United States District Court,
E.D. Texas, Texarkana Division.

BRIGHT SOLUTIONS, INC,
Plaintiff.
v.
TIRE SEAL, INC., EF Products, L.P., and Ritchie Engineering Company, Inc,
Defendants.

Civil No. 5:06-CV-247-DF

July 7, 2008.

Jeffrey Joseph Cox, Isaac Daniel Leventon, Hartline Dacus Barger Dreyer & Kern, Dallas, TX, C Donald Stevens, Timothy C. Bickham, Steptoe & Johnson, Washington, DC, for Plaintiff.

Jerold Ira Schneider, Akerman Senterfitt, West Palm Beach, FL, Eric Bryant Meyertons, Ryan T. Beard, Meyertons Hood Kivlin Kowert & Goetzel, PC, Austin, TX, Thomas Loyd Warden, Conley Rose, Houston, TX, for Defendants.

CLAIM CONSTRUCTION ORDER

DAVID FOLSOM**, District Judge.**

Before the Court is the Opening Claim Construction Brief filed by Plaintiff Bright Solutions. Dkt. No. 131. Also before the Court is Defendants' Responsive Claim Construction Brief and Plaintiff's Reply Claim Construction Brief. Dkt. Nos. 78, 135, 136, 137 & 140. The Court held a hearing on November 27, 2007. Dkt. No. 143 & 149. After considering the patents, arguments of counsel, and all other relevant pleadings and papers, the Court finds that the claims of the patents-in-suit should be construed as set forth herein.

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I. BACKGROUND

Plaintiff Bright Solutions, Inc. ("Bright Solutions") brings this patent infringement suit alleging that Defendants infringe United States Patent Nos. RE35,370 (the "'370 Patent"), RE35,395 (the "'395 Patent"), 6,590,220 (the "'220 Patent), 6,355,935 (the ""5 Patent), 5,174,906 (the "'906 Patent), 5,674,000 (the "'000 Patent), 5,959,306 (the "'306 Patent), and 5,742,066 (the "'066 Patent). Defendants Tire Seal, Inc. ("Tire Seal"), EF Products, L.P. ("EF Products"), and Ritchie Engineering Company, Inc. ("Ritchie") (collectively, the "Defendants") deny infringement and assert the affirmative defenses of invalidity, laches, estoppel, unclean hands, preclusion, standing, misuse, waiver, and failure to adequately mark. *See* Dkt. Nos. 20, 87 & 88. The Defendants also each assert counterclaims for a declaratory judgment of non-infringement and unenforceabilty, as well as for patent misuse and antitrust violations. *Id*.

Pursuant to the Court's Order limiting the number of asserted claims to ten (10) claims, Plaintiff elected Claim 10 of the '370 Patent, Claim 28 of the '220 Patent, Claims 10 and 32 of the "5 Patent, Claim 12 of the ' 000 Patent, Claims 28 and 37 of the '306 Patent, and Claims 15, 17, and 19 of the '066 Patent. Dkt. No.

129; *See also* Dkt. Nos. 117, 121 & 127. Defendants Ritchie Engineering and EF Products have now resolved their dispute with Plaintiff, leaving Tire Seal as the only remaining Defendant. Since Claim 12 of the '000 Patent was not asserted against Tire Seal, it is no longer at issue in this case. All other asserted claims remain.

II. LEGAL PRINCIPLES OF CLAIM CONSTRUCTION

A determination of patent infringement involves two steps. First, the patent claims are construed, and, second, the claims are compared to the allegedly infringing device. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455 (Fed.Cir.1998) (en banc). The legal principles of claim construction were recently reexamined by the Federal Circuit in Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir.2005) (en banc). The Federal Circuit in *Phillips* expressly reaffirmed the principles of claim construction as set forth in Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed.Cir.1996), and Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111 (Fed.Cir.2004). Thus, the law of claim construction remains intact. Claim construction is a legal question for the courts. Markman, 52 F.3d at 979.

The Court, in accordance with the doctrines of claim construction which it has outlined in the past, construes the claims of the patents in suit below. *See Pioneer v. Samsung,* Civ. No. 2:07-cv-170, Dkt. No. 94 at 2-8 (E.D. Tex. filed Mar. 10, 2008) (claim construction order).

III. THE PATENTS-IN-SUIT

The '370 Patent, entitled "Leak Detection in Heating Ventilating and Air Conditioning Systems Using an Environmentally Safe Material," issued on November 5, 1996. The inventor listed is Richard G. Henry, and the Abstract reads as follows:

The present invention [relates] to the effective leak detection of refrigerants by the addition of dyes from the general chemical class of napthalimide fluorescent dyes in a refrigeration system, employs alone, or in combination, a refrigerant in a hermetic system such as, but not limited to, chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC), hydrofluorocarbons (HFC) and any hydrogen, halogenated or ether derivatives of the methane, hydrogen, halogenated, ether or cyclic derivatives of either ethane, propane, butane, pentane, mixtures of HCFC, HFC, hydrocarbons, carbon dioxide and ammonia.

Leakage is determined by inspection of the sealed system using a lamp having an emission wavelength from 300 to 480 nanometers providing an indication of any system leakage.

Plaintiff asserts Claim 10 of the '370 Patent, which reads as follows:

10. A method of detecting leaks in a refrigeration system as claimed in claim 1 wherein:

said mixture of a dye selected from the general class of naphthalimide fluorescent dyes [and refrigeration system lubricant] is allowed to remain in the refrigeration system for use in detecting possible future refrigeration system leaks.

