motion as to these arguments.

I. FACTUAL AND PROCEDURAL BACKGROUND

"In reviewing the evidence as it relates to a motion for summary judgment, this Court must . . . view all evidence in the

light most favorable to the non-moving party.” Shealy v. Winston, 929 F.2d 1009, 1011 (4th Cir. 1991). The facts here, taken in the light most favorable to OptoLum, are as follows.

A. Factual Background

1. Parties

Plaintiff OptoLum is a corporation organized under the laws of the state of Arizona with its principal place of business there as well. (Amended Complaint (“Am. Compl.”) (Doc. 32) ¶ 28.)

Defendant Cree is a corporation organized under the laws of the state of North Carolina with its principal place of business there as well. (Id. ¶ 30.)

Both parties produce lighting products using light-emitting diodes (“LEDs”). (Id. ¶¶ 12, 20, 22-23, 29.)

2. OptoLum’s Patents at Issue

OptoLum seeks to enforce U.S. Patents 6,831,303 (the “’303 Patent”), and 7,242,028 (the “’028 Patent”) in this action (together, the “Patents”).¹ (Id. ¶¶ 25-27.)

¹ Both Patents are continuations of U.S. Patent No. 6,573,536 (the “’536 Patent”), (see Def.’s Br. (Doc. 191), Ex. B, U.S. Patent No. 7,242,028 (the “’028 Patent”) (Doc. 191-3) at 2), but OptoLum does not seek to enforce this Patent and Cree submits that the ’536 Patent is not at issue in this matter, (Def.’s Br. (Doc. 191) at 18 n.2).

These Patents were invented by Mr. Joel M. Dry ("Dry"). (See Def.'s Mem. in Supp. of Mot. for Partial Summ. J. ("Def.'s Br.") (Doc. 191), Ex. A, U.S. Patent No. 6,831,303 (" '303 Patent") (Doc. 191-2) at 2; Ex. B, U.S. Patent No. 7,242,028 (" '028 Patent") (Doc. 191-3) at 2.)² The '028 Patent, issued on July 10, 2017, is a continuation of the '303 Patent. ('028 Patent (Doc. 191-3) at 2.) The '303 Patent was issued on December 14, 2004. ('303 Patent (Doc. 191-2) at 2.) Dry is the CEO and President of OptoLum. ((Declaration of Leah McCoy (Doc. 214) Ex. A, Declaration of Joel M. Dry ("Dry Decl.") (Doc. 214-1) ¶ 2.) At the time the United States Patent and Trademark Office issued the patents to Dry, he and his wife, Martha Baker ("Baker"), were married and living in Arizona. (Deposition of Joel Dry ("Dry Dep.") (Doc. 191-7) at 8, 10.)

Dry assigned both patents to OptoLum; he assigned the '303 Patent application to OptoLum in 2003 and the '028 Patent in 2016. (Doc. 191-8 at 2; Doc. 191-9 at 3.)

The '303 Patent discloses a "light source that utilizes light emitting diodes [LEDs] that emit white light." ('303 Patent (Doc. 191-2) at 2.) "The diodes are mounted on an

² All citations in this Memorandum Opinion and Order to documents filed with the court refer to the page numbers located at the bottom right-hand corner of the documents as they appear on CM/ECF.

elongate member having at least two surfaces upon which the [LEDs] are mounted," and the "elongate member is thermally conductive and is utilized to cool the [LEDs]." (Id.) The '303 Patent includes independent claim 1 and dependent claims 2-18. OptoLum alleges Cree infringed claims 2-4 and 6-9 of the '303 Patent. (Doc. 191-16 at 3.) Claim 1 claims:

A light source comprising:

an elongate thermally conductive member having an outer surface;
a plurality of light emitting diodes carried on said elongate member outer surface at least some of said light emitting diodes being disposed in a first plane and others of said light emitting diodes being disposed in a second plane not coextensive with said first plane;
electrical conductors carried by said elongate thermally conductive member and connected to said plurality of light emitting diodes to supply electrical power thereto; and
said elongate thermally conductive member being configured to conduct heat away from said light emitting diodes to fluid contained by said elongate thermally conductive member;
said elongate thermally conductive member comprises one or more heat dissipation protrusions.

('303 Patent (Doc. 191-2) col. 4 lines 25-43)

The '028 Patent also discloses a "light source that utilizes light emitting diodes [LEDs] that emit white light," which uses an elongate member to conduct heat. ('028 Patent (Doc. 191-3) at 2.) OptoLum alleges Cree infringed claims 1-3,

5-8, 14, and 16 of the '028 Patent.³ (Doc. 191-16 at 3.) Claim 1 is an independent claim and the remaining claims are dependent claims. ('028 Patent (Doc. 191-3) at 6.) It reads:

A light source comprising:

an elongate thermally conductive member having an outer surface;
a plurality of solid state light sources carried on said elongate member outer surface at least some of said solid state light sources being disposed in a first plane and others of said solid state light sources being disposed in a second plane not coextensive with said first plane;
electrical conductors carried by said elongate thermally conductive member and connected to said plurality of solid state light sources to supply electrical power thereto;
said elongate thermally conductive member being configured to conduct heat away from said solid state light sources to fluid contained by said elongate thermally conductive member; and
said elongate thermally conductive member comprises one or more heat dissipation protrusions, at least one of said heat dissipation protrusions being carried on said elongate member outer surface.

('028 Patent (Doc. 191-3) col. 4 lines 30-50.)

Claim 1 of the '028 Patent reiterates Claim 1 of the '303 Patent, except instead of using the term "light emitting

³ OptoLum filed its original Infringement Contentions on April 21, 2017. (Doc. 191-4 at 10.) These Infringement Contentions listed Claims 17, 19-22, 27, and 29-30 as infringed claims of the '028 Patent. (*Id.* at 3.) In November 2017, OptoLum notified Cree that it was no longer asserting infringement of claims 19-22, 27, and 29-30. (Doc. 191-5 at 2.) Further, in April 2019, OptoLum notified Cree that it was no longer asserting infringement of claim 17 of the '028 Patent. (Doc. 191-6 at 2.)

diodes," it uses the term "a plurality of solid state light sources." (Compare '303 Patent (Doc. 191-2) col. 4 line 28 (Doc. 191-2), with '028 Patent (Doc. 191-3) col. 4 line 33.)

3. Cree's Accused Products

OptoLum identifies seventy-three lighting products produced by Cree that allegedly infringe the '303 Patent and the '028 Patent (together, the "Accused Products"). (Doc. 191-16 at 3-5.) In particular, OptoLum submits the Cree 60 Watt Bulb, a "single ring" bulb (the "Single Ring bulb"); and the Cree 100 Watt Bulb, a "multiple ring" bulb, as representative of the Accused Products. (Id. at 5-7.) OptoLum alleges the 60 Watt Bulb and the 100 Watt Bulb both infringe the '303 Patent and the '028 Patent. (Id.)

B. Procedural Background

The parties filed a Joint Claim Construction Statement in November 2017. (Doc. 106.) The parties agreed to the constructions of several phrases. The court also issued its own Claim Construction Memorandum Opinion and Order. (Doc. 152.) In that Order, the court found that OptoLum disclaimed subject matter concerning the phrase "disposed in a second plane not coextensive with said first plane." (Id. at 21-22.)

Cree filed its motion for partial summary judgment on noninfringement, invalidity, and damages, (Doc. 190), and a supporting brief, (Doc. 191). OptoLum responded, (Pl.'s Opp'n to

Cree's Omnibus Mot. for Summ. J. of Non-Infringement, Invalidity and Damages ("Pl.'s Resp.") (Doc. 213)), and Cree replied, (Def.'s Reply Mem. in Supp. of Omnibus Mot. for Partial Summ. J. of Non-Infringement, Invalidity, and Damages ("Def.'s Reply") (Doc. 218)). Plaintiff has moved for leave to file a surreply, (Doc. 220), which the court will grant.

II. STANDARD OF REVIEW

Summary judgment is appropriate when "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a); see Celotex Corp. v. Catrett, 477 U.S. 317, 322-23 (1986). This court's summary judgment inquiry is whether the evidence "is so one-sided that one party must prevail as a matter of law." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 252 (1986). The moving party bears the initial burden of demonstrating "that there is an absence of evidence to support the nonmoving party's case." Celotex Corp., 477 U.S. at 325. If the "moving party discharges its burden . . . , the nonmoving party must come forward with specific facts showing that there is a genuine issue for trial." McLean v. Patten Cmtys., Inc., 332 F.3d 714, 718-19 (4th Cir. 2003) (citing Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 586-87 (1986)). Summary judgment should be granted "unless a reasonable jury could return a verdict for the

nonmovant party on the evidence presented.” McLean, 332 F.3d at 719 (citing Liberty Lobby, 477 U.S. at 247-48).

