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**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA**

LARGAN PRECISION CO., LTD.,

Plaintiff,

vs.
SAMSUNG ELECTRONICS CO.,
LTD., et al.,

Defendants.

CASE NO. 13cv2740 DMS (NLS)
ORDER CONSTRUING CLAIMS

AND ALL RELATED
COUNTERCLAIMS.

This matter came before the Court for a claim construction hearing on November 24, 2014. Joseph Reid and Kimberly Kennedy appeared on behalf of Largan Precision Co., Ltd., and Gregory Arovas, David Higer and Edward Donovan appeared on behalf of the Samsung entities. After a thorough review of the parties’ claim construction briefs and all other material submitted in connection with the hearing, the Court issues the following order construing the disputed terms of the patents at issue in this case.

**I.
BACKGROUND**

There are eight patents at issue in this case: United States Patents Numbers 7,262,925 (“the ‘925 Patent”), 7,394,602 (“the ‘602 Patent”), 7,898,747 (“the ‘747 Patent”), 8,154,807 (“the ‘807 Patent”), 8,284,291 (“the ‘291 Patent”), 8,508,860 (“the

1 '860 Patent"), 8,670,190 ("the '190 Patent") and 8,670,191 ("the '191 Patent").

2 According to the parties' joint status report:

3 [t]he Patents-in-Suit claim designs for an optical lens system or imaging
4 lens assembly. Among other things, each optical lens system or imaging
5 lens assembly is comprised of a number of individual lenses, called "lens
6 elements," that are arranged along a common axis. The Patents-in-Suit
7 can be divided into three-lens and five-lens systems. The three-lens
8 patents are the '925, '602, '747 and '807 patents. The five-lens patents are
9 the '291, '860, '190, and '191 patents. Whether directed at three-lens or
10 five-lens systems, the basic objective is to improve image quality at the
11 image capture location (e.g., image sensor or film) by, for example,
12 correcting for the aberrations or imperfections that occur as light passes
13 through a lens. The individual lens elements can have different
14 compositions and shapes in order to optimize image quality.

15 Each of the eight Patents-in-Suit claim specific optical properties for
16 a lens design. These designs are defined by common features: the number
17 of lens elements, the shape of each lens element, and the optical values
18 that describe, for example, how each lens element bends or disburses light.

19 (Joint Status Report at 2-3.)

20 II.

21 DISCUSSION

22 Claim construction is an issue of law, *Markman v. Westview Instruments, Inc.*,
23 517 U.S. 370, 372 (1996), and it begins "with the words of the claim." *Nystrom v.*
24 *TREX Co., Inc.*, 424 F.3d 1136, 1142 (Fed. Cir. 2005) (citing *Vitronics Corp. v.*
25 *Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Generally, those words are
26 "given their ordinary and customary meaning." *Id.* (citing *Vitronics*, 90 F.3d at 1582).
27 This "is the meaning that the term would have to a person of ordinary skill in the art
28 in question at the time of the invention." *Id.* (quoting *Phillips v. AWH Corp.*, 415 F.3d
1303, 1313 (Fed. Cir. 2005)). "The person of ordinary skill in the art views the claim
term in the light of the entire intrinsic record." *Id.* Accordingly, the Court must read
the claims "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)). In
addition, "the prosecution history can often inform the meaning of the claim language
by demonstrating how the inventor understood the invention and whether the inventor

1 limited the invention in the course of prosecution, making the claim scope narrower
2 than it would otherwise be.” *Id.* (quoting *Phillips*, 415 F.3d at 1318).

3 Pursuant to Patent Local Rule 4.2.a, the parties identified the following five
4 issues for the claim construction hearing:

5 (1) whether the Court should correct the use of “□” in the claims of the ‘925
6 Patent;

7 (2) whether the Court should correct the formula “ $-1.5 < f_4/f_5 \leq 0.79$ ” in the ‘190
8 Patent;

9 (3) how to construe the phrase “at least one inflection point formed on the object-
10 side and image-side surfaces” in the ‘807 Patent;

11 (4) how to construe the term “plastic,” which appears in the ‘602 Patent, the ‘807
12 Patent and the ‘860 Patent, and

13 (5) whether the Court should construe certain preambles as limiting.¹

14 **A. Correction**

15 The parties agree the Court has the power to make corrections to a patent under
16 certain circumstances. First, the error must be evident from the face of the patent.² *H-*
17 *W Tech., L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1333 (Fed. Cir. 2014) (quoting

19 ¹ It appeared from the briefing that the parties had resolved the issue of the
20 preambles. However, at oral argument, it appeared there may be still be an issue.
21 Counsel agreed to meet and confer in an effort to resolve the issue. If those efforts are
unsuccessful, counsel should notify the Court as soon as possible so the issue can be
resolved.