Claim 1 of the '370 Patent reads as follows:

1. A method of detecting leaks in a refrigeration system that uses in combination a refrigerant and a refrigeration system lubricant comprising the steps of: preparing a mixture that includes a predetermined amount of a dye selected from the general class of naphthalimide dye structures as a fluorescent dye; adding a predetermined amount of the mixture to said refrigerant combination of refrigerant and refrigerant system lubricant for use in said refrigeration system; operating the system for a predetermined period of time to allow the mixture to mix with said combination of refrigerant and the refrigeration system lubricant; examining the system for a leak site with a lamp that produces light having an emission wavelength from 300 to 480 nanometers, directed at said refrigeration system;

determining the presence of a leak site by the presence of a colored fluorescence detectable by visual observation under the light from said lamp at said leak cite; and said dye, refrigerant and refrigeration system lubricant mixture seeping thru and appearing at said location of said leak site, the then remaining at said site without undergoing chemical oxidation changes to provide capability for stable fluorescent indication of a leak.

The '220 Patent, entitled "Leak Detection Lamp," issued on July 8, 2003. The inventors listed are Terrence D. Kalley, John R. Burke, and David Gentit, and the Abstract reads as follows:

A light source for examining sites in heating, ventilating, and air conditioning systems for leaks using a fluorescent dye is described. The light source can include a low voltage lamp or a low heat generating lamp.

Plaintiff asserts claim 28 of the '220 Patent, which reads as follows:

28. The method of claim 22 wherein providing light within a predetermined wavelength range includes providing light predominantly in the wavelength range of between 300 and 500 nanometers from a light emitting diode.

Claim 22 of the '220 Patent reads as follows:

22. A method of detecting a leak in a closed system containing a substance for emitting an emission wavelength of light after being excited by an excitation wavelength of light, the method comprising:

providing light within a predetermined wavelength range of less than about 500 nm from a light source to the closed system, the light emitted from a low heat-generating, low-voltage lamp, wherein the lamp is connected to a source of electrical power;

illuminating a component of the system with the light within the predetermined wavelength range; and

detecting emission of light from the substance at a leak site.

The "5 Patent, entitled "Portable Light Source and System for Use in Leak Detection," issued on March 12, 2002. The inventors listed are Terrence D. Kalley, Richard C. Cavestri, and Robert L. Miniutti, and the Abstract reads as follows:

A light source for examining leak detection sites in hearing, ventilating, and air conditioning systems using a fluorescent dye is described. The light source can include a parabolic reflector or a low voltage lamp.

Plaintiff asserts claims 10 and 32 of the "5 Patent, which read as follows:

10. The light source of claim 1, wherein the wavelengths of light emitted from the light source is substantially between 300 and 500 nanometers.

32. The system of claim 28, wherein the dye is naphthalimide, perylene, thioxanthane, coumarin, or fluorescein.

Claim 1 of the "5 Patent reads as follows:

1. A light source for examination of a substance which emits light at a wavelength greater than a wavelength of light emitted from the light source when the substance is excited by the wavelength of light emitted from the light source, the light source comprising:

a housing having a light outlet;

a lamp positioned in the housing; and

a dichroic filter positioned in the housing between the lamp and the light outlet, wherein the filter restricts the wavelengths of light emitted from the lamp so that the wavelengths of the light emitted from the light source through the light outlet is within a predetermined range effective to enhance the detection of emission of light from a substance when the substance is excited by the wavelength of light emitted from the light source.

The '306 Patent, entitled "Portable Light Source and System for Use in Leak Detection," was issued on September 28, 1999. The inventors listed are Terrence D. Kalley, Richard C. Cavestri, and Robert L. Miniutti, and the Abstract reads as follows:

A light source for examining leak detection sites in hearing, ventilating, and air conditioning systems using a fluorescent dye is described. The light source can include a parabolic reflector or a low voltage lamp.

Plaintiff asserts Claims 28 and 37 of the '306 Patent, which read as follows:

28. The system of claim 25, wherein the dye is a naphthalimide, perylene, thioxanthine, coumarin, or fluorescein.

37. A method of deteching a leak in a system containing a substance capable of emitting an emission wavelength of light after being excited by an excitation wavelength of light, the method comprising:

providing a collimated beam of light at the excitation wavelength from a light source to a leak site; and detecting emission of light from the substance.

Claim 25 of the '306 Patent reads as follows:

25. A system for detecting leaks in a fluid system, said system comprising: a substance capable of emitting an emission wavelength of light after being excited by an excitation wavelength of light; and

a light source capable of emitting the excitation wavelength of light, the light source comprising:

a housing having a light outlet;

a reflector located within the housing;

a low-voltage lamp positioned in the housing between the reflector and light outlet; and

a filter positioned in the housing between the lamp and the light outlet, wherein the filter restricts the wavelengths of light emitted from the lamp and the light reflected by the reflector, whereby the wavelength of the light emitted from the light source through the light outlet is restricted to a predetermined range including the excitation wavelength effective to enhance detection of the emission wavelength of light from a substance when the substance is excited by the excitation wavelength and

wherein the light source produces an average light power density in the ultraviolet wavelength region of at least 0.1mW/cm ^{2} at a distance of two feet from the light outlet or an average light power density in the blue wavelength region of at least 0.75 mW/cm ^{2} at a distance of two feet from the light outlet.

