IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

COMMISSARIAT À L'ENERGIE ATOMIQUE,	:	
Plaintiff,	:	
v.	:	Civil Action No. 03-484-MPT
SAMSUNG ELECTRONICS CO., et al.,	:	CONSOLIDATED CASES
Defendants.	:	

MEMORANDUM ORDER

INTRODUCTION

This is a patent infringement case. On May 19, 2003 Commissariat à l'Energie Atomique ("CEA") filed a complaint against Samsung Electronics Co., Ltd. ("Samsung"), and others, for infringement of United States Patent Nos. 4,701,028 ("the '028 patent") and 4,889,412 ("the '412 patent") (collectively "the patents-in-suit").[1] The '028 patent and the '412 patent are directed to technology involving the design and manufacture of liquid crystal displays ("LCDs") and related products.[2] An LCD is a type of flat panel display that is used in products such as computer monitors.[3]

THE COURT'S CLAIM CONSTRUCTION

At Wilmington, this 3rd day of October, 2007, having reviewed the papers

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[1] D.I. 1. CEA has since filed amended complaints, but the patents-in-suit remain the same. *See* D.I. 371; D.I. 373; D.I. 379.

[2] D.I. 1 at 2.

[3] *Id.*

submitted with the parties' proposed claim constructions, heard oral argument, and having considered all of the parties arguments (whether or not explicitly discussed below);[4]

IT IS ORDERED, ADJUDGED, and DECREED that the disputed claim language in asserted claims of the patents-in-suit, as identified by the parties, shall be construed consistent with the tenets of claim construction set forth by the United States Court of Appeals for the Federal Circuit in *Phillips v. AWH Corp.*,[5] as follows:

1. electrically controlled birefringence type ('028 patent); electrically controlled birefringence effect ('412 patent)[6]

CEA's proposed construction is: "a category of liquid crystal cells distinguished from the helical nematic type (*i.e.*, the twisted nematic type) in which the molecules have a homeotropic direction when no voltage is applied between the electrodes."

Samsung's proposed construction is: "a type of liquid crystal cell wherein the liquid crystal molecules have a homeotropic structure in the absence of an electric field, and when the cell is excited the molecules are all inclined in the same direction to form an angle with the homeotropy direction."

The court adopts CEA's proposed construction.

The parties agree that the proper construction of this term includes reference to the state when no voltage is applied. Samsung's proposed construction also includes reference to the cell state when voltage is applied.

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[4] During oral argument the parties agreed on the constructions of several claim terms. The court indicates those claim terms, below, and adopts the constructions upon which there was agreement without additional analysis.

[5] 415 F.3d 1303 (Fed. Cir. 2005).

[6] At oral argument the parties agreed that these two terms should be given the same construction. *See* D.I. 1053 at 76-78.

Samsung argues that CEA's proposed construction improperly excludes TN devices. CEA counters that in a French patent application, from which the '028 patent claims priority date, and in a October 28, 1985 Prior Art Statement submitted to the United States Patent and Trademark Office ("PTO") in connection with the prosecution of the '028 patent, the patent applicants specifically distinguished the claimed inventions from twisted helical nematic type cells. CEA also argues that Samsung's proposed construction includes the unwarranted limitation that "when the cell is excited the molecules are all inclined in the same direction to form an angle with the homeotropy direction."

The court agrees with CEA that during the prosecution of the French priority application, and during the prosecution of the '028 patent before the PTO, the inventors disavowed coverage of TN cells.[7]

The specifications also make clear that the liquid crystal cells addressed in the patents-in-suit are not TN cells. The '028 patent specification describes differences between known liquid crystal cells of the electronically controlled birefringence (ECB) type and those of the helical nematic, or twisted nematic, (TN) type.[8] That specification, however, states: "[m]ore specifically, according to the invention, the cell is of the electrically controlled birefringence type . . . ."[9]

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[7] *See* D.I. 719, Ex. H (French priority application and translation thereof) ("[Fergason] concerns twisted nematic liquid crystal cells and absolutely not cells with electrically controlled birefringence. . . ."); D.I. 719, Ex. J (Prior Art Statement of October 28, 1985, at 2) ("[Fergason] relates to spiral nematic liquid crystal cells and not to electrically controlled birefringence cells.").