III. ANALYSIS

Cree raises five issues in its motion for partial summary judgment. First, Cree contends its Generation 2.5 Single Ring bulb does not infringe the Patents. (Def.’s Br. (Doc. 191) at 27.) Second, Cree argues that its Single Ring bulb does not infringe the Patents. (Id. at 33.) Third, Cree asserts that OptoLum lacks standing to assert the ‘028 Patent. (Id. at 43.) Fourth, Cree argues the ‘028 Patent is invalid pursuant to 35 U.S.C. § 112 for violating the written description requirement. (Id. at 48, 54.) Finally, Cree contends that pre-suit damages are not recoverable because OptoLum failed to comply with the written description requirement under 35 U.S.C. § 287(a). (Id. at 62-63.) The court will address Cree’s arguments in turn. Because Cree alleges OptoLum lacks standing to assert the ‘028 Patent, which would be a dispositive issue regarding the ‘028 Patent, the court will address this argument first.

A. OptoLum’s Standing to Maintain Suit for Infringement of the ‘028 Patent

All co-owners of a patent must join in a patent suit. Drone Techs., Inc. v. Parrot S.A., 838 F.3d 1283, 1292 (Fed. Cir. 2016). Cree argues that Martha Baker, Dry’s wife, has a

co-ownership interest in the '028 Patent by virtue of Arizona property laws, where they resided when Dry was issued the '028 Patent. Thus, Cree contends, because Dry only assigned his interest in the '028 Patent to OptoLum, and Martha Baker did not assign her interest, she retains an ownership interest in the '028 Patent but has not joined in this suit, thus depriving OptoLum of prudential standing to enforce the '028 Patent. (Def.'s Br. (Doc. 191) at 14-15.)

OptoLum argues that Arizona law provides each spouse the right to dispose of community property while they are still married. (Pl.'s Resp. (Doc. 213) at 23-24.) OptoLum also acknowledges that such dispositions can sometimes constitute a breach of fiduciary duty between spouses, but it contends Martha Baker had full knowledge of the assignment and that there is no evidence in the record that Dry's assignment of the '028 Patent was a breach of fiduciary duty which would invalidate the assignment. (Id. at 24-25.)

Article III of the Constitution "limits the jurisdiction of federal courts to 'Cases' and 'Controversies,'" Beck v. McDonald, 848 F.3d 262, 269 (4th Cir.), cert. denied sub nom. Beck v. Shulkin, ____ U.S. ____, 137 S. Ct. 2307 (2017) (quoting U.S. Const. art. III, § 2), and the doctrines of standing and mootness derive from that limitation, White Tail Park, Inc. v. Stroube, 413 F.3d 451, 458 (4th Cir. 2005). The standing

determination “remains focused on whether the party invoking jurisdiction had the requisite stake in the outcome when the suit was filed.” Davis v. Fed. Election Comm’n, 554 U.S. 724, 734 (2008).

The standing doctrine has two components: Article III standing, which implicates the jurisdiction of the federal courts, and prudential standing, “which embodies ‘judicially self-imposed limits on the exercise of federal jurisdiction.’” United States v. Windsor, 570 U.S. 744, 757 (2013) (quoting Elk Grove Unified Sch. Dist. v. Newdow, 542 U.S. 1, 11-12 (2004)); Doe v. Va. Dep’t of State Police, 713 F.3d 745, 753 (4th Cir. 2013). The “irreducible minimum requirements” of standing that a plaintiff bears the burden of establishing under Article III are (1) an injury in fact, (2) that is fairly traceable to the challenged conduct of the defendant, and (3) that is likely to be redressed by a favorable judicial decision. Spokeo, Inc. v. Robins, 578 U.S. ___, ___, 136 S. Ct. 1540, 1547 (2016) (quoting Lujan v. Defenders of Wildlife, 504 U.S. 555, 560 (1992)); David v. Alphin, 704 F.3d 327, 333 (4th Cir. 2013).

Certain prudential considerations may nevertheless deprive a plaintiff of standing “[e]ven when Article III permits the exercise of federal jurisdiction.” Windsor, 570 U.S. at 760. “Before a court may exercise jurisdiction over a patent infringement action, it must be satisfied that, ‘in addition to

Article III standing, the plaintiff also possesses standing as defined by § 281 of the Patent Act.'" Drone Techs., 838 F.3d at 1292 (quoting Alps S., LLC v. Ohio Willow Wood Co., 787 F.3d 1379, 1382 (Fed. Cir. 2015)). Section 281 provides that a "patentee shall have remedy by civil action for infringement of his patent." 35 U.S.C. § 281. The term "patentee" includes both the person to whom the patent issued, but also "successors in title to the patentee." 35 U.S.C. § 100(d); see also H.R. Techs., Inc. v. Astechnologies, Inc., 275 F.3d 1378, 1384 (Fed. Cir. 2002) ("In order to have standing, the plaintiff in an action for patent infringement must be a 'patentee' pursuant to 35 U.S.C. §§ 100(d) and 281"). "A party may become the successor in title to the original patentee by assignment, and then may sue for infringement in its own name." Drone Techs., 838 F.3d at 1292 (citing 35 U.S.C. § 261 ("[P]atents, or any interest therein, shall be assignable in law by an instrument in writing."); Morrow v. Microsoft Corp., 499 F.3d 1332, 1339-40 (Fed. Cir. 2007); Propat Int'l Corp. v. RPost, Inc., 473 F.3d 1187, 1189 (Fed. Cir. 2007)). However, "if a co-inventor assigns his or her ownership interest to a third party, the assignee cannot sue infringers '[a]bsent the voluntary joinder of all co-owners.'" Drone Techs., 838 F.3d at 1292 (quoting Israel Bio-Eng'g Project v. Amgen, Inc., 475 F.3d 1256, 1264-65 (Fed. Cir. 2007)).

For OptoLum to have prudential standing under § 281, it must be the sole owner or the co-owner of the '028 Patent. If Dry assigned the entirety of the '028 Patent to OptoLum, OptoLum is the sole owner of the '028 Patent and therefore has prudential standing to enforce that Patent. In order to make this determination, the court applies Arizona law to determine whether Baker retained a community property interest in the '028 Patent when Dry assigned it to OptoLum.

Under 35 U.S.C. § 261, "patents shall have the attributes of personal property." Because Dry received the '028 Patent while he and Baker were living and domiciled in Arizona, Arizona property law applies. See Enovsys LLC v. Nextel Commc'ns, Inc., 614 F.3d 1333, 1342 (Fed. Cir. 2010) (noting that "[w]ho has legal title to a patent is a question of state law" and applying California community property law to determine whether a party, who lived in California, owned the patent at issue); see also Stop the Beach Renourishment, Inc. v. Fla. Dep't of Env'tl. Prot., 560 U.S. 702, 707 (2010) ("Generally speaking, state law defines property interests"). Further, the parties agree that the '028 Patent was subject to Arizona's community property laws when it was assigned. (Compare Def.'s Br. (Doc. 191) at 47, with Pl.'s Resp. (Doc. 213) at 26.)

Ariz. Rev. Stat. Ann. § 25-211 provides that "[a]ll property acquired by either husband or wife during the marriage

is the community property of the husband and wife except for property that is . . . [a]cquired by gift, devise or descent." Ariz. Rev. Stat. Ann. § 25-214 further provides that "[t]he spouses have equal management, control and disposition rights over their community property and have equal power to bind the community," and "[e]ither spouse separately may acquire, manage, control or dispose of community property or bind the community" This law also provides that:

joinder of both spouses is required in any of the following cases:

1. Any transaction for the acquisition, disposition or encumbrance of an interest in real property other than an unpatented mining claim or a lease of less than one year.
2. Any transaction of guaranty, indemnity or suretyship.
3. To bind the community, irrespective of any person's intent with respect to that binder, after service of a petition for dissolution of marriage, legal separation or annulment if the petition results in a decree of dissolution of marriage, legal separation or annulment.

Ariz. Rev. Stat. § 25-214(C).

Dry was married to his wife when they moved to Arizona in October 2004. (Dry Dep. (Doc. 191-7) at 8, 10.) The '028 Patent was not issued until July 2007. (Doc. 191-3 at 2.) Because the '028 Patent is personal property under federal law, and it was acquired by Dry during the marriage, it was community property under Arizona law. See Ariz. Rev. Stat. § 25-211. Further, the

patent is not real property, nor was the assignment of the '028 Patent a "transaction of guaranty, indemnity or suretyship" or a transaction "[t]o bind the community" after the dissolution of the marriage. Therefore, either Dry or Baker could separately dispose of community property, including the patent at issue, under Ariz. Rev. Stat. Ann. § 25-214.

Dry assigned his interest in the '028 Patent in a written instrument. (Doc. 191-9.) This court finds that this constituted a valid disposition of community property and that Baker's signature was unnecessary because Dry had authority to "control or dispose of community property." Ariz. Rev. Stat. § 25-214. Cree's argument that Baker's interest could only be transferred by written instrument, (Def.'s Reply (Doc. 218) at 11), is technically correct; it was, but by Dry, as is permitted by Arizona law.