The '066 Patent, entitled "Light Source for Use in Leak Detection in Heating, Ventilating, and Air Conditioning Systems that Utilize Environmentally-Safe Materials," was issued on April 21, 1998. The inventor listed is Richard C. Cavestri, and the Abstract reads as follows:

A light source for use in examining leak detection sites in heating, ventilating, and air conditioning systems that utilize a fluorescence-producing dye in the refrigerent to determine the presence of leaks. The light source combines a dichroic reflector with a lamp and interference filter to provide a narrowed emission of wavelength of light emitted from the light source.

Plaintiff asserts Claims 15, 17, and 19 of the '066 Patent, which read as follows:

15. A light source as claimed in 14 wherein:

said dye is chosen from a group including naphthalimide, perylene, thioxanthine, coumarin, and fluorescene.

17. A light source as claimed in claim 15 wherein:

said wavelength of light emitted from said source is further restricted by the inclusion of long wavelength pass material in said filter lens eyewear or in the alternative included in said filter shield.

19. A light source for examination of a substance which reemits light at a wavelength greater than the wavelength of light emitted from said light source, said light source comprising:

a lamp assembly including;

a dichroic white light reflector reflecting light primarily in an emission range having a wavelength between 300 and 600 nanometers;

said dichroic white light reflector is a focusing reflector;

a lamp positioned between said dichroic reflector and said substance;

said lamp connected to a source of electrical power and operated in response to said electrical power to emit light;

said dichroic reflector functioning to reflect a selected portion of said light emitted from said lamp;

whereby said light emitted from said light source is restricted to a predetermined range effective to enhance the reemission of light from said substance.

Claims 1 and 14 of the '066 Patent reads as follows:

1. A light source for examination of a substance which reemits light at a wavelength greater than the wavelength of light emitted from said light source, said light source comprising:

a lamp assembly including;

a dichroic white light reflector;

said dichroic white light reflector is a focusing reflector;

a lamp positioned between said dichroic white light reflector and said substance; said lamp connected to a source of electrical power and operated in response to said electrical power to emit light;

said dichroic white light reflector functioning to reflect a selected portion of said light emitted from said lamp;

a lens filter positioned between said lamp assembly and said substance;

said lens filter operated to further restrict said light from said lamp and said light reflected by said dichroic white light reflector

whereby said light emitted from said light source is restricted to a predetermined range effective to enhance the reemission of light from said substance.

14. A light source as claimed in claim 1 wherein: said substance is a leak detection dye.

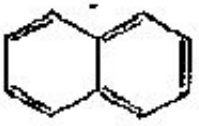
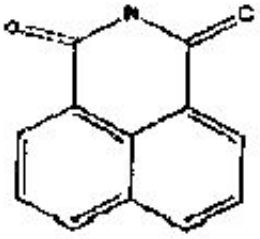
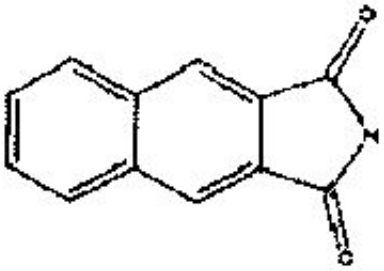
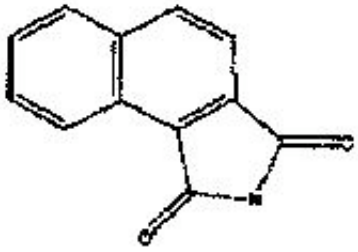
IV. CLAIM CONSTRUCTION

A. Agreed Terms

The parties agree on the construction of 40 terms. Dkt. No. 131 at Ex. 1. These constructions were set forth in the Revised P.R. 4-5(D) Joint Claim Construction Chart:

Claim Term	Agreed Construction
preparing a mixture (The '370 Patent, Claim 1)	mixing two or more substances together

fluorescent dye (The '370 Patent, Claim 1)	a dye that emits light at a wavelength greater than a wavelength of light that is absorbed by the dye
colored fluorescence (The '370 Patent, Claim 1)	emitted light that exhibits color
leak site (The '370 Patent, Claim 1)	an opening where a fluid enters or exits
said dye, refrigerant and refrigeration system lubricant mixture (The '370 Patent, Claim 1)	a mixture of fluorescent, naphthalimide dye, refrigerant, and refrigeration system lubricant
capability for stable fluorescent indication of a leak (The '370 Patent, Claim 1)	the mixture including a fluorescent due remains capable of fluorescing at the leak site for at least the time required to inspect the refrigeration system
for examination of a substance which reemits light at a wavelength greater than the wavelength of light emitted from said light source (The '066 Patent, Claim 1)	the light source is configured for examination of a substance which reemits light at a wavelength greater than the wavelength of light emitted from said light source
dichroic white light reflector functioning to reflect a selected portion of said light emitted from said lamp (The '066 Patent, Claim 1)	said reflector enhances the forward reflectance of a wanted color, and minimizes the forward reflectance of an unwanted color
said lens filter operated to further restrict said light from said lamp and said light reflected by said dichroic white light reflector (The '066 Patent, Claim 1)	the lens filter restricts the wavelengths of light emitted by the lamp and restricts the wavelengths of light reflected by the dichroic white light reflector
fluorescene (The '066 Patent, Claim 15)	a fluorescent dye with a greenish-yellow fluorescence ($C_{20}H_{12}O_5$) [CAS 2321-07-5].
said wavelength of light emitted from said source is further restricted by the utilization of filter lens eyewear, or in the alternative a filter shield, employed by a user (The '066 Patent, Claim 16)	the wavelength of light emitted from the light source is further restricted by the utilization of filter lens eyewear, or in the alternative a filter shield, employed by a user of the light source.
	filter shield: a hand-held optical filter placed between a user's eyes and a light source
long wavelength pass material (The '066 Patent, Claim 17)	a material that reduces the amount of short wavelength light observed by a user or detector
said dichroic reflector functioning to reflect a selected portion of said light emitted from said lamp (The '066 Patent, Claim 19)	said reflector enhances the forward reflectance of a wanted color, and minimizes the forward reflectance of an unwanted color
for examination of a substance which reemits light at a wavelength greater than the wavelength of light emitted from said light source (The '000 Patent, Claim 1)	the light source is configured for examination of a substance which reemits light at a wavelength greater than the wavelength of light emitted from said light source
faceted white light reflector (The '000 Patent, Claim 1)	a light reflector with a reflecting surface formed by small planes, as opposed to a smooth surface, which reflects white light (about 400-700nm wavelength)
said faceted white light reflector functioning to reflect a selected portion of said light emitted from said lamp (The '000 Patent, Claim 1)	a facted white light reflector is configured to reflect a portion of the light wavelengths emitted by the lamp, or a fraction of the light emitted by the lamp
said lens filter operated to further restrict said light from said lamp and said light reflected by said faceted white light reflector (The '000 Patent, Claim 1)	a lens filter is configured to restrict the wavelengths of light emitted by the lamp and restrict the wavelengths of light reflected by the faceted white light reflector