[8] '028 patent, 1:13-53.

[9] '028 patent, 2:24-25. Similarly, the '412 patent begins with the statement that "[t]he present invention relates to a liquid crystal cell using the electricity controlled birefringence effect and to processes for producing the cell and a negative optical anisotropy uniaxial medium usable therein." '412 patent, 9-12.

Therefore, the court agrees with CEA that the patents-in-suit do not include helical nematic type cells. The court also agrees with CEA that the additional limitation proposed by Samsung that "when the cell is excited the molecules are all inclined in the same direction to form an angle with the homeotropy direction" improperly imports a limitation from preferred embodiments described in the specification.[10]

Therefore, the court adopts CEA's proposed construction: "a category of liquid crystal cells distinguished from the helical nematic type (*i.e.*, the twisted nematic type) in which the molecules have a homeotropic direction when no voltage is applied between the electrodes."

2. a liquid crystal layer which can have a homeotropic structure ('028 patent)

CEA's proposed construction is: "the liquid crystal layer having molecules substantially oriented in a homeotropic direction."

Samsung's proposed construction is: "a liquid crystal layer which can have an alignment of liquid crystal molecules parallel to the same direction and perpendicular to the plane of the liquid crystal layer."

At oral argument, Samsung stated that the differences between the parties' proposed constructions were not meaningful and that Samsung would agree to CEA's proposed construction with the caveat that "homeotropic structure," and "homeotropic direction," recited in other disputed claim terms, would be construed as having the same meaning for both the '028 and '412 patents.[11]

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[10] *See Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998) ("'[w]hile . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims.").

[11] D.I. 1053 at 34-37; *Id.* at 85-87.

Consequently, the court adopts CEA's proposed construction: "the liquid crystal layer having molecules substantially oriented in a homeotropic direction."

3. *means for polarizing the incident light, and wherein the thickness of the layer and each polarization means are intended to bring about a compensation of the birefringence of the liquid crystal layer* in its homeotropic structure so that the cell has a high contrast for said structure in the case of an oblique observation performed in a given observation plane ('028 patent)

The parties disagree on whether the above claim language should be construed as a single phrase or as two phrases that should be construed separately.

CEA argues this is a means-plus-function limitation to be construed under 35 U.S.C. § 112, ¶ 6 and that the italicized portion should be construed as a single phrase and:

> requires the structure disclosed in the specification that comprises the combination of linear polarizer and either one delay plate that may be biaxial, two delay plates that may be biaxial, or additional liquid crystal cells having a planar homogeneous orientation of the molecules, and equivalents thereof under 112(6), which, taking into account the thickness of the layer, bring about together a compensation of the birefringence of the liquid crystal layer in its homeotropic structure in such a way that the cell has a high contrast for said structure, in the case of an oblique observation, made in a given observation plane.

Samsung maintains that the phrase should be construed as two separate claim terms.[12] It proposes that "means for polarizing the incident light" be construed under 35 U.S.C. § 112, ¶ 6 and:

> requires the structure disclosed in the specification that comprises a circular polarizer or a quasi-circular polarizer or an equivalent structure to accomplish the function of polarizing the incident light. A circular polarizer is a linear polarizer combined with a quarter-wave delay plate wherein the

[12] Samsung does not propose a construction for the entire phrase based on its argument that the entire phrase is two phrases for which Samsung provides separate proposed constructions. CEA does not propose a construction for the two separate phrases Samsung argues must be construed based on its argument that the entire phrase requires a single construction.

> in-plane principal axes of the delay plate are oriented at 45° from the transmission and absorption axes of the linear polarizer. A quasi-circular polarizer is a structure that is very close to that of a circular polarizer and results in light that is polarized very close to circularly.