22 ² Samsung’s recitation of this first element requires that the nature of the error
23 be evident from the face of the patent. Although there is support for this position, *see*
24 *Novo Industries L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357 (Fed. Cir. 2003)
(stating district court did not have authority to correct patent because “the nature of the
25 error is not apparent from the face of the patent.”), the more precise recitation of the test
26 asks whether the error is evident from the face of the patent, not whether the nature of
27 the error is evident. For instance, in *CBT Flint Partners, LLC v. Return Path, Inc.*, 654
28 F.3d 1353 (Fed. Cir. 2011), the claim recited a computer being programmed to “detect
analyze” e-mail communication. *Id.* at 1356. Although it was clear from the face of the
patent that this was an error, the nature of the error was unclear, *i.e.*, it was unclear
whether “detect” or “analyze” was supposed to be deleted, or if the word “and” was
supposed to be inserted between those two words. *Id.* at 1358-59. Nevertheless, the
court held the error was correctable.

1 *Grp. One, Ltd. v. Hallmark Cards, Inc.*, 407 F.3d 1297, 1303 (Fed. Cir. 2005)). This
 2 includes “obvious minor typographical and clerical errors in patents.” *Novo Industries*,
 3 350 F.3d at 1357. If that threshold requirement is met, the court “can correct a patent
 4 only if (1) the correction is not subject to reasonable debate based on consideration of
 5 the claim language and the specification and (2) the prosecution history does not
 6 suggest a different interpretation of the claims.” *Id.* All of these “determinations must
 7 be made from the point of view of one skilled in the art.” *Ultimax Cement*
 8 *Manufacturing Corp. v. CTS Cement Manufacturing Corp.*, 587 F.3d 1339, 1353 (Fed.
 9 Cir. 2009)

10 1. The ‘925 Patent

11 In this case, Largan asserts there is an error in the ‘925 Patent, namely the
 12 inclusion of “□” in claim 1.³ Samsung agrees the inclusion of “□” makes the claim
 13 unintelligible, but disagrees it is an error evident from the face of the patent.

14 The “□” first appears as part of equations set out in the claims. Those equations
 15 are also set out in the specification, but instead of having a “□,” some of them have a

16
 17 ³ Claim 1 provides:

18 An image lens array, from object side to image side, comprising: a first lens, a
 19 second lens, and a third lens; wherein

20 the first lens with positive refracting power has a front convex surface and a back
 21 concave surface, a radius of curvature of the front convex surface and that of the back
 22 concave surface of the first lens are: L1R1 and L1R2 that satisfy an equation as:
 $\square L1R1/L1R2 \square < 0.5$, the first lens is provided with aspherical surface;

23 an aperture is arranged behind the first lens, for controlling brightness of the
 24 image lens array;

25 the second lens having a front concave surface and a back convex surface, is
 26 located behind the aperture and has a negative refracting power, and the second lens is
 27 also provided with aspherical surface; and

28 the third lens with a front convex surface and a back concave surface, is located
 behind the second lens and has a positive power, a radius of curvature of the front
 convex surface and that of the back concave surface of the third lens are: L3R1 and
 L3R2 that satisfy an equation as: $\square R3R1/L3R2 \square > 0.3$, the third lens is provided with
 aspherical surface;

focal lengths of the first, second and third lenses are: f1, f2 and f3, and a focal
 length of the image lens array is f, these four focal lengths are controlled to satisfy the
 following conditions:

1.5 > $\square f/f1 \square > 1.0$

1.2 > $\square f/f2 \square > 0.7$

1.2 > $\square f/f3 \square > 0.3$.

1 “|.”⁴ Specifically, the equations $\square L1R1/L1R2 \square < 0.5$, $\square R3R1/L3R2 \square > 0.3$ ⁵ and
 2 $1.5 > \square f/f1 \square > 1.0$ all have a “ \square ” instead of a “|” in the claims.⁶ On the face of the patent
 3 itself, the inclusion of the “ \square ” appears to be an error.

4 Largan asserts this error can be corrected by replacing the “ \square ” with the absolute
 5 value sign, “|.” However, the Court can do so only if “(1) the correction is not subject
 6 to reasonable debate based on consideration of the claim language and the specification
 7 and (2) the prosecution history does not suggest a different interpretation of the claims.”
 8 *Novo Industries*, 350 F.3d at 1357.