naphthalimide (The '000 Patent, Claim 12)	a dye that incorporates an imide group (i.e., ) connected to a naphthalene group (i.e., ) in any of the following three configurations.   
low-voltage lamp (The '306 Patent, Claim 25)	a lamp that operates on 12 volts or less
average light power density (The '306 Patent, Claim 25)	average candle power per unit area
ultraviolet wavelength region (The '306 Patent, Claim 25)	the region of the electromagnetic spectrum between visible light and X-rays, including 300-400 nm
blue wavelength region (The '306 Patent, Claim 25)	the portion of the color spectrum lying between green and violet, including 400-500 nm
providing a collimated beam of light (The '306 Patent, Claim 37)	providing a beam of light consisting of parallel beams of light
for examination of a substance which emits light at a wavelength greater than a wavelength of light emitted from the light source when the substance is excited by the wavelength of	the light source is configured for examination of a substance which reemits light at a wavelength greater than the

light emitted from the light source (The "5 Patent, Claim 1)	wavelength of light emitted from said light source
restricts the wavelengths of light emitted (The "5 Patent, Claim 1)	limits the wavelengths of light emitted to a narrower range
substantially between 300 and 500 nanometers (The "5 Patent, Claim 10)	for the most part (over 50%) between 300-500nm
fluid system (The "5 Patent, Claim 28)	a system containing fluid
substance of emitting an emission wavelength of light (The "5 Patent, Claim 28)	a fluorescent substance
restricts the wavelengths of light emitted (The "5 Patent, Claim 28)	limits the wavelengths of light emitted to a narrower range
perylene (The "5 Patent, Claim 32)	a fluorescent dye derived from Peri-Dinaphthalene (also known as Dibenz[de,kl]anthracene) ($C_{20}H_{12}$) [CAS 198-55-0]
thioxanthane (The "5 Patent, Claim 32)	a fluorescent dye derived from 9H-Thioxanthene (also known as Dibenxothiapyran, Thiaxanthen, Thiaxanthene, or Thioxanthen) ($C_{13}H_{10}S$) [CAS 261-31-4]
coumarin (The "5 Patent, Claim 32)	a fluorescent dye derived from 2H-1-Benzopyran-2-one ($C_9H_6O_2$) [CAS 91-64-5].
fluorescein (The "5 Patent, Claim 32)	a fluorescent dye with a greenish-yellow fluorescence ($C_{20}H_{12}O_5$) [CAS 2321-07-5].
substance (The '220 Patent, Claim 22)	matter of particular or definite chemical constitution
closed system (The '220 Patent, Claim 22)	a system that is sealed to contain a fluid
	In the context of the claim language, closed system means a heating, cooling, or refrigeration system.
low-voltage lamp (The '220 Patent, Claim 22)	a lamp that operates on 12 volts or less
connected (The '220 Patent, Claim 22)	joined or linked together
illuminating (The '220 Patent, Claim 22)	directing light from a light source
emission of light (The '220 Patent, Claim 22)	to give off light
sanitization control step (claim 29)	step for controlling sanitization

Dkt. No. 131 at Ex. 1.

In view of the parties' agreements on the proper constructions of each of the identified terms, the Court adopts the parties' Agreed Constructions. The agreed constructions shall govern this case.

B. Disputed Terms

The parties request that the Court construe fifteen terms appearing in the Patents-in-Suit. These terms are: (1) "general class of naphthalimide dye structures;" (2) "predetermined period of time;" (3) "chemical

oxidation changes;" (4) dichroic white light reflector;" (5) "focusing reflector;" (6) "whereby said light emitted from said light source is restricted to a predetermined range effective to enhance the reemission of light from said substance;" (7) "naphthalimide;" (8) "dichroic white light reflector reflecting light primarily in an emission range having a wavelength between 300 and 600 nanometers;" (9) "substance;" (10) "dichroic filter;" (11) "predetermined range;" (12) "less than about 500 nm;" (13) "low heat-generating;" (14) predetermined wavelength range;" and (15) "primarily in the ultraviolet wavelength range."