Samsung proposes that the second portion of the disputed phrase, "the thickness of the layer and each polarization means are intended to bring about a compensation of the birefringence of the liquid crystal layer in its homeotropic structure so that the cell has a high contrast for said structure in the case of an oblique observation performed in a given observation plane," should be construed as a separate claim term. It proposes that this phrase be construed as:

> The claimed thickness of the liquid crystal layer is $2e_o$. This thickness, $2e_o$, is defined as twice the thickness of the liquid crystal layer at which the polarization ellipse that is the result of an obliquely incident light wave traveling in the observation plane through a circular polarizer has its major axis rotated by the birefringence of the liquid crystal layer to align with the observation plane.

The court agrees with Samsung that the disputed phrase should be construed separately. The court adopts Samsung's proposed constructions because they are supported by the specification.

The claim language containing the disputed phrase recites, in pertinent part: "*wherein* the cell also comprises, at least on said side, a means for polarizing the incident light, *and wherein* the thickness of the layer and each polarization means are intended to bring about a compensation of the birefringence of the liquid crystal layer . . . ."[13] Samsung is correct that, grammatically, the separation of "means for polarizing" and "thickness of the [liquid crystal] layer" with commas and the inclusion of each in

[13] '028 patent, claim 1, 7:61-67 (emphasis added).

separate "wherein" clauses indicates that those are separate phrases requiring separate constructions.

With regard to the "means for polarizing the incident light," the structures clearly linked to the function of polarization means are circular polarizers or quasi-circular polarizers.[14] Figure 4 illustrates quarter wave delay plate 24 having principal indices L_2 and R_2 offset 45° from the absorption axis P_2. Also, the court agrees with Samsung that a quasi-circular polarizer is not a structure distinct from a circular polarizer but "is a term that accounts for less-than-perfect circular polarization in real world, commercially-available circular polarizers."[15] Describing the quasi-circular polarization illustrated in figure 6B, the specification states:

> At the exit from the first plate 23, the wave has a quasi-circular polarization and is [a] polarization ellipse, which is very close to a circle, is inscribed in a rectangle R_p whereof the sides are substantially equal and whereof two adjacent sides respectively have as the midperpendicular the axes X and Y (FIG. 6B).[16]

With regard to "the thickness of the [liquid crystal] layer" the specification recites:

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[14] *See, e.g.*, '028 patent, 2:33-35 ("[T]he cell comprises first and second polarization means on either side of said assembly and equivalent to quasi-circular polarizers . . . ."); '028 patent, 2:48-68 ("[T]he first and second polarization means respectively comprise a first pair having a first linear polarizer and . . . a first delay plate, and a second pair having a second linear polarizer and . . . a second delay plate . . . . [T]he first and second pairs behave in the same way as quasi-circular polarizers . . . ."); '028 patent, 3:14-16 ("[T]he polarization means being able to circularly polarize an incident plane light wave propagating in the homeotropy direction . . . ."); '028 patent, 3:26-40 ("[T]he polarization means comprises a linear polarizer and . . . a delay plate . . . chosen so as to form, with the linear polarizer, a circular polarizer with respect to an incident plane light wave propagating in the homeotropy direction."). *See B. Braun Med., Inv. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997) (stating that the "structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim"). The court disagrees with CEA that the structures of polarizers other than circular (or quasi-circular polarizers) are described in the specification. As noted by Samsung, the alternative embodiments cited by CEA ('028 patent, 7:46-48; 7:57-8:2) could reasonably be understood as stating a material (liquid crystal) from which a quarter wave delay plate could be made or (in the combined delay plate embodiment) a rearrangement of two circular polarizers.

[15] D.I. 700 at 17.

[16] '028 patent, 5:65-6:2.