Thus, when Dry assigned his interest in the '028 Patent to OptoLum in 2016, Baker did not retain an interest in the '028 Patent. See U.S. Bank NA v. Varela, No. CV-15-02575-PHX-DLR, 2016 WL 7178668, at *3 n.6 (D. Ariz. Dec. 9, 2016) (observing the plaintiff's argument that the contract at issue was not valid because it was not also signed by the other spouse was without merit under A.R.S. § 25-214); Wasserman v. Moya, No. 1 CA-CV 12-0509, 2013 WL 3893322, at *3-4 (Ariz. Ct. App. July 25, 2013) (finding that the husband could dispose of

property bought with community funds and the wife was not entitled to one-half the value of the disposed property).

In its reply, Cree raises the argument that, in the assignment, Dry identifies himself as "Joel Dry, an individual," thus "[a]s 'an individual,' Mr. Dry acted in his individual capacity, not purporting to represent Martha [Baker] of the community interest."⁴ (Def.'s Reply (Doc. 218) at 11.) Cree further argues that "[t]he assignment makes no mention of any rights held by Martha [Baker]. Because Martha [Baker] held an interest in the '028 patent, and those rights were never identified - directly or indirectly - in the assignment document, the ownership interest of Martha [Baker] was never transferred to OptoLum." (Id.) The court finds these arguments unconvincing. First, Cree offers no legal authority for either argument. Second, as OptoLum points out in its surreply, because Joel Dry designated himself as "an individual," "it is clear

⁴ The court finds that this constitutes a new argument for the sake of Plaintiff's motion to file a surreply. Parties do not have the right to file a surreply. See Johnson v. Rinaldi, No. 1:99CV170, 2001 WL 293654, at *7 (M.D.N.C. Feb. 16, 2001) (noting that the "[c]ourt knows of no authority establishing a right to file a surreply"). Generally, however, courts allow a party to file a surreply when fairness dictates based on new arguments raised in the previous reply. See United States v. Falice, No. 1:04CV878, 2006 WL 2488391 (M.D.N.C. Aug. 25, 2006); Khoury v. Meserve, 268 F. Supp. 2d 600, 605-06 (D. Md. 2003). Such is the case here; the court will grant Plaintiff's motion, and the court will consider this argument and Plaintiff's filed surreply.

from the language of the assignment as a whole that the notation 'an individual' merely identifies Mr. Dry as an individual and not a corporate or other type of entity." (Doc. 220-2 at 9.) The assignment states that Joel Dry "assign[s], transfer[s], and deliver[s]" to OptoLum "all right, title and interest in and to" the '028 Patent. (Doc. 191-9 at 3.) This language indicates that Dry assigned all interest to OptoLum, not merely his own. Third, Cree's argument that Baker's interest was not identified in the assignment is unavailing because there is no requirement under Arizona law that any lawful disposal of community property must identify the other spouse's interest.⁵

The court finds that Cree has failed to demonstrate that there is no genuine issue of material fact that Martha Baker retained an ownership interest in the '028 Patent. The court will deny Cree's motion for summary judgment on this issue.

⁵ In addition to the instances when the other spouse must be joined, "each spouse owes the other certain fiduciary duties." In re Estate of Kirkes, 231 Ariz. 334, 335, 295 P.3d 432, 433 (2013). While Cree does not address the issue of whether Dry breached any fiduciary duty owed to Baker, OptoLum is correct that Cree has put forth no evidence that Dry committed a breach of fiduciary duty to Baker, which could have rescued Cree's failed argument. See Mezey v. Fioramonti, 204 Ariz. 599, 608, 65 P.3d 980, 989 (2003) ("Husband had no absolute right to manage or dispose of community property under A.R.S. § 25-214(C). A husband's statutory rights to act with respect to marital property remain subject to his fiduciary duty to his wife's interest in the property.").

The court will next determine whether there is a genuine issue of material fact as to whether the '028 Patent violated the written description requirement under 35 U.S.C. § 112.

B. The '028 Patent and the Written Description Requirement under 35 U.S.C. § 112(a)

Cree argues that the '028 Patent fails to satisfy the written description requirement of 35 U.S.C. § 112(a) and thus is invalid. Cree argues OptoLum violated the implicit rule underlying § 112 that "the scope of the right to exclude as expressed in the claims must not be greater than what the inventor chose to disclose to the public in the patent specification." (Def.'s Br. (Doc. 191) at 16.)

Specifically, Cree observes that the '303 Patent claims contain the phrase "light emitting diodes," while the '028 Patent merely replaces this phrase with "solid state light sources" ("SSLs") in its claims. (Id. at 15.)

Cree makes three sub-arguments in support of this position. First, it uses the testimony of OptoLum's expert, Mr. A. Brent York, to demonstrate that the specification only includes LEDs. Second, Cree argues that Mr. York's opinion and the '028 Patent prosecution history, upon which OptoLum relies in making its own argument, are making obviousness arguments and thus cannot create a genuine issue of material fact. Third, Cree contends that, because the specification does not contain the words

"solid state light sources," it must fail to meet the written description requirement.

The court interprets Cree's argument as follows: given SSLs are a broader category of light sources, of which LEDs are a subset, OptoLum failed to "disclose or mention" another type of light source other than LEDs in the '028 Patent claiming a "solid state light source." Therefore, because, in substance, the '028 Patent discloses only LEDs, OptoLum's '028 Patent claim reaches too far beyond its substance in claiming an SSL, which is broader than an LED; instead, OptoLum may only claim an LED light source in the '028 Patent.

Because the court finds that the testimony and opinion of OptoLum's expert create a genuine issue of material fact regarding what a person of ordinary skill in the art would find is disclosed in the '028 Patent specification, the court will deny Cree's motion for summary judgment on this issue.

1. Written Description Requirement Background

35 U.S.C. § 112(a) provides that a patent:

shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

35 U.S.C. § 112(a); see Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 731 (2002). Whether a patent complies with the written description requirement is a question of fact determined as of the time of filing. See Ariad Pharm., Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1351, 1355 (Fed. Cir. 2010) (en banc).

In order to satisfy the written description requirement, the written description must “clearly allow persons of ordinary skill in the art [a Person of Skill in the Art (“POSA”)] to recognize that [the inventor] invented what is claimed. In other words, the applicant must ‘convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention.’” Ariad Pharm., Inc. v. Eli Lilly & Co., 560 F.3d 1366, 1371-72 (Fed. Cir. 2009) (internal quotation marks omitted) (quoting In re Alton, 76 F.3d 1168, 1172 (Fed. Cir. 1996) and Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)). A patent may be invalid for failing the written description requirement on its face. See Univ. of Rochester v. G.D. Searle & Co., 358 F.3d 916, 927 (Fed. Cir. 2004) (“[A] patent can be held invalid for failure to meet the written description requirement, based solely on the language of the patent specification.”). “However, the failure of the specification to specifically mention a limitation that later appears in the claims is not a fatal one when one skilled

in the art would recognize upon reading the specification that the new language reflects what the specification shows has been invented.” All Dental Prodx, LLC v. Advantage Dental Prods., Inc., 309 F.3d 774, 779 (Fed. Cir. 2002).

Despite being a question of fact, the issue of invalidity for lack of written description may be resolved on summary judgment. See Carnegie Mellon Univ. v. Hoffmann-La Roche Inc., 541 F.3d 1115, 1126 (Fed. Cir. 2008) (affirming summary judgment of invalidity for lack of written description). But competing testimony from experts may create a genuine issue of material fact as to what a POSA would recognize as disclosed in a specification. See Enzo Biochem, Inc. v. Gen-Probe Inc., 323 F.3d 956, 966, 970 (Fed. Cir. 2002); Univ. of S. Fla. v. United States, 146 Fed. Cl. 274, 294 (2019).

2. Patent Specification and Claim Language of the '303 Patent and the '028 Patent

The patent specification of the '303 Patent is as follows:

The exterior surface of elongate heat sink has a plurality of Light Emitting Diodes disposed thereon. Each LED in the illustrative embodiment comprises a white light emitting LED of a type that provides a high light output. Each LED also generates significant amount of heat that must be dissipated to avoid thermal destruction of the LED. By combining a plurality of LEDs on elongate heat sink, a high light output light source that may be used for general lighting is provided.

. . . .

As will be appreciated by those skilled in the art, the principles of the invention are not limited to the use of light emitting diodes that emit white light. Different colored light emitting diodes may be used to produce monochromatic light or to produce light that is the combination of different colors.

('303 Patent (Doc. 191-2) col. 3 lines 11-19; col. 4 lines 10-15 (emphasis added).)

The '303 Patent claims:

A light source comprising:

an elongate thermally conductive member having an outer surface;
a plurality of light emitting diodes carried on said elongate member outer surface at least some of said light emitting diodes being disposed in a first plane and others of said light emitting diodes being disposed in a second plane not coextensive with said first plane

(Id. col. 4 lines 25-32 (emphasis added).)