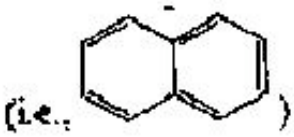
1. "general class of naphthalimide dye structures"

This term appears in Claim 1 of the '370 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] dye that incorporates an imide group

connected to a naphthalene group



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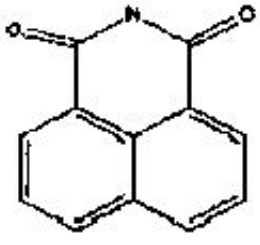
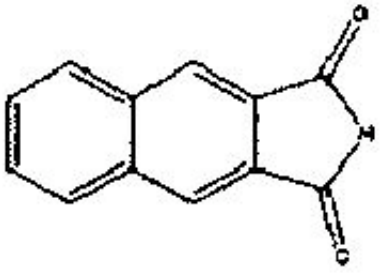
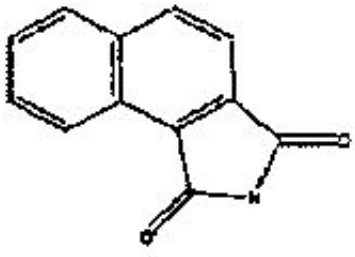






." Joint Claim Construction Chart ("JCCC"), Dkt. No. 131, Ex. 1 at 1-2. Defendant proposes this term means "[a] dye that is a derivative of 4-aminonaphthalimide, including N-substituted or N, N'-dialkyl-4-amino-1, 8-naphthalimides, including 4-butylamino-n-butylnaphthalimide, and including aryloxy-substituted perylene-3,4,9,10-tetracarboxylic acid diimides." JCCC at 1.

Plaintiff argues Defendant's construction is defective since the plain meaning of the claim does not require the dye to be a "4-amino" naphthalimide. Dkt. No. 131 at 9. Plaintiff also argues that "aryloxy-substituted perylene-3,4,9,10-tetracarboxylic acid" should be excluded from the construction since "perylene is not a naphthalimide and perylene fluorescent dyes are distinguished in the '370 Patent." Id. *citing* the '370 Patent, Dkt. No. 81, Ex. 4 at 1:47-67.

Defendant cites to a section from the Encyclopedia of Chemical Technology stating "naphthalimides ... are derivatives of 4-amino naphthalimide and are used in plastics." Dkt. No. 135 at 5 *quoting* KIRK-OTHMER, ENCYCLOPEDIA OF CHEMICAL TECHNOLOGY, vol. 4 (3rd Ed.), John Wiley & Sons, Dkt. No. 89, Ex. 1 (the "Kirk-Othmer reference"). Defendant argues that its construction "refers to a derivative of 4-amino naphthalimide but does not require that the dye is 4-amino naphthalimide *per se*." *Id*. at 6. Defendant also argues that "aryloxy-substituted perylene-3,4,9,10-tetracarboxydiimides are considered a subset of naphthalimide dyes by those of ordinary skill in the art." *Id*. *quoting* SYLKE HAREMSA, NAPHTHALIMIDE DYES AND PIGMENTS (2005), Wiley-VCH Verlag GmbH & Co., Dkt. No. 81, Ex. 2 (the "Haremsa reference") at 1 & 6. Defendant claims that its definition does not state that perylene is an naphthalimide but that "aryloxy-substituted perylene-3,4,9,10-tetracarboxylic acide diimides" are naphthalimides. *Id*. at 6-7. As to Plaintiff's argument that "perylene fluorescent dyes are distinguished in the '370 Patent," Defendant claims that the specification "does not define or describe naphthalimide dyes to exclude perylene-based dyes, but rather comments on their purported efficacy." Id. at 7.

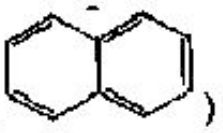
Plaintiff replies that Defendant's construction "unduly limits the claim term to a derivative of 4-aminonaphthalimide" and "improperly encompasses aryloxy-substituted perylene3,4,9,10-tetracarboxylic acid diimides." Dkt. No. 140 at 3. Plaintiff argues that Defendant's position is improperly based on extrinsic evidence when the intrinsic evidence contradicts its construction. *Id*. at 3-4. Plaintiff claims that the '370 patent excludes "aryloxy-substituted perylene-3,4,9,10-tetracarboxylic acid diimides" from the term "napthalimide." Id. at 4. Plaintiff also claims that the Kirk-Othmer and Haremsa references do not limit the construction to derivatives of 4-aminonaphthalimide. Id. at 5. Plaintiff further argues that its definition includes the relevant derivatives since its construction is "a dye that incorporates" various structures. Id. at 5-6.

(2) Construction

The parties have agreed to the construction of "naphthalimide" as it appears in Claim 12 of the '000 Patent. ("a dye that incorporates an imide group

(i.e., )

connected to a naphthalene group

(i.e., )

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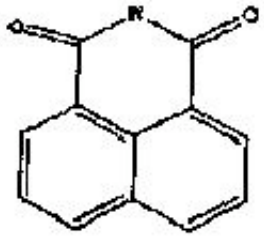
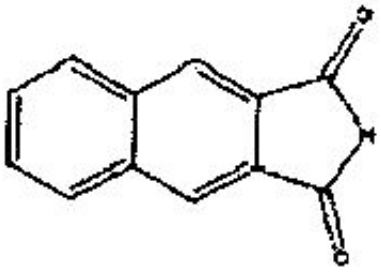
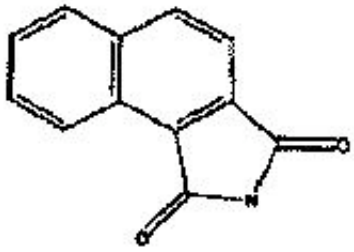






.") Although the '370 and '000 Patents do not belong to the same family of patents, the Court adopts this construction for the reasons discussed below FN1.