"[a] definition will now be given of the thickness of the liquid crystal layer 18 leading, combined with polarizers 21, 22 and delay plates 23, 24, to a compensation of the birefringence of the liquid crystal layer, under oblique incidence and in the observation plane P. . . . According to the invention, the thickness of the liquid crystal layer 18 is taken to be double said particular thickness e_o . . . . "[17]

Therefore, the court adopts Samsung's proposed definition, pursuant to 35 U.S.C. § 112, ¶ 6, of "means for polarizing the incident light." The function is polarizing the incident light and:

> requires the structure disclosed in the specification that comprises a circular polarizer or a quasi-circular polarizer or an equivalent structure to accomplish the function of polarizing the incident light. A circular polarizer is a linear polarizer combined with a quarter-wave delay plate wherein the in-plane principal axes of the delay plate are oriented at 45° from the transmission and absorption axes of the linear polarizer. A quasi-circular polarizer is a structure that is very close to that of a circular polarizer and results in light that is polarized very close to circularly.[18]

The court adopts Samsung's proposed definition of "the thickness of the layer

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[17] '028 patent, 5:37-6:33. *CCS Fitness, Inc. v. Brusnwick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (A patentee may act as "his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history."). In a prior art statement discussing U.S. Patent 3,960,438 ("the '438 patent"), the applicant stated that the '438 patent "describes reflective devices using ambient light. One of the embodiments of these devices comprises an electrically controlled birefringence cell, as well as a reflecting surface on one side of the cell and a circular polarisation [sic] means on the other side of the cell. In this document, *the thickness of the liquid crystal film* lays no part whereas *it is of vital importance in the invention*." D.I. 701, Ex. 3A at 2 (emphasis added).

[18] The court disagrees with CEA's argument that Samsung's proposed construction improperly excludes other embodiments purportedly recited in the specification. The court also rejects CEA's arguments that claim differentiation precludes adoption of Samsung's proposed construction. *See Laitram v. Rexnord*, 939 F.2d 1533, 1538 (Fed. Cir. 1991) ("Laitram's argument that [dependent] claim 24 prevents claim 21 from being interpreted as statutorily mandated by section 112(6) must be rejected. . . . '[T]he concept of claim differentiation . . . states that claims should be *presumed* to cover different inventions. This means that an interpretation of a claim should be avoided if it would make the claim read like another one. Claim differentiation is a guide, not a rigid rule. If a claim will bear only one interpretation, similarity will have to be tolerated. Simply stated, the judicially developed guide to claim interpretation known as 'claim differentiation' cannot override the statute.'" (quoting *Autogiro Co. of Am. v. U.S.*, 384 F.2d 391, 404 (Ct. Cl. 1967)).

and each polarization means are intended to bring about a compensation of the birefringence of the liquid crystal layer in its homeotropic structure so that the cell has a high contrast for said structure in the case of an oblique observation performed in a given observation plane" and construes that phrase to mean:

> The claimed thickness of the liquid crystal layer is $2e_o$. This thickness, $2e_o$, is defined as twice the thickness of the liquid crystal layer at which the polarization ellipse that is the result of an obliquely incident light wave traveling in the observation plane through a circular polarizer has its major axis rotated by the birefringence of the liquid crystal layer to align with the observation plane.

4. high contrast ('028 patent)

CEA contends that this term does not require construction, but provides a proposed construction of: "a luminosity ratio between the on and off states of at least about 10:1."

Samsung argues that "high contrast" is indefinite. It contends that "contrast" is the ratio of light intensity in the bright state to light intensity in the dark state of a liquid crystal cell and that the '028 patent does not provide information regarding what "high" means.

At oral argument, Samsung stated that if the court accepts its proposed construction of "means for polarizing" and "thickness of the [liquid crystal] layer" for the '028 patent, it agreed with CEA that this term does not require construction. Having agreed with those definitions proposed by Samsung, the court determines that no construction of this term is necessary.

5. oblique observation ('028 and '412 patents)

CEA contends that this term does not require construction, but provides a

proposed construction of: "an observation other than in the homeotropic direction."