The patent specification of the '028 Patent is as follows:

The exterior surface of elongate heat sink has a plurality of Light Emitting Diodes disposed thereon. Each LED in the illustrative embodiment comprises a white light emitting LED of a type that provides a high light output. Each LED also generates significant amount of heat that must be dissipated to avoid thermal destruction of the LED. By combining a plurality of LEDs on elongate heat sink, a high light output light source that may be used for general lighting is provided.

. . . .

As will be appreciated by those skilled in the art, the principles of the invention are not limited to the use of light emitting diodes that emit white light. Different colored light emitting diodes may be used to produce monochromatic light or to produce light that is the combination of different colors.

('028 Patent (Doc. 191-3) col. 3 lines 18-26; col. 4 lines 15-20 (emphasis added).)

The '028 Patent claims:

A light source comprising:

an elongate thermally conductive member having an outer surface;
a plurality of solid state light sources carried on said elongate member outer surface at least some of said solid state light sources being disposed in a first plane and others of said solid state light sources being disposed in a second plane not coextensive with said first plane

(Id. col. 4 lines 30-38 (emphasis added).)

3. Parties' Evidence

OptoLum and Cree seem to agree that the claim phrase "solid state light source" has a broader scope than "light emitting diodes." (See Def.'s Br. (Doc. 191) at 53 n.14; Pl.'s Resp. (Doc. 213) at 31-39.)

Cree submits as evidence only its own interpretation of the '028 Patent specification as well as the testimony of OptoLum's expert, Mr. York, that the specification discloses nothing broader than LEDs. (Def.'s Br. (Doc. 191) at 55-56.) In discussing whether the '028 specification, and Lines 15-20 in particular, covered non-LED SSLs, Mr. York stated the following:

Q: So the only disclosure in the '028 patent that you are relying on to describe the scope of the solid-state light sources being other than LEDs is found in Column 4, lines 15 to 20?

A. Strictly speaking, in this particular document,
that is the one location

((Declaration of Leah McCoy (Doc. 214) Ex. B, Deposition of A.
Brent York ("York Dep.") (Doc. 214-2) at 8.)⁶ Lines 15-20 of
Column 4 in the '028 Patent specification read:

As will be appreciated by those skilled in the
art, the principles of the invention are not limited
to the use of light emitting diodes that emit white
light. Different colored light emitting diodes may be
used to produce monochromatic light or to produce
light that is the combination of different colors.

('028 Patent (Doc. 191-3) col. 4 lines 15-20.) Cree argues that
Mr. York's testimony "confirms that only LEDs are recited in the
text of the '028 Patent." (Def.'s Br. (Doc. 191) at 56.)

OptoLum rebuts this argument with other testimony and
opinions from Mr. York. OptoLum submits testimony of Mr. York
from the same deposition, in which he testifies:

I go back to Column 4, in order for that statement,
the description of "different-colored light-emitting
diodes may be used to produce monochromatic light" can
only, in my understanding and the teachings, or what
I've learned in the industry, can only be produced or
primarily be produced by a laser diode.

(York Dep. (Doc. 214-2) at 6-7.) Though the specification
therefore appears to only disclose LEDs, Mr. York's testimony
alleges that a POSA would have understood LEDs and the

⁶ While Cree cites to Exhibit V to Document 191, that
exhibit does not contain this quoted section. (See Doc. 191-23
at 3.) The court will instead cite to Exhibit B to Document 214,
which reflects this exchange. (See Doc. 214-2 at 8.)

technology disclosed in the specification to include other solid state light sources as well. It therefore seems that SSLs constitute the broadest category of light sources at issue in this case, which encompasses LEDs, the category of which, in turn, encompasses other solid state light sources.

OptoLum also submits York's expert report, in which he finds that "the SSLs described in the '028 patent are high power LEDs and laser diodes." (Doc. 214-4 ¶¶ 376-78 (emphasis added)). More specifically, Mr. York wrote the following:

A POSA at the time of the invention would have understood SSLs to mean a light source utilizing light emitted by solid-state electroluminescence, as opposed to thermal radiation (as is the case with incandescent bulbs) or electric discharge driven fluorescence (as is the case with CFLs).

Further, it was generally known in the LED lighting industry around 2002, that while LEDs were the most common solid state light sources, sometimes other solid state light sources could be used in their replacement. In fact, laser diodes in particular fit all the descriptions and requirements of the SSLs, exemplified by the LEDs in the '303 and '028 patent specifications, including:

- a) That the SSLs were capable of emitting both white and colored light as stated both in the specification and the claims of the '028 Patent.
- b) That the SSLs were capable of emitting an amount of light that could be used for "general lighting," or "general illumination";
- c) That the SSLs had the need to have their heat dissipated, in order to avoid their degraded operation or "thermal destruction"; and

d) That the SSLs are designed such that their light is emitted away from the heat sink, while their heat is conducted towards the heat sink.

(Doc. 214-4 ¶ 377 (internal citations omitted).) Mr. York concluded, stating, “[t]herefore, because all of these distinctions from the ‘028 patent were satisfied by laser diodes, as well as exemplary high-power LEDs, it is my conclusion that the SSLs described in the ‘028 patent are high power LEDs and laser diodes.”⁷ (Id. ¶ 378.)

OptoLum finally points to the prosecution history of the ‘028 Patent as evidence that a POSA would “recognize that [the inventor] invented what is claimed.” Carnegie Mellon Univ., 541 F.3d at 1122. In the prosecution history, the Patent Examiner observed:

[A]t the time the present invention was made, it was known that solid state light sources with various colors, including white light, and various power consumptions, including the then and now labeled HBLEDs, had been manufactured. Therefore, it would be fair to conclude that it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the reference's device with various emitted lights based on the known and availability of the various solid state light sources.

(Doc. 214-3 at 2-3.) OptoLum argues that the ‘028 prosecution history “contradicts Cree’s assertion that there is ‘no

⁷ Because Mr. York appears to limit the SSLs disclosed in the ‘028 Patent to LEDs and laser diodes, Plaintiff’s evidence therefore establishes that “solid state light sources” as used in the ‘028 Patent includes, at most, LEDs and laser diodes, for the purposes of this summary judgment motion.

intrinsic evidence explaining or otherwise providing evidence for the scope of the "solid state light sources" claim phrase.'" (Pl.'s Resp. (Doc. 213) at 34.)

4. Analysis

In light of the evidence outlined summarily above, the court now turns to Cree's three arguments.

a. Cree's First Argument: Language of the Specification

While Cree argues that the '028 Patent specification includes no other technology beyond LEDs, Mr. York's testimony, taking it in the light most favorable to OptoLum, alleges that a POSA would have understood LEDs and the technology disclosed in the specification to include laser diodes – another type of SSLS – as well. The court therefore finds that Mr. York's testimony and opinion create a genuine issue of material fact as to what a POSA would have understood the '028 Patent specification to disclose: solely LEDs or both LEDs and other SSLSs, like laser diodes.

The existence of expert testimony conflicting with the moving party's interpretation of a patent, as is the case with Mr. York, might not be dispositive in creating a genuine issue of material fact, specifically when the expert's testimony consists of legal conclusions about what constitutes an adequate written description and is also completely unsupported by the

text of the specification. Maytag Corp. v. Electrolux Home Prods., Inc., 448 F. Supp. 2d 1034, 1077-78 (N.D. Iowa 2006).

The court finds that this is not the case here; Mr. York's testimony, in addition to the prosecution history, indicate that POSAs could read the '028 Patent specification as meaning something different.

b. Cree's Second Argument: Obviousness

Cree's second argument alleges that Mr. York essentially makes "an obviousness-type analysis" with regard to his opinion on the "different-colored light emitting diodes." (Def.'s Reply (Doc. 218) at 13.) Cree categorizes his opinion as "simply an argument that it would be obvious to substitute LEDs with other SSLs." (Id. at 14.) And Cree also characterizes the prosecution history OptoLum submits as another "obviousness" argument, which fails to create a genuine issue of material fact. (Id.)

Regarding Cree's argument that Mr. York essentially makes "an obviousness-type analysis" with regard to his opinion on the "different-colored light emitting diodes," (id. at 13), the court is unpersuaded. There is no rigid test for obviousness. See KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 415 (2007). Rather, a court considers whether "a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention" and whether "the skilled artisan would have had a reasonable expectation of

success in doing so.” Procter & Gamble Co. v. Teva Pharm. USA, Inc., 566 F.3d 989, 994 (Fed. Cir. 2009); see Edge-Works Mfg. Co. v. HSG, LLC, 285 F. Supp. 3d 883, 897–98 (E.D.N.C. 2018).