In explaining the background of the invention, the specification of the ' 370 Patent provides as follows:

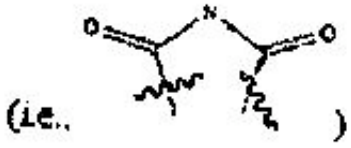
The use of these new alternative refrigerants has required the use of new kinds of refrigeration system lubricants such as synthetic polyalkylene glycols (PAG) and polyolesters (POE) and has rendered prior leak detection chemicals employing materials such as those described in U.S. Pat. Nos. 4,758,366 and 5,149,453, issued on Jul. 19, 1988 and Sep. 26, 1992, respectively, as largely ineffective. *These patents teach the use of perylene yellow fluorescent dyes formulated with mineral oils*. Mineral oil is a hydrocarbon. Hydrocarbons such as synthetic hydrocarbons (SHC), alkylbenzene (AB), and polyalphaolefins (PAO) may only be partially soluble in polyalkylene glycol and in polyolester containing systems. *The materials found in the above-referenced patents have been found unsuitable* in actual systems tests and laboratory analytical tests

for long term use in hermetic systems such as refrigeration, heating, ventilating and air conditioning systems employing the alternative HPC refrigerants. *The reason for the unsuitability of these perylene dyes in HPC systems is primarily due to thermal chemical instability*. The '370 Patent, 1:47-67.

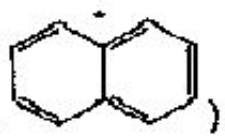
The specification providing that perylene dye has been "rendered ... ineffective" and "found unsuitable," indicates that perylene should be excluded from the term "general class of naphthalimide dye structures." Furthermore, in its February 9, 2004 Amendment, patentee distinguished the prior art reference, U.S. Patent No. 4,758,366 (the "Parekh reference"), stating that "perylene dyes are not effective in newer HFC containing refrigerant systems ..." *See* February 9, 1994 Amendment, Dkt. No. 83, Ex. 19-2 at BRT_ 00000219. Although Defendant cites to the Haremsa reference to support its argument that "aryloxy-substituted perylene-3,4,9,10-tetracarboxydiimides" is considered a subset of naphthalimide dyes to an ordinary person skilled in the art, the Court finds that the term should be construed in accordance with the specification without resorting to extrinsic evidence that contradicts the intrinsic evidence. *See* Intel Corp. v. VIA Technologies, Inc., 319 F.3d 1357, 1367 *citing* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed.Cir.1996) ("When an analysis of intrinsic evidence resolves any ambiguity in a disputed claim term, it is improper to rely on extrinsic evidence to contradict the meaning so ascertained."). Thus the Court excludes perylene dye from the construction. Although Defendant argues that its proposed definition "does not state that perylene per se is a [naphthalimide] ... [but that] the group of compounds known as 'aryloxy-substituted perylene-3,4,9,10-tetracarboxylic acid diimides' are [naphtahlimides]," since aryloxy-substituted perylene-3,4,9,10-tetracarboxylic acid diimides are a subset of perylene dyes, the Court finds that this term should be excluded from the construction as well.

As to Defendant's proposed language of "derivatives of 4-amino naphthalmide," the Court finds that there is nothing in the specification that warrants such a limiting construction. Although the Kirk-Othmer reference defines naphthalimides as "derivatives of 4-aminonaphthalimide," the Haremsa reference indicates that 4-aminonaphthalimide is simply one type of naphthalimide dye. *See* Dkt. No. 89, Ex. 1 at 2; *Id.,* Ex. 2 at 1-2. Thus, the Court does not limit to the term to "derivatives of 4-amino naphthalimide."

Thus, the Court finds no reason to depart from the agreed construction of the term as it appears in Claim 12 of the '000 Patent, and construes the term "general class of naphthalimide dye structures" to mean "dye structures that incorporate an imide group



connected to a naphthalene group

(i.e., )

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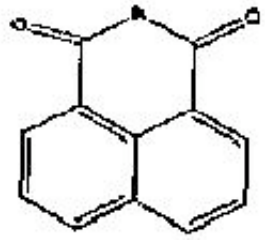
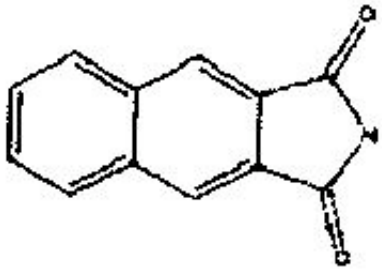
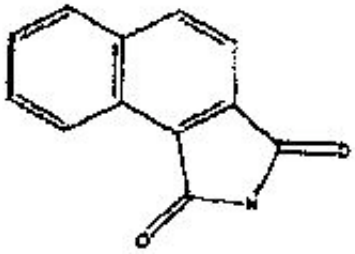






."

2. "predetermined period of time"

This term appears in Claim 1 of the '370 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a]n amount of time sufficient to circulate a dye to a leak site." JCCC at 3. Defendant proposes this term means "[a] period of time determined in advance as sufficient to allow mixing, for example, five minutes." Id. The parties' dispute centers around whether the time period must be determined in advance. Id.