9 As explained above, the claim language and the specification support Largan’s
 10 proposed correction.

11 Turning to the prosecution history, in the application the equations in the original
 12 claims included absolute value signs rather than “ \square .” (*See* Decl. of Kimberly Kennedy
 13 in Supp. of Largan’s Opening Claim Construction Br. (“Kennedy Decl.”), Ex. 10 at
 14 218.) In response to the first office action, the applicant amended the original claims
 15 and also replaced the absolute value signs with the “ \square .” (*Id.* at 237.)⁷ Largan asserts
 16 the inclusion of the “ \square ” was a “typographical error” that was simply carried through
 17 to the issued patent. In support of this assertion, Largan explains that the “ \square ” was not
 18 underlined to indicate additional text, as required by PTO regulations. It also points to
 19 claim 6, which is described as “original” in the amendment, even though it, too,
 20 included the “ \square ” instead of the absolute value sign. (*Id.* at 239.)

21 _____
 22 ⁴ Largan asserts the “|” as used in the specification is the sign for absolute value.
 23 (*See* Largan’s Opening Claim Construction Br. at 11 n.9.)

24 ⁵ This equation has another alleged error: It reads “R3R1” where the
 25 specification reads “L3R1.” In contrast to the “ \square ,” the parties agree “R3R1” should be
 26 construed as “L3R1.” (*See id.* at 11 n.10.)

27 ⁶ The equations “ $1.2 > \square f/f2 \square > 0.7$ ” and “ $1.2 > \square f/f3 \square > 0.3$ ” also appear in the
 28 specification, but do not have a “|” in place of every “ \square .” (*See* ‘925 Patent at 4:15-20.)

⁷ The first office action found no fault with the absolute value signs, so the
 replacement of those signs with the “ \square ” does not appear to be in response to the office
 action.

1 Samsung does not dispute this series of events, but instead argues the
2 replacement of the absolute value signs with the “□” was not an error. However,
3 Samsung fails to explain why the applicant would replace the absolute value signs with
4 a meaningless “□.” Absent a valid reason, the replacement of the absolute value signs
5 with the “□” must have been an error.

6 Samsung argues even if the inclusion of the “□” was an error, “Largan cannot
7 show the substitution that it proposes now is the only possible correction.” (Samsung’s
8 Opening Claim Construction Br. at 21.) However, Largan need not make that showing
9 before a correction may be made. Largan need only show “(1) the correction is not
10 subject to reasonable debate based on consideration of the claim language and the
11 specification and (2) the prosecution history does not suggest a different interpretation
12 of the claims.” *Novo Industries*, 350 F.3d at 1357. Those requirements are met in this
13 case, and thus the Court corrects the ‘925 Patent in accordance with Largan’s proposal.

14 2. The ‘190 Patent

15 Largan also requests that the Court make a correction in the ‘190 Patent.
16 Specifically, Largan requests the Court change the equation “ $-1.5 < f_4/f_5 \leq 0.79$ ” in claim
17 21 to “ $-1.5 < f_4/f_5 \leq -0.79$.” As with the ‘925 Patent, Largan argues the error in the
18 equation is evident from the face of the patent and the other two requirements for
19 correction are met. Samsung again disputes that the error is evident from the face of the
20 patent.

21 Here, again, the Court agrees with Largan. Claim 21 states the fourth lens
22 element, f_4 , has a “positive refracting power,” while the fifth lens element, f_5 , has a
23 “negative refracting power.” (‘190 Patent at 13:32-34.) As Largan explains in its
24 briefs, a positive number divided by a negative number will always result in a negative
25 number. Samsung does not dispute this principle, but argues the inclusion of a (-) sign
26 is not necessary to make the equation correct because a negative number will always
27 be less than the 0.79 set out in the equation. However, Samsung’s argument ignores the
28 “equal to” portion of the equation. Because a positive number divided by a negative

1 number can never equal a positive number, the error is evident from the face of the
2 patent.

3 Moreover, Largan's proposed correction is not subject to reasonable debate based
4 on the claim language, specification and prosecution history. As explained above, the
5 claim language supports Largan's proposed construction because a positive number
6 divided by a negative number can never equal a positive number. The inclusion of a (-)
7 sign is also supported by the specification. As Largan points out, Figure 13 describes
8 f_4/f_5 as -0.79, as does the detailed description of the invention. (*See id.* at 7:61-64.)
9 The prosecution history also provides support for Largan's proposed correction. (*See*
10 Kennedy Decl., Ex. 12 at 272, 276) (including (-) sign in equation). In light of the
11 claim language, the specification and the prosecution history, the Court corrects the
12 '190 Patent in accordance with Largan's proposal.