The court agrees with Cree that “obviousness simply is not enough [to satisfy the written description requirement]; the subject matter must be disclosed to establish possession.” (Def.’s Reply (Doc. 218) at 14 (quoting PowerOasis, Inc. v. T-Mobile USA, Inc., 522 F.3d 1299, 1310 (Fed. Cir. 2008)).) Obviousness looks to whether a POSA would be “motivated to combine the teachings of the prior art references to achieve the claimed invention.” Procter & Gamble Co., 566 F.3d at 994. But the court understands Mr. York’s testimony on this issue – that “the description of ‘different-colored light-emitting diodes may be used to produce monochromatic light’ can only . . . be produced or primarily be produced by a laser diode,” (York Dep. (Doc. 214-2) at 6-7) – to be regarding what a POSA would understand the specification to mean, as opposed to whether “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention.”

Mr. York’s testimony thus seems to create a genuine issue of material fact as to what a POSA would have “recognize[d] that [the inventor] invented what is claimed.” Carnegie Mellon Univ., 541 F.3d at 1122.

Further, regarding the prosecution history, OptoLum is correct to note that the Federal Circuit has looked to the prosecution history to determine how a POSA would have understood a certain word in the specification for written description purposes. See Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1366 (Fed. Cir. 2004). Cree again attacks OptoLum's reliance on this portion of the prosecution history on the basis of obviousness. The court disagrees; taking the facts in the light most favorable to OptoLum, the court interprets the prosecution history as more supportive evidence of how a POSA would have understood the '028 Patent specification. A finder of fact could easily disagree with this court's interpretation, but this court is required to consider the evidence in the light most favorable to the nonmoving party.

c. Cree's Third Argument: Failure to Include the Language "Solid State Light Sources"

Finally, Cree's third argument states that "[t]here is no factual issue that the text of the specification fails to recite 'solid state light sources.' Absent such a recitation, there is no written description of SSLS sufficient to show the inventor had possession of any device beyond LEDs." (Def.'s Reply (Doc. 218) at 14.)

To the extent Cree argues that the '028 Patent fails under the written description requirement due to the words "solid state light sources" not appearing in the specification, (see Def.'s Br. (Doc. 191) at 55, 61), Cree's argument fails for the purposes of summary judgment. There is no requirement that the exact terms appear in the specification. See Blue Calypso, LLC v. Groupon, Inc., 815 F.3d 1331, 1346 (Fed. Cir. 2016) ("[W]hen examining the written description for support for the claimed invention, we have held that the exact terms appearing in the claim 'need not be used in haec verba.'" (quoting Lockwood v. Am. Airlines, Inc., 107 F.3d 1565, 1572 (Fed. Cir. 1997))); Ariad Pharm., 598 F.3d at 1352; Eiselstein v. Frank, 52 F.3d 1035, 1038 (Fed. Cir. 1995) ("[T]he prior application need not describe the claimed subject matter in exactly the same terms as used in the claims"). Given that there is a disagreement between the parties' experts as to what a POSA would have understood to be claimed, this argument is thus without merit.

5. Written Description Conclusion

Taking the evidence in the light most favorable to OptoLum, the court finds that there is a genuine issue of material fact as to whether the '028 Patent is invalid for violating the written description requirement under § 112(a), given that OptoLum has submitted expert testimony and the '028 Patent prosecution history to demonstrate that a POSA would understand

the specification to disclose SSLs beyond LEDs.⁸ “The jury [is] entitled to hear the expert testimony and decide for itself what to accept or reject.” i4i Ltd. P’ship v. Microsoft Corp., 598 F.3d 831, 856 (Fed. Cir. 2010). The court will thus deny Cree’s motion for summary judgment as to the issue of whether the ‘028 Patent is invalid for violating the written description requirement.

C. Infringement of OptoLum’s Patents

Cree attacks OptoLum’s infringement contentions in two ways. First, Cree argues that the Generation 2.5 (“Gen 2.5”) Single Ring bulb does not infringe. (Def.’s Br. (Doc. 191) at 27.) Second, Cree argues that its Single Ring bulbs do not literally infringe the Patents. (Id. at 33.) And third, Cree contends that OptoLum cannot prevail on a doctrine-of-equivalents theory because Cree has submitted prior art “that would be ensnared by the broadening of the claim scope under the assertion of equivalents alleged by OptoLum.” (Id. at 38.) The court will first address the Gen 2.5 Single Ring bulb, then

⁸ OptoLum also argues that Cree is “simply recycle[ing]” arguments made two years ago. (Pl.’s Resp. (Doc. 213) at 26.) Cree correctly notes that this court never ruled on Cree’s prior motion for summary judgment on the validity of the ‘028 Patent based on the written description requirement, instead denying the motion without prejudice. (Doc. 169.) OptoLum’s argument has no bearing on this court’s opinion.

Cree's arguments as to literal infringement and the doctrine of equivalents.

1. **The Generation 2.5 Single Ring Bulbs Do Not Infringe**

Cree argues that OptoLum's expert admits that the products incorporating the Gen 2.5 Single Ring bulb do not infringe. OptoLum concedes that these products do not infringe. (Pl.'s Resp. (Doc. 213) at 7.) OptoLum, however, argues that, to the "extent that Cree contends that OptoLum's Infringement Contentions include model numbers, or SKUs, that are exclusively Gen 2.5 bulbs, OptoLum disputes this notion." (Id. at 7-8.)⁹ OptoLum argues that "other documents produced by Cree, and in particular Cree's revenue information cited in its Interrogatory Responses, identify the referenced SKUs as 'Gen 2.'" (Id. at 8.) The conflict therefore seems to be over Cree's grouping of products which contain the Gen 2.5 Single Ring bulbs.

Because OptoLum concedes that the Gen 2.5 bulbs do not infringe, the court will grant Cree's summary judgment motion on this issue, to the extent the referenced SKUs are in fact Gen 2.5 bulbs but will deny the motion to the extent a determination needs to be made as to which bulbs are considered Gen 2.5 bulbs. The court is not making a finding as to whether the particular SKUs are Gen 2.5 bulbs, Gen 2 bulbs, or a combination. That

⁹ An "SKU" is a number used to identify a product. (Def.'s Br. (Doc. 191) at 32 n.9.)

issue will be left for determination as part of any damages issue should the Gen 2 bulb be found to be infringing OptoLum's Patents.

2. The Remaining Single Ring Bulbs

Cree argues that its Single Ring products do not infringe under either a literal infringement theory or under the doctrine of equivalents. (Def.'s Br. (Doc. 191) at 33, 35.) The court will address each argument in turn.

Direct infringement occurs where "all steps of a claimed method are performed by or attributable to a single entity." Akamai Techs., Inc. v. Limelight Networks, Inc., 797 F.3d 1020, 1022 (Fed. Cir. 2015). A plaintiff may prove direct infringement by proving literal infringement or infringement under the doctrine of equivalents. Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1310 (Fed. Cir. 2005).

a. Literal Infringement

Cree contends, citing to the Joint Claim Construction Statement, that "[e]ach of the asserted claims of the '028 and '303 Patents requires the 'two plane' limitation," and that "OptoLum has not alleged literal infringement of the 'two plane' limitation for the Single Ring Accused Products nor has it offered proof of literal infringement of that limitation." (Def.'s Br. (Doc. 191) at 33-34.) Cree submits that OptoLum's expert on infringement "confirmed that he was offering an

infringement opinion only under the doctrine of equivalents.”

(Id.) Mr. Charles McCreary, OptoLum’s expert, testified to the following:

Q. So since we’re talking about the 60 watt LED replacement light bulb this is a single-ring analysis; isn’t that correct?

A. Yes, I believe so.

Q. And my question to you is is it your testimony that this limitation is met by the 60 watt single-ring bulb literally or under the Doctrine of Equivalence?

. . . .

A. I believe that a claim - this claim is met via the Doctrine of Equivalence as my counsels have explained it to me.

(Doc. 191-19 at 6.)¹⁰

OptoLum does not appear to respond to this argument. In considering a motion for summary judgment, the moving party bears the initial burden of demonstrating “that there is an absence of evidence to support the nonmoving party’s case.” Celotex Corp., 477 U.S. at 325. If the “moving party discharges its burden . . . , the nonmoving party then must come forward with specific facts showing that there is a genuine issue for trial.” McLean, 332 F.3d at 718-19 (citing Matsushita, 475 U.S.

¹⁰ The court notes that Mr. McCreary’s testimony is subject to a Daubert challenge from Cree, though Cree does not seem to challenge Mr. McCreary’s testimony that he opines solely on infringement under the doctrine of equivalents.

at 586-87). Here, Cree has met its burden of demonstrating that there is an absence of evidence to support OptoLum's case, and OptoLum, the nonmoving party, has not "come forward with specific facts showing that there is a genuine issue for trial."