Samsung's proposed construction is: "an observation made at an angle other than in the homeotropic direction, which direction is perpendicular to the glass plates of the cell."

The specification defines "oblique observation": "oblique observation (as opposed to an observation made in the homeotropy direction)."[19] The parties' proposed constructions are substantially identical, with Samsung's proposed construction adding a definition of "homeotropic direction." At oral argument, Samsung agreed to CEA's proposed construction–with the same caveat concerning the construction of "a liquid crystal layer which can have a homeotropic structure," above, that "homeotropic direction" will be construed by the court and have the same meaning in both patents-in-suit.[20]

Therefore, the court adopts CEA's proposed construction: "an observation other than in the homeotropic direction."

6. given observation plane ('028 patent)

CEA contends that this term does not require construction, but provides a proposed construction of: "any plane of variable observations by the screen reader."

Samsung's proposed construction is "a plane perpendicular to the screen which corresponds to the most probable position of a screen reader, i.e., a vertical plane extending perpendicularly from the screen."

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[19] '028 patent, 2:8-10; *see Phillips v AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) ("The specification 'acts as a dictionary when it expressly defines terms used in the claims . . . .'") (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

[20] D.I. 1053 at 67-68; *see also* footnote 11.

The court adopts Samsung's proposed construction.

The specification states, in the summary of the invention, that "[t]he compensation for *a given observation plane*, of the birefringence of the liquid crystal layer in its homeotropic structure, makes it possible to retain a high contrast in case of an oblique observation made in *said observation plane* . . . ."[21] That language indicates that there is a particular, or specific, observation plane. Figure 3 is described as "a diagrammatic view showing *the observation plane* of a cell *according to the invention* . . . ."[22] That figure "diagrammatically shows the observation plane P or main reading plane . . . . The observation plane P corresponds to the most probable position of the screen reader, the latter observing the screen under variable incidence."[23]

The specification, therefore, supports Samsung's proposed construction which the court adopts: "a plane perpendicular to the screen which corresponds to the most probable position of a screen reader, i.e., a vertical plane extending perpendicularly from the screen."[24]

7. homeotropic direction; homeotropic structure ('028 patent and '412 patent)[25]

CEA's proposed construction is "substantially perpendicular to the adjacent surfaces of the substrates."

Samsung's proposed construction is "the direction perpendicular to the glass

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[21] '028 patent, 2:14-18 (emphasis added).
[22] '028 patent, 3:55-58 (emphasis added).
[23] '028 patent, 4:23-30.
[24] The court rejects CEA's argument, with respect to this claim term, that Samsung's proposed construction improperly imports a limitation from a preferred embodiment in light of the language of the summary of the invention section which is properly read as limiting the invention to a single viewing plane.
[25] At oral argument, the parties agreed that the same construction should apply to "homeotropic direction" and "homeotropic structure." *See* footnote 11.

plates of the cell."

At oral argument, Samsung expressed its view that "substantially" should not be included in a phrase reciting a particular "direction," i.e., "homeotropic direction," but that it was not adverse to having "substantially" included in the construction of the term.[26] Samsung also stated that it did not believe the parties' proposed constructions reciting "perpendicular to the *adjacent surfaces of the substrates*" versus "perpendicular to the *glass plates of the cell*" were significant differences.[27] The court agrees that the differences in the parties' proposed constructions are primarily semantic and, in light of Samsung's position at oral argument will construe "homeotropic direction" and "homeotropic structure" as meaning "the direction substantially perpendicular to the to the adjacent surfaces of the substrates."

8. the molecules of said liquid crystal layer being substantially oriented in a homeotropic direction in the absence of a voltage between said electrodes ('412 patent)

At oral argument, Samsung agreed with CEA's proposed construction.[28] Consequently, the court construes this claim term to mean "the molecules of said liquid crystal layer being largely but not wholly oriented in a homeotropic direction in the absence of a voltage between said electrodes."