Plaintiff argues that limitations from the specification should not be read into the claims and thus even though the "practical embodiment" provides 5 minutes as an example, a fixed quantity of time should not be required. Dkt. No. 131 at 10-11 *citing* Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 973 (Fed.Cir.1999); Kinik Co. v. Int'l Trade Comm'n, 362 F.3d 1359, 1364 (Fed.Cir.2004); Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904 (Fed.Cir.2004); Dkt. No. 131 *discussing* the '370 Patent, 2:39-43. Plaintiff also argues that the claim only requires that "the system be operated long enough for the dye to circulate throughout" and that Defendant's construction improperly adds another step of determining a range in advance. *Id*. at 11-12.

Defendant responds that the language "for example, five minutes" is non-limiting. Dkt. No. 135 at 8-9. Defendant argues that the Court must look to the words of the claim and give meaning to the term "predetermined." *Id*. at 9 *citing* Phillips v. AWH Corp., 415 F.3d at 1312-14; Merck & Co. v. Teva Pharms. USA Inc., 395 F.3d 1364, 1372 (Fed.Cir.2005). Defendant also argues that extrinsic evidence should be considered to give meaning to the term and cites to dictionary definitions providing that the term means to

"arrange in advance." *Id*. *citing* MSN ENCARTA WORLD DICTIONARY (2007 Microsoft); RANDOM HOUSE WEBSTER'S UNABRIDGED DICTIONARY 1522 (2d ed.2001). Defendant notes that "without some time frame delineated in advance, i.e., a predetermined amount of time, one would not know how long to circulate the dye before reaching the conclusion that the system is free from leaks." *Id*. at 10.

Plaintiff replies that it does not read the term "predetermined" out of the claim, but rather proposes an alternative interpretation of this element. Dkt. No. 140 at 6. Plaintiff argues that the term should be viewed in the context of the claim and that Defendant's construction "incorporate[s] a process limitation into the claims." *Id*. at 6-7. Plaintiff claims that since air conditioning systems come in a wide variety of sizes and strengths, it is more realistic to construe the term as "the amount of time required to operate the air conditioning system to allow the dye to circulate throughout the system" rather than a fixed number of minutes. *Id*. at 7.

(2) Construction

Claim 1 of the '370 Patent is a method claim consisting several steps, including the following step: "operating the system for a predetermined period of time to allow the mixture to mix with said combination of refrigerant and the refrigeration system lubricant." The '370 Patent, 4:12-14. Claims "must be read in view of the specification, of which they are a part." Phillips v. AWH Corp., 415 F.3d at 1315. The term is mentioned in two parts of the specifications: first, the summary of the invention provides that "the combination of refrigerant, lubricant and dye will be circulated throughout the entire hermetic refrigeration system;" second, the detailed description of the preferred embodiments provide that "[i]n a practical embodiment of the present invention ... [t]he system was then operated for 5 minutes to allow the dye mixture to mix with the mineral oil." The '370 Patent, 2:39-41, 3:32-45.

As an initial matter, the Court notes that limitations from the specifications should not be read into the claims. *See* Phillips v. AWH Corp., 415 F.3d at 1323; Kinik Co. v. Int'l Trade Com'n, 362 F.3d 1359, 1364-65 (Fed.Cir.2004) ("the claims are generally not limited to the specific examples of the preferred embodiments unless that scope was limited during prosecution."). Thus, the "practical embodiment" which was "operated for 5 minutes" cannot limit the term "predetermined period of time." Although Defendant argues that the language "for example, five minutes" in its proposed construction is "non-limiting, i.e., merely exemplary," it appears that the addition of this language was intended to limit the time period to a fixed number of minutes.

Similarly, Defendant's proposed construction includes the limitation that a period of time must be "determined in advance." Plaintiff argues that Defendant's construction introduces an additional process limitation of pre-selecting a specific amount of time into the claim. Dkt. No. 131 at 11-12; Dkt. No. 140 at 7. Defendant argues that this construction is necessary to give meaning to the term "predetermined." Dkt. No. 135 at 9. The Court agrees with the Defendant that Plaintiff's proposed construction renders the word "predetermined" superfluous. Mangosoft, Inc. v. Oracle Corp., 525 F.3d 1327, 1331 (Fed.Cir.2008) *quoting* Merck & Co. v. Teva Pharm, USA, Inc., 395 F.3d 1364, 1372 (Fed.Cir.2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.").

The plain language of the term indicates that whether the period of time is determined in advance or not, the time period should be sufficient "to allow the mixture to mix with [the] combination." The '370 Patent, 4:12-14. Since, as Plaintiff argues, the amount of time required for the mixture to mix would differ depending on the size and strength of the air conditioning system, it would be anomalous to require a specific amount of

time. *See* Dkt. No. 131 at 11-12; Dkt. No. 140 at 7. Having reached a conclusion after examining the intrinsic evidence, the Court finds it unnecessary to look to the dictionary definitions provided by Defendant. Finisar Corp. v. DirecTV Group, Inc., 523 F.3d 1323, 1328 *citing* Phillips v. AWH Corp., 415 F.3d at 1318.

The Court construes the term "predetermined period of time" to mean "a period of time sufficient to allow the mixture to mix, the period of time determined in advance based on the size and strength of the air conditioning system."

3. "chemical oxidation changes"

This term appears in Claim 1 of the '370 Patent.