Because there is no genuine issue of material fact that the Single Ring bulbs do not literally infringe, the court will grant Plaintiff's motion on this issue.

b. Doctrine of Equivalents & Ensnarement

Cree further argues that the defense of "ensnarement" prevents OptoLum from succeeding on a doctrine-of-equivalents ("DOE") infringement claim as to OptoLum's Single Ring bulbs. (Def.'s Br. (Doc. 191) at 38.) Cree contends that it identified prior art that would be "ensnared by the broadening of the claim scope under the assertion of equivalents alleged by OptoLum." (Id.) Ensnarement is the only ground upon which Cree challenges OptoLum's claim of infringement under the doctrine of equivalents at this stage.

It appears to the court that the relevant claim limitation of OptoLum's infringement contention is "a plurality of light emitting diodes . . . carried on said elongate member outer surface at least some of said light emitting diodes . . . being disposed in a first plane and others of said light emitting diodes . . . being disposed in a second plane not coextensive

with said first plane.” (See Doc. 191-21 at 3; Doc. 191-22 at 4.)

Under the doctrine of equivalents, “a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is ‘equivalence’ between the elements of the accused product or process and the claimed elements of the patented invention.” Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 21 (1997).

However, “[a] doctrine of equivalents theory cannot be asserted if it will encompass or ‘ensnare’ the prior art.” Jang v. Boston Sci. Corp., 872 F.3d 1275, 1285 (Fed. Cir. 2017) (citing DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 567 F.3d 1314, 1322 (Fed. Cir. 2009)). “This limitation is imposed even if a jury has found equivalence as to each claim element.” Id. (quoting DePuy Spine, 567 F.3d at 1323).

In other words, prior art can limit the range of permissible equivalents of a claim. The Federal Circuit has “described the ensnarement inquiry as one of determining the patentability of the hypothetical claim, rather than its validity. That is because ‘[t]he pertinent question’ is ‘whether that hypothetical claim could have been allowed by the PTO over the prior art’ as the PTO has never actually issued it.” Id. at

1285 n.5 (quoting Wilson Sporting Goods Co. v. David Geoffrey & Assocs., 904 F.2d 677, 684 (Fed. Cir. 1990)).

In other words, if the scope of equivalency asserted under the doctrine of equivalents would ensnare prior art, then the defendant cannot be found to have infringed under the doctrine of equivalents.

"A helpful first step in an ensnarement analysis is to construct a hypothetical claim that literally covers the accused device." DePuy Spine, 567 F.3d at 1324. "Next, the district court must assess the prior art introduced by the accused infringer and determine whether the patentee has carried its burden of persuading the court that the hypothetical claim is patentable over the prior art." Id. at 1325. "In short, [the court] ask[s] if a hypothetical claim can be crafted, which contains both the literal claim scope and the accused device, without ensnaring the prior art." Intendis [GMBH v. Glenmark Pharm. Inc., USA], 822 F.3d 1355, 1363 (Fed. Cir. 2016)].

UCB, Inc. v. Watson Labs. Inc., 927 F.3d 1272, 1283 (Fed. Cir. 2019). The Federal Circuit noted that "[a] '[h]ypothetical claim analysis is a practical method to determine whether an equivalent would impermissibly ensnare the prior art.'" Jang, 872 F.3d at 1285 (quoting Intendis, 822 F.3d at 1363); see also Ultra-Tex Surfaces, Inc. v. Hill Bros. Chem. Co., 204 F.3d 1360, 1364 (Fed. Cir. 2000) ("Hypothetical claim analysis provides a practical methodology for determining whether a claim that has been 'broadened' under the doctrine of equivalents impermissibly ensnares the prior art in its newly expanded form.").

“The burden of producing evidence of prior art to challenge a hypothetical claim rests with an accused infringer, but the burden of proving patentability of the hypothetical claim rests with the patentee.” Interactive Pictures Corp. v. Infinite Pictures, Inc., 274 F.3d 1371, 1380 (Fed. Cir. 2001) (citing Streamfeeder, LLC v. Sure-Feed Sys. Inc., 175 F.3d 974, 984 (Fed. Cir. 1999)).

Ensnarement “is to be determined by the court, either on a pretrial motion for partial summary judgment or on a motion for judgment as a matter of law at the close of the evidence and after the jury verdict.” Jang, 872 F.3d 1275 (quoting DePuy Spine, 567 F.3d at 1324). “[A] district court may hear expert testimony and consider other extrinsic evidence regarding: (1) the scope and content of the prior art; (2) the differences between the prior art and the claimed invention; (3) the level of ordinary skill in the art; and (4) any relevant secondary considerations.” DePuy Spine, 567 F.3d at 1324.

Here, OptoLum has not put forth a hypothetical claim, but Cree, as the “accused infringer,” has put forth several examples of prior art that it contends would be ensnared by any hypothetical claim. (See Def.’s Br. (Doc. 191) at 38-40; Doc. 191-21 at 4-5.) The “burden of providing patentability of the hypothetical claim” thus lies with OptoLum, the patentee. The prior art examples Cree cites – the NorLux Hex multi-chip LED

package, the Shark series multi-chip LED package from Opto Technology, and the Cao multi-chip LED package – are allegedly ensnared by the claim limitation reciting “a plurality of light emitting diodes . . . carried on said elongate member outer surface at least some of said light emitting diodes . . . being disposed in a first plane and others of said light emitting diodes . . . being disposed in a second plane not coextensive with said first plane.” (See Doc. 191-21 at 3-5; Doc. 191-22 at 4.)

In response, however, OptoLum argues that it is not “required to fashion a so-called hypothetical claim containing claim elements revised to reflect the scope of the new DOE claims.” (Pl.’s Resp. (Doc. 213) at 39.) This court agrees that the Federal Circuit has not mandated the application of a hypothetical claim analysis in determining whether the ensnarement defense applies. In Jang, the Federal Circuit explicitly states that “[t]he hypothetical claim analysis is not the only method in which a district court can assess whether a doctrine of equivalents theory ensnares the prior art.” Jang, 872 F.3d at 1285 n.4. Further, in Conroy v. Reebok Int’l, Ltd., the Federal Circuit noted that:

[w]hile the hypothetical claim analysis is a useful methodology because the clear step-by-step process facilitates appellate review, nothing in Wilson mandates its use as the only means for determining the extent to which the prior art restricts the scope of

equivalency that the party alleging infringement under the doctrine of equivalents can assert.

14 F.3d 1570, 1576 (Fed. Cir. 1994) (emphasis added); but see NLB Corp. v. PSI Pressure Sys. LLC, Civil Action No. H-18-1090, 2019 WL 6039932, at *4-5 (S.D. Tex. Nov. 14, 2019) (holding that the defendant was entitled to summary judgment when the plaintiff patentee failed to submit a proper hypothetical claim for consideration).

Here, both parties submitted expert testimony addressing ensnarement. (Compare Doc. 191-21 at 3-31, with Doc. 191-22 at 3-4.) Specifically, both experts addressed the obviousness of the use of multi-chip LED packages for illumination and whether the proffered prior art would be ensnared by the claim at issue.

Cree's expert, Dr. Eric Bretschneider, testifies in his expert report that "several packages described in prior-art printed publications were known to a POSA at the time of the alleged invention, whose use in lamps of prior-art grounds of invalidity described above would have been obvious to a POSA." (Doc. 191-21 at 3-4.) Dr. Bretschneider continues on to detail how each of the light source combinations offered as prior art would satisfy the claim at issue. For example, in discussing the NorLux package, he states:

With the NorLux package addition to the lamp combinations described above, the resulting combination would satisfy all limitations of the '303 claims 1-4 and 6-9 and '028 claims 1-3, 5-8, and

14-16. Regarding '303 claim 1 and '028 claim 1, the NorLux packages mounted on multiple faces of the lamps as described above would possess multiple planes of LED chips in each given package such that those chip arrangements, and, under OptoLum's theory, would satisfy "a plurality of light emitting diodes [solid state light sources] carried on said elongate member outer surface at least some of said light emitting diodes [solid state light sources] being disposed in a first plane and others of said light emitting diodes [solid state light sources] being disposed in a second plane not coextensive with said first plane."

(Id. at 11-12.)

In contrast, OptoLum's expert, Mr. York, testifies in his expert report that "the new art regarding so-called multi-chip packages identified by Dr. Bretschneider, namely the NorLux Hex, OptoTec Shark, and Cao packages, . . . does not disclose the equivalent structures identified by OptoLum in its DOE contentions or a motivation to combine with the other references relied upon by Cree." (Doc. 191-22) at 3-4.)

While OptoLum does not argue that the existing scope covers Cree's products, OptoLum argues Mr. York, "specifically opined that the claimed combinations [of the proposed prior art] do not disclose each element of the claims and ignore the numerous secondary considerations of nonobviousness at issue in this case." (Pl.'s Resp. (Doc. 213) at 42.)

OptoLum also submits an expert report from Dr. Daniel A. Steigerwald, produced in response to Dr. Bretschneider's amended expert report as to whether the three multi-chip LED products

listed above disclose the limitations. (Doc. 214-7.)