9. means for polarizing said incident light ('412 patent)

CEA argues that this term is in means-plus-function format under 35 U.S.C. § 112, ¶ 6, and that this requires "the structure disclosed in the specification that

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[26] D.I. 1053 at 81-82.
[27] *Id.* at 82.
[28] *Id.* at 83.

comprises a linear polarizer (i.e., rectilinear polarizer), an elliptical polarizer, or a circular polarizer, and equivalent structures to accomplish the function of polarizing the incident light."

Samsung agrees that the term is in means-plus-function format, but argues that during the prosecution of the patent, CEA disclaimed polarizers other than circular, and the term is, therefore, limited to circular polarizers. But for that purported disclaimer, Samsung's proposed construction would be the same as CEA's proposed construction.

The specification states that "the cell according to the invention is advantageously compatible with any polarization means (rectilinear, circular, or eliptical [sic])."[29] During prosecution, the patent examiner rejected certain claims as anticipated or obvious in light of the '028 patent disclosure, particularly with regard to figure 4 of that patent.[30] In response to the office action, the applicant responded that "[t]he results of using the new compensating medium layer are disclosed in the specification at plates 3 and 4 and may be summarized as follows: . . . compatible with any polarization means."[31] Samsung points to other statements in the applicant's response to the office action referencing a preferred embodiment, figure 3, as support for its disavowal argument, but acknowledges that, in the sentence cited, "CEA did not explicitly state that the 'means for polarizing' in the '412 patent being referred to was the

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[29] '412 patent, 2:31-33.

[30] *See* 702, Ex. 4C at 2-3 (Oct. 1988 Office Action) (Figure 4 [of the '028 patent] clearly shows the two birefringent plates (23, 24) between their respective polarizers and the ECB cell, each having a fast axis, R_1' andR_2', aligned parallel to the homeotropy direction . . . . These fast axes are said to have indexes of refraction lower than the other two axes . . . . That same passage also states that the birefringent plates are for compensation . . . .").

[31] D.I. 702, Ex. 4A at 5 (Amendment of April 12, 1989).

circular polarizer of Figure 3, but that was certainly the implication."[32] The court finds no "manifest exclusion or restriction representing a clear disavowal of claim scope" in the applicant's response to the patent examiner's office action[33] and, therefore, rejects Samsung's proposed construction.

The court determines that this is a means-plus-function term pursuant to 35 U.S.C. § 112, ¶ 6 and adopts CEA's proposed construction: "the structure disclosed in the specification that comprises a linear polarizer (i.e., rectilinear polarizer), an elliptical polarizer, or a circular polarizer, and equivalent structures to accomplish the function of polarizing the incident light."

10. nematic liquid crystal layer in its homeotropic structure ('412 patent)

CEA's proposed construction is "nematic liquid crystal layer having molecules substantially oriented in a homeotropic direction."

As with the other disputed claim terms including the phrase "homeotropic direction," Samsung agreed at oral argument to accept CEA's proposed construction because the court is separately defining "homeotropic direction" which will have the same meaning in all disputed claim terms of the patents-in-suit.[34] Therefore, the court adopts CEA's proposed construction: "nematic liquid crystal layer having molecules substantially oriented in a homeotropic direction."

11. uniaxial medium ('412 patent)

Claim 3 of the '412 patent, in which this term is found, recites:

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[32] D.I. 700 at 42.
[33] *See NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1308-09 (Fed. Cir. 2005).
[34] D.I. 1053 at 98.

> A cell according to claim 2, wherein the two polarizing means are crossed rectilinear polarizers and wherein the compensating medium is uniaxial medium of negative optical anistropy having an axis of symmetry parallel to the homeotropic direction and an extraordinary axis parallel to said axis of symmetry.

CEA requests that the court construe the entire phrase "uniaxial medium of negative optical anistropy" as a single claim term while Samsung argues that "uniaxial medium" and "negative optical anistropy" should be separately construed.