13 **B. "At least one inflection point formed on the object-side and image-side**
14 **surfaces"**

15 The next issue concerns the phrase "at least one inflection point formed on the
16 object-side and image-side surfaces" in the '807 Patent. This phrase is found in claims
17 2 and 20. Both parties ask the Court to construe this phrase according to its plain and
18 ordinary meaning, but they provide different interpretations of the plain and ordinary
19 meaning. Largan asserts the Court should construe the phrase as "at least one inflection
20 point formed on at least one of the object-side and image-side surfaces." In other
21 words, Largan asserts the phrase should be construed to require at least one inflection
22 point on at least one side of the lens. Samsung argues the phrase should require that
23 there be at least one inflection point on each side of the lens.

24 As always, the starting point for construing this phrase is the claim language.
25 The claims recite "at least one inflection point formed on the object-side and image-side
26 surfaces." The use of the word "and" and the plural "surfaces" supports Samsung's
27 proposed construction that there be an inflection point on each side of the lens.
28 Largan's proposed construction does not find support in the claim language. Indeed,

1 Largan’s proposed construction requires inserting the phrase “at least one of” into the
2 claim language.

3 Largan asserts the specification supports the insertion of this language into the
4 claims. Specifically, it points to language in the specification that recites the formation
5 of at least one inflection point “on one of the both surfaces,” (‘807 Patent at 2:19, 6:3,
6 7:14), and a third lens element “with at least one inflection point[.]” (*Id.* at 3:11-12,
7 4:64.) However, neither of those citations supports Largan’s position. On the contrary,
8 the first set of citations indicates that Largan knew how to describe a lens element with
9 an inflection point on only one side of the lens. Largan’s failure to include that
10 language in claims 2 and 20 counsels against inserting that language, not for it. The
11 language in the second set of citations also fails to support Largan’s proposed
12 construction as it recites “at least one inflection point” without regard to its placement
13 on either or both sides of the lens.

14 Failing support in these portions of the specification, Largan argues Samsung’s
15 proposed construction cannot be correct because it would read out a majority of the
16 preferred embodiments. However, as Samsung points out, “the claims of the patent
17 need not encompass all disclosed embodiments.” *TIP Systems, LLC v. Phillips &*
18 *Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008) (citing *PSN Ill., LLC v.*
19 *Ivoclar Vivadent, Inc.*, 525 F.3d 1159, 1167 (Fed. Cir. 2008)). Accordingly, this
20 argument does not warrant adoption of Largan’s proposed construction.

21 Contrary to the evidence cited by Largan, the evidence cited by Samsung
22 supports its proposed construction. The specification recites several embodiments
23 wherein the third lens has “at least one inflection point formed on the object-side
24 surface 131 and the image-side surface 312[.]” (‘807 Patent at 8:29-31.) (*See also id.*
25 at 10:4-6, 14:29-30, 15:59-60.) This language is most like the language found in the
26 claims, and stands in stark contrast to Largan’s cited evidence, which reflects an
27 awareness of how to describe an inflection point on only one side of the lens.
28 (*Compare id.* at 2:18-19 *with id.* at 8:29-31.) In light of this evidence, the Court adopts

1 Samsung's plain and ordinary meaning of the phrase "at least one inflection point
2 formed on the object-side and image-side surfaces."

3 **C. "Plastic"**

4 The final term at issue is "plastic." This term appears in claims 1 and 2 of the
5 '602 Patent, claims 2 and 22 of the '807 Patent and claim 2 of the '860 Patent. Largan
6 asserts this term needs no construction and should be given its plain and ordinary
7 meaning. In its briefs, Samsung asserted it should be construed as "synthetic material
8 distinct from glass." At the hearing, Samsung offered an alternative from the Academic
9 Press Dictionary of Science and Technology, which defines "plastic" as "any of various
10 synthetic or organic materials that can be molded or shaped, generally when heated, and
11 then hardened into a desired form; for example, polymers, resins, and cellulose
12 derivatives."

13 Although Largan would prefer not to specifically define the term "plastic," it
14 appears the parties do not dispute that a person of ordinary skill in the art would define
15 the term consistent with the dictionary definition. Accordingly, the Court adopts the
16 dictionary definition set out above for the term "plastic."

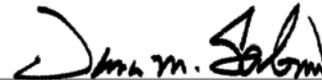
17 **III.**

18 **CONCLUSION**

19 For the reasons stated above, the disputed terms are interpreted as set forth in this
20 Order.

21 **IT IS SO ORDERED.**

22 DATED: December 9, 2014

23 

24 HON. DANA M. SABRAW
25 United States District Judge