Dr. Steigerwald opined that none of the prior art combinations contemplated by Dr. Bretschneider would have been feasible or compatible with the "necessary infrastructure surrounding" an LED chip. (Id. ¶¶ 10-61.)

OptoLum argues that, because the parties' experts disagree as to whether Cree's proposed prior art, including the NorLux Hex multi-chip LED package, the Shark series multi-chip LED package from Opto Technology, and the Cao multi-chip LED package, (Doc. 191-21 at 4-5), ensnares the scope of OptoLum's claimed equivalent, there is a genuine issue of material fact and summary judgment is inappropriate. (Pl.'s Resp. (Doc. 213) at 41-42.) Cree replies that "[r]egardless of how it chooses to meet its burden (whether through a hypothetical claim or otherwise), OptoLum must carry its burden to show the prior art (identified by Cree) is not covered by the claim limitation-at-issue as expanded under the DOE assertion." (Def.'s Reply (Doc. 218) at 8.)

Given the conflicting expert testimony on the issue of ensnarement, and in light of the court's responsibility to determine ensnarement as a matter of law, this court finds it is unable to resolve this issue without an evidentiary hearing. Under DePuy Spine, "a district court may hear expert testimony and consider other extrinsic evidence regarding: (1) the scope

and content of the prior art; (2) the differences between the prior art and the claimed invention; (3) the level of ordinary skill in the art; and (4) any relevant secondary considerations.” 567 F.3d at 1324. The court therefore takes this issue under advisement and finds that either a pre-trial evidentiary hearing, or post-trial motions would better enable the court to make this determination. As directed in the terms of this Memorandum Opinion and Order, the parties shall submit briefs addressing their respective positions on the procedure most appropriate to resolve these factual issues, whether pre- or post-trial.

The court will thus deny Cree’s motion for summary judgment as to the issue of whether Cree’s Single Ring bulbs infringe under the doctrine of equivalents.

D. Pre-Suit Damages

Cree alleges OptoLum "failed to comply with 35 U.S.C. § 287(a) by failing to properly mark with the patent numbers 6,831,303 or 7,242,028 the BrightLife-800 product offered for sale," and that, "as a result, OptoLum is precluded by statute from seeking damages for the acts alleged to have been performed before Cree received actual notice that it was allegedly infringing the patents-in-suit – that is, the filing date of the original complaint." (Def.'s Br. (Doc. 191) at 63.)

1. Marking Background

35 U.S.C. § 287(a) provides that

Patentees, and persons making, offering for sale, or selling within the United States any patented article for or under them, or importing any patented article into the United States, may give notice to the public that the same is patented . . . by fixing thereon the word "patent" In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice. Filing of an action for infringement shall constitute such notice.

Therefore, if a "patentee makes or sells a patented article and fails to mark in accordance with § 287, the patentee cannot collect damages until it either begins providing notice or sues the alleged infringer – the ultimate form of notice – and then only for the period after notification or suit has occurred."

Arctic Cat Inc. v. Bombardier Recreational Prods. Inc., 950 F.3d

860, 864 (Fed. Cir. 2020). Section 287 necessarily only applies after a patent has been issued; thus, the relevant periods here are after December 14, 2004, for the '303 Patent, and July 10, 2007, for the '028 Patent. (See '303 Patent (Doc. 191-2) at 2; '028 Patent (Doc. 191-3) at 2.)

Section 287 does not apply, however, when "a patentee never makes or sells a patented article." Arctic Cat, 950 F.3d at 864. "Thus, a patentee who never makes or sells a patented article may recover damages even absent notice to an alleged infringer." Id.

2. The Parties' Arguments

OptoLum contends, and Cree agrees, that OptoLum never sold an LED bulb. (Compare Pl.'s Resp. (Doc. 213) at 10, with Def.'s Reply (Doc. 218) at 18.) Cree instead argues that OptoLum offered a bulb known as the BrightLife-800 bulb (the "BL-800") for sale "well after" the '303 and '028 Patents were issued and that therefore § 287 applies. In response, OptoLum argues it did not offer the BL-800 bulb for sale and that "Cree does not cite any authority interpreting or analogizing to the 'offering for sale' language of § 287," and "has thus wholly failed to carry its burden of demonstrating that it is entitled to summary judgment as a matter of law." (Pl.'s Resp. (Doc. 213) at 10.)

Further, the parties disagree as to whether OptoLum made the BL-800 such that § 287 would apply. Cree argues that OptoLum

produced the BL-800 but failed to mark it in accordance with § 287. (Def.'s Br. (Doc. 191) at 68.) OptoLum contends it "never even manufactured a product that could have been marked." (Pl.'s Resp. (Doc. 213) at 16.) OptoLum further argues that, while it did make a prototype of the BL-800, "it did so before the patents issued and thus before any obligation to mark could have arisen, and never manufactured or fabricated, an actual bulb for sale." (Id.)

Because Cree relies on screenshots of archived websites to support its arguments, the court will first address the admissibility of that evidence. The court will then turn to whether there is a genuine issue of material fact as to whether OptoLum offered for sale and/or produced the BL-800 during the relevant time.

3. Admissibility of Cree's Evidence

Cree submits five screenshots of archived web pages from the WayBack Machine internet archive, from between 2006 and 2012, each appearing to contain advertisements or links for the BL-800. (See Docs. 191-11, 191-12, 191-13, 191-14, 191-15.) OptoLum argues that these are inadmissible hearsay, given that Cree "provides no evidence as to their origin" and further has "offered no evidence from the Internet Archive that maintains the 'WayBack Machine' to support the authenticity of the content

represented by these screenshots.” (Pl.’s Resp. (Doc. 213) at 21-22.)

In reply, Cree argues the court should take judicial notice of the screenshots. (Def.’s Reply (Doc. 218) at 17-18.)

Materials submitted at summary judgment must be presented in a form admissible in evidence. Fed. R. Civ. P. 56(c)(1)(B), (c)(2), (c)(4). “[H]earsay evidence, which is inadmissible at trial, cannot be considered on a motion for summary judgment.” Md. Highways Contractors Ass’n v. Maryland, 933 F.2d 1246, 1251 (4th Cir. 1991). And a court may take judicial notice of facts that “can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.” Fed. R. Evid. 201.

The district court in Pohl v. MH Sub I, LLC, 332 F.R.D. 713 (N.D. Fla. 2019), as cited by Cree, (Def.’s Reply (Doc. 218) at 13), observed that “[n]umerous courts including [the Federal Circuit, and district courts in Florida, California, Michigan, Massachusetts, and Oregon], have taken judicial notice of web pages available through the WayBack Machine.” Id. at 716 (collecting cases).

Rule 56(c)(2) allows a party to object to a fact by asserting “the material cited to support or dispute a fact cannot be presented in a form that would be admissible in evidence.” As Pohl describes, there are several ways these

screenshots could be admissible, therefore, the court finds the screenshots may be considered under Rule 56(c)(2) and will consider them in its analysis, especially given Plaintiff has not provided a good-faith basis to challenge the authenticity of these screenshots for the purposes of summary judgment.¹¹

Because the court finds Pohl persuasive and thus finds the WayBack internet archive screenshots are admissible, the court now turns to the issue of whether OptoLum actually offered the BL-800 bulbs for sale.

4. Whether the BL-800 Bulbs were Offered for Sale

Even considering the screenshots, OptoLum still contends that Cree fails to meet its burden of demonstrating there is no genuine issue of material fact that OptoLum offered the BL-800 bulb for sale. (Pl.'s Resp. (Doc. 213) at 10.)

OptoLum submits testimony from Dry that "[t]he BL-800 was never offered for sale as a finished product," and "[t]he BL-800 was never manufactured as a finished product." (Dry Decl. (Doc. 214-1) ¶¶ 3-4.)

OptoLum also cites other courts' construction of 35 U.S.C. § 271 as support for its argument that it never offered the BL-800 for sale. (Pl.'s Resp. (Doc. 213) at 10.) 35 U.S.C. § 271(a)

¹¹ The fact the court finds the screenshots "could be admissible" does not mean they are admitted. Admissibility at trial is dependent upon the foundation laid at that time.

provides that “[e]xcept as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.” OptoLum argues that the Federal Circuit has construed the “offer to sell” language in § 271(a) to be consistent with traditional contract law. (Pl.’s Resp. (Doc. 213) at 11 (citing Rotec Indus., Inc. v. Mitsubishi Corp., 215 F.3d 1246 (Fed. Cir. 2000)).) Therefore, OptoLum argues, under traditional contract law, an “offer” must bestow upon the offeree the power to accept the offer. (Id. at 11-12.)

The court will consider whether the screenshots and Dry’s activities related to the BL-800 qualify as “offering for sale” under the statute.

a. Internet Marketing

Regarding the screenshots, based on traditional contract law, OptoLum argues, any marketing efforts on its website that did not “include specific terms or sufficient definiteness, such as price, quantity, delivery, and terms of payment, as required by common-law principles of contract law, do not rise to the level of an offer to sell,” and further, that advertisements are not offers; therefore, there was never an offer for sale within the meaning of the marking statute. (Id. at 13-15, 17.)