CEA's proposed construction is of "uniaxial medium of negative optical anistropy" is "a new type of birefringent, manufactured, plastic material having optical properties of a product resulting from the process disclosed in the specification and illustrated in figures 4 and 5." As an alternative, should the court construe that phrase as two claim terms, CEA's proposed construction of "uniaxial medium" is "a birefringent medium wherein the extraordinary index exceeds an ordinary index or vice versa."

Samsung's proposed construction of "uniaxial medium" is "a type of birefringent material wherein the values of two of the principal optical indices (called the ordinary indices) are equal to each other and the third optical index (called the extraordinary index) has a different value."

The court determines that "uniaxial medium" and "negative optical anisotropy" will be separately construed. Samsung's proposed construction of "uniaxial medium" is adopted.

CEA's construction of "uniaxial medium" would read on its construction of "biaxial

medium" and must be rejected.[35] Samsung's proposed construction of "uniaxial medium" is both distinguishable from its proposed construction of "biaxial medium" and supported by the specification. Describing figure 1, the specification recites "[t]his nematic liquid crystal layer is also a positive optical anistropy uniaxial medium, the extraordinary index NeCl of said medium exceeding its ordinary index NoCl."[36] Figure 1 uses the same identifier, NoCl, for both of the ordinary indices of the liquid crystal layer demonstrating that each are equal to the other. The specification continues by specifying that "[c]ompensating plate 16 is a negative optical anistropy uniaxial medium, the extraordinary index Ne1 of said medium being below its ordinary index No1."[37] Figure 1 uses the same identifier, No1, for both of the ordinary indices of the compensating plate, again demonstrating that each are equal to the other. The description of a biaxial medium, by contrast, makes clear that each of the three indices have different values: "[e]ach plate 20 or 22 is a biaxial medium having two principal indices N1o and N2o with values close to one another and a third index N3e below N1o and N2o, the weak index axis N3e being parallel to the homeotropic direction."[38]

Therefore, the court adopts Samsung's proposed construction: "a type of birefringent material wherein the values of two of the principal optical indices (called the ordinary indices) are equal to each other and the third optical index (called the

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[35] *See* "biaxial medium," below. Additionally, at oral argument, CEA stated that "[w]hen you look at the idea, our construction has to have the idea of manufacture, it's not perfectly uniaxial. . . there has [never been] a debate about the definition of uniaxial." D.I. 1053 at 129. The Federal Circuit, however, has stated that "[m]anufacturing tolerances are immaterial to the interpretation of claim language." *Senmed, Inc. v. Richard-Allan Medical Industries, Inc.*, 888 F.2d 815, 820 (Fed. Cir. 1989) (citation omitted), *disapproved of on other grounds by Cardinal Chem., Co. v. Morton Int'l, Inc.*, 508 U.S. 83 (1993).

[36] '412 patent, 4:61-65.

[37] '412 patent, 5:3-5.

[38] '412 patent, 5:41-51.

extraordinary index) has a different value."

12. axis of symmetry ('412 patent)

CEA's proposed construction is "a line relating to the ellipsoid of the indices of a medium corresponding in some way to a symmetric property of the ellipsoid."

Samsung's proposed construction is "the axis in a uniaxial material corresponding to the extraordinary index."

The court adopts Samsung's proposed construction.

CEA's proposed construction, including the language "corresponding *in some way* to *a symmetric property*," provides little in the way of defining this claim term. CEA agreed at oral argument that the axis of symmetry corresponds to the extraordinary index. Based on its contention that uniaxial medium does not require the ordinary indices to be equal, however, CEA stated their position is that there is "an axis of rotation" which is an axis of symmetry with respect to the extraordinary index.[39]

The specification recites "the compensating medium is a uniaxial medium of negative optical anistropy having an axis of symmetry parallel to the homeotropy direction and an extraordinary axis parallel to said axis of symmetry."[40]

Samsung's proposed construction is consistent with the court's construction of uniaxial medium having equal ordinary indices, which would be symmetrical in relation to the extraordinary index.