Under the Second Restatement of Contracts, "Advertisements of goods by display, sign, handbill . . . are not ordinarily intended or understood as offers to sell. The same is true of catalogues, price lists and circulars, even though the terms of suggested bargains may be stated in some detail." Restatement (Second) of Contracts § 26, cmt. b. Further, "[o]nly an offer which rises to the level of a commercial offer for sale, one which the other party could make into a binding contract by simple acceptance (assuming consideration), constitutes an offer for sale under § 102(b) [another patent statute dealing with offers to sell]." Grp. One, Ltd. v. Hallmark Cards, Inc., 254 F.3d 1041, 1048 (Fed. Cir. 2001).

The Federal Circuit has also "note[d] in passing that contract law traditionally recognizes that mere advertising and promoting of a product may be nothing more than an invitation for offers, while responding to such an invitation may itself be an offer." Id. In interpreting a different patent statute,¹² the Federal Court held that "[o]nly an offer which rises to the level of a commercial offer for sale, one which the other party

¹² Hallmark Cards dealt with 35 U.S.C. § 102, which states that "[a] person shall be entitled to a patent unless . . . the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention" (emphasis added).

could make into a binding contract by simple acceptance (assuming consideration), constitutes an offer for sale” Id. Given that the Federal Circuit has not interpreted “offer for sale” under § 287, the court finds that these rules offer guidance in determining whether issues of fact that OptoLum offered the BL-800 for sale exist.

Two of the screenshots, one from June 19, 2008, and one from February 21, 2008, contain the following concerning the BL-800: “The . . . BrightLife800, and other OptoLum lamps offer original equipment manufacturers the opportunity to incorporate LED lighting into the full spectrum of lighting applications . . . email info@optolum.com to discuss your application.” (Doc. 191-11 at 2; Doc. 191-24 at 2.) Other screenshots, one from November 27, 2007, and one from December 23, 2010, appear to show links to the BL-800. (See Doc. 191-12 at 2; Doc. 191-14 at 2.) And two others, one from October 25, 2005, and one from October 21, 2006, display a photo of what is presumably the BL-800 bearing the words “PATENT PENDING OPTOLUM” along with a description of the BL-800 and its capabilities. (See Doc. 191-13 at 2; Doc. 191-25 at 2; 191-26 at 2.) The court finds that these screenshots do not demonstrate, as a matter of law, that OptoLum offered the BL-800 for sale.

Further, in response, OptoLum submits a declaration from Dry, in which he states, "[t]he BL-800 was never offered for sale as a finished product." (Dry Decl. (Doc. 214-1) ¶ 3.)

Given Dry's deposition, as well as the lack of any terms that would tend to rise to the level of a commercial offer for sale, the court finds that there is a genuine issue of material fact as to whether the posts online regarding the BL-800 constituted advertisements or offers for sale.

b. Dry's Marketing

Cree also argues that Dry "continuously attempted to sell the product and testified that those bulbs were ready for shipment in limited quantities," and that he "testified that people were interested in buying the product, and that there were discussion about volume quantities." (Def.'s Reply (Doc. 218) at 18.) Cree contends that "[t]hese continuous solicitation efforts, coupled with having made the patented article, triggered the marking statute." (Id. at 19.)

Cree submits Dry's deposition, during which he testifies that "[w]e had people interested in buying, but not in volume," and that "[w]e had people talking about volume," but that no contracts were ever signed. (Dry Dep. (Doc. 191-7) at 3, 5.) Cree also submits a press release from May 2, 2003, which discusses the BL-800 and states that Dry would be attending a lighting industry fair. It also urged its audience to "check out

OptoLum's website." (Doc. 191-10 at 2.) However, this press release predates the issuance of the '303 Patent and is therefore irrelevant to this court's analysis of whether OptoLum offered the BL-800 for sale during the relevant time period.

In response, OptoLum submits Dry's declaration, in which he states, "[t]he BL-800 was never offered for sale" (Dry Decl. (Doc. 214-1) ¶ 3.)

Taking the evidence in the light most favorable to OptoLum, Cree has not demonstrated "that there is an absence of evidence to support the nonmoving party's case." Celotex Corp., 477 U.S. at 325. Summary judgment should not be granted if a "reasonable jury could return a verdict in favor for the nonmoving party on the evidence presented." McLean, 332 F.3d at 719 (citing Liberty Lobby, 477 U.S. at 247-48). Here, a reasonable jury could find, based on Dry's testimony, that Dry's marketing efforts did not trigger § 287(a) and thus that § 287(a) did not apply.

c. Whether the BL-800 was Produced During the Relevant Period

Finally, Cree points to the photos in its screenshots of the BL-800 as evidence that it was produced and therefore required to bear the "required numbers of the '303 and '028 Patents." (Def.'s Br. (Doc. 191) at 68.) Cree contends that under § 271(a), "the mere act of making a patented product constitutes an act of infringement"; therefore, "[g]iven the

plain meaning of the statute, 'making' the 'patented article,' i.e., the BL-800 bulb, triggers the marking statute." (Def.'s Reply (Doc. 218) at 18.)

While these photos could be found online as late as 2006, there is no indication of when these photos were taken and therefore no indication of whether OptoLum "produced" the BL-800 after the time it received the '303 Patent. Indeed, that the photograph displays "PATENT PENDING OPTOLUM" tends to diminish Cree's argument, as it would appear that the BL-800 pictured was potentially produced prior to the '303 Patent being issued. That the photos themselves were available after the '303 Patent was issued is immaterial to this analysis; what matters is when the BL-800 was produced for the purposes of whether it was "made" during the relevant time period when Plaintiff would have had to mark it with the patent number in order to comply with the marking statute.

Finally, Cree points to an excerpt from Dry's deposition that, it argues, shows "OptoLum was offering for sale the BL-800 and had interested buyers." (Def.'s Br. (Doc. 191) at 67.) In that exchange, Dry testifies to the following:

Q. Well, did OptoLum ever have manufacturing capacity to build the BL-800?

A. We do today.

. . . .

Q. And when did you obtain the capacity to build it in-house?

A. I'd say over the last two years.

Q. Since 2016?

A. Yes.

Q. When you say you have the capacity to build it in-house, you never had any orders of the BL-800, did you?

A. We had people interested in buying, but not in volume. So it didn't make sense for us to do it.

. . . .

Q. So nobody willing to order a volume that would make it worthwhile doing what needs to be done to build the thing? Is that accurate?

A. Not wholly accurate.

Q. Okay. What is inaccurate about it?

A. We had people talking about volume.

(Dry Dep. (Doc. 191-7) at 4-5.) The court does not find that this exchange supports Cree's argument that there is no genuine issue of material fact that OptoLum offered for sale the BL-800 bulb. There is no indication of when OptoLum "had people interested in buying," nor that that means OptoLum offered the bulb for sale; it is entirely possible that people were interested in buying but OptoLum was not interested in selling.

In response, OptoLum submits Dry's declaration, in which he states that "[w]hile OptoLum made a prototype of an LED bulb called the BL-800, it did so before the Asserted Patents

issued.” (Dry Decl. (Doc. 214-1) ¶ 5.) The court finds that this creates a genuine issue of material fact that should be resolved at trial.

d. **Pre-Suit Damages Conclusion**

Because OptoLum has shown that there is a genuine issue of material fact as to whether it made and/or offered the BL-800 for sale during the relevant time periods for the purpose of § 287, the court will deny Cree’s motion for summary judgment on this issue.

IV. CONCLUSION

For the foregoing reasons, the court finds that Cree’s partial motion for summary judgment should be granted in part and denied in part.

IT IS THEREFORE ORDERED that Defendant’s Partial Motion for Summary Judgment, (Doc. 190), is **GRANTED** with respect to Cree’s argument that the Gen 2.5 bulbs do not infringe and to Cree’s argument that the Single Ring bulbs do not literally infringe. Defendant’s Partial Motion for Summary Judgment, (Doc. 190), is **DENIED** as to the remaining claims.

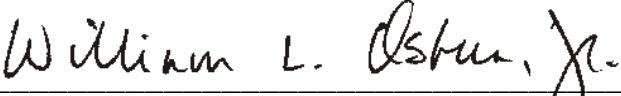
IT IS FURTHER ORDERED that Plaintiff’s Motion and Memorandum for Leave to File a Surreply, (Doc. 220), is **GRANTED**.

IT IS FURTHER ORDERED that the parties shall file briefs concerning the most appropriate method to address the issue of ensnarement, either in a pre-trial evidentiary hearing or after

trial. Parties' briefs shall be no longer than seven (7) pages in length and shall be filed within ten (10) days after the issuance of this Memorandum Opinion and Order.

IT IS SO ORDERED.

This the 28th day of September, 2020.


United States District Judge