Samsung's construction is adopted by the court: "the axis in a uniaxial material

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[39] D.I. 1053 at 131.

[40] '412 patent, 2:53-58; *see also* '412 patent, 2:59-64 ("[T]he compensating medium is a uniaxial medium of negative optical anistropy having an axis of symmetry parallel to the homeotropy direction and an extraordinary axis parallel to said axis of symmetry.").

corresponding to the extraordinary index."

13. positive optical anisotropy ('412 patent)

CEA's proposed construction is "a characteristic of a birefringent material wherein the extraordinary index exceeds an ordinary index."

Samsung's proposed construction is "a characteristic of a birefringent material wherein the values of two of the three principal optical indices (called the ordinary indices) are equal to each other and the third optical index (called the extraordinary index) is greater than the other two."

The specification supports Samsung's proposed construction[41] and is adopted by the court: "a characteristic of a birefringent material wherein the values of two of the three principal optical indices (called the ordinary indices) are equal to each other and the third optical index (called the extraordinary index) is greater than the other two."

14. negative optical anisotropy ('412 patent)

CEA's proposed construction is "a characteristic of birefringent material wherein an ordinary index exceeds the extraordinary index."

Samsung's proposed construction is "a characteristic of a birefringent material wherein the values of two of the three principal optical indices (called the ordinary indices) are equal to each other and the third optical index (called the extraordinary index) is less than the other two."

Samsung's proposed construction is supported by the specification[42] and is

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[41] *See* '412 patent, 4:61-64 ("This nematic liquid crystal layer is also a positive optical anistropy uniaxial medium, the extraordinary index NeCl of said medium exceeding its ordinary index NoCl.").

[42] "*See* '412 patent, 5:3-5 ("Compensating plate 16 is a negative optical anistropy uniaxial medium, the extraordinary index Ne1 of said medium being below its ordinary index No1.").

adopted by the court: "a characteristic of a birefringent material wherein the values of two of the three principal optical indices (called the ordinary indices) are equal to each other and the third optical index (called the extraordinary index) is less than the other two."

15. biaxial medium ('412 patent)

CEA's proposed construction is "an existing type of birefringent, manufactured, plastic material wherein two of the principal optical indices are not too close to one another and the third principal optical index is significantly below or above the other two indices, *e.g.*, N1o = 1.660, N2o = 1.6425, N3e = 1.5000."

Samsung's proposed construction is "a type of birefringent material having three unequal principal optical indices."

The specification supports Samsung's proposed construction[43] and is adopted by the court: "a type of birefringent material having three unequal principal optical indices."

CONCLUSION

In light of this claim construction Order, each party shall advise the court by letter no later than 4:30 p.m., Tuesday, October 9, 2007, whether any of its respective summary judgment motions are withdrawn as moot because of a genuine issue of

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[43] '412 patent, 3:9-14 ("According to another special embodiment, the two polarizing means are crossed rectilinear polarizers and the compensating medium a biaxial medium, whereof the smallest index axis is parallel to the homeotropy direction."); '412 patent, 5:47-51 ("Each plate 20 or 22 is a biaxial medium having two principal indices N1o and N2o with values *close to one another* and a third index N3e below N1o and N2o, the weak index axis N3e being parallel to the homeotropic direction." (emphasis added)). The second quotation in this footnote was included as support for CEA's proposed construction, which CEA changed from "close to one another" to "not too close to one another." CEA concludes its proposed construction with exemplary figures for the three indices, but does not provide convincing explanation as to how those indices are not *too* close to one another, or how its definition for uniaxial medium ("a birefringent medium wherein the extraordinary index exceeds an ordinary index or vice versa") would not also read on its definition for biaxial medium.

material fact. This Order is **not** an invitation for further argument on the summary judgment motions.

October 3, 2007
Wilmington, Delaware

UNITED STATES MAGISTRATE JUDGE