(1) The Parties' Positions

The parties agree that this term means "[a] change in a chemical structure of a compound brought upon by transference of electrons from the compound undergoing oxidation to the oxidizing substance." JCCC at 5. However, the Defendant adds the following language: "[i]n the context of the claim language, 'without chemical oxidation changes' means that a fluorescent dye will not undergo oxidation during use causing a change in its chemical structure that would alter the fluorescent properties of the dye." Id.

Plaintiff argues that Defendant's proposed additional wording is "improper and unnecessary" since Defendant "seek[s] an interpretation that forbids any oxidation at all and any resulting change that would alter the fluorescent properties of the dye" when "some amount of oxidation can occur without significantly altering or otherwise destroying the fluorescent properties of the dye and the ability to detect leaks with the dye." Dkt. No. 131 at 12.

Defendant responds that it seeks only to "exclude those oxidation changes which alter the fluorescent properties of the dye." Dkt. No. 135 at 11.

Plaintiff replies that there is no reason to address the "fluorescent properties of the dye" in interpreting the phrase "chemical oxidation changes." Dkt. No. 140 at 8-9. Plaintiff argues that "[o]ne of ordinary skill in the art would not understand the three word phrase 'chemical oxidation changes' by itself to relate to fluorescent properties of the dye." *Id*. at 9. Plaintiff admits that "the significance of oxidation resistance is simply to provide capability for stable fluorescent indication of a leak" but argues that "fluorescent properties can be altered and yet the dye can still be present and 'provide capability for stable fluorescent indication of a leak.' " *Id*. Plaintiff further argues that there is nothing in the intrinsic evidence that is inconsistent with its proposed construction or supports Defendant's proposal and that "importation of additional limits from the specifications [are] expressly disapproved." *Id*. at 9-10.

(2) Construction

The relevant part of Claim 1 reads: "said dye ... remaining at said site without undergoing chemical oxidation changes to provide capability for stable fluorescent indication of a leak." The '370 Patent, 4:23-28. "[C]laim term[s] [should be construed] in the context of the particular claim in which the disputed term appears." Phillips v. AWH Corp., 415 F.3d at 1313. Plaintiff admits that "chemical oxidation changes" is significant due to its connection with the ability to provide stable fluorescent indication of a leak." *See* Dkt. No. 140 at 9. Thus, the Court interprets the claim term in conjunction with the phrase, "to provide capability for stable fluorescent indication of a leak." The '370 Patent, 4:25-27.

This concept in also discussed in the specification and the prosecution history. In the summary of the invention, the specifications provide: "It has been found that the new leak detection dyes from the general chemical naphthalimide dye class described herein have excellent thermal and oxidation stability up to 400 (deg.)F. and may be left inside the hermetic system for the location of leaks on future occasions." The '370 Patent, 2:31-35. The specifications do not suggest that "without oxidation changes" means that there must be no alteration in the fluorescent dye properties. In the notice of allowance dated February 16, 1995, the examiner stated that "[t]he prior art fails to disclose a method of detecting leaks in a refrigeration system ... when the dye, refrigerant, and lubricant mixture seeps thru, appears and then remains at such leak site without undergoing chemical oxidation changes." Examiner's February 16, 2005 Amendment, Dkt. No. 83, Ex. 17 at BRT_00000104. The phrase used by the examiner is the same as that in Claim 1. Thus, the Court finds nothing in the specification or the prosecution history supports Defendant's restrictive construction that limits "without chemical oxidation changes" to mean that the dye will not undergo oxidation which would alter the fluorescent properties of the dye. The Court finds that the "without chemical oxidation changes" should be construed so that the fluorescent properties can be altered to some degree, so long as it does not affect the ability to detect leaks with the dye.

The Court construes the term "chemical oxidation changes" to mean "[a] change in a chemical structure of a compound brought upon by transference of electrons from the compound undergoing oxidation to the oxidizing substance." In the context of the claim language, "without chemical oxidation changes" means that the fluorescent dye will not undergo oxidation during use causing a change in its chemical structure that would affect the capability for stable fluorescent indication of a leak.

4. "dichroic white light reflector"

This term appears in Claims 1 and 19 of the '066 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] reflector that reflects light and includes a coating that operates on the principle of interference created by multiple very thin layers." JCCC at 7. Defendant proposes this term means "[a] reflector that produces reflection properties through interference created by many (up to several dozen) very thin layers." Id.

Plaintiff argues that Defendant incorporates "vague and unsupported numerical limitations into the number of layers included in a dichroic coating." Dkt. No. 131 at 15. Plaintiff claims that Defendant's addition of the phrase "many (up to several dozen)" is an attempt to import limitations from the specification and the term "many" will create further disputes. *Id*. at 15-16.

Defendant responds that its proposal is based on the patent itself. Dkt. No. 135 at 12 *citing* the '066 Patent, 3:22-27. Defendant argues that the language "many (up to several dozen)"

is a clause directly taken from the intrinsic evidence and that any vagueness creates a different problem of the patent being defective. *Id*. at 12-13.

Plaintiff replies that its interpretation is correct since it "honors the ordinary and customary meaning ... as understood by one of ordinary skill in the art." Dkt. No. 140 at 10. Plaintiff also argues that the language "many (up to several dozen)" and "produces reflection properties through interference" is impermissibly

limiting based on the specification. *Id*. at 10-11. Plaintiff explains that one of ordinary skill in the art would appreciate that reflection properties are not necessarily produced through interference alone. *Id*.

(2) Construction

The "dichroic white light reflector" is discussed in the summary of the invention of the '066 Patent. The relevant section provides as follows:

When material to be examined requires detection of fluorescence, the wavelength may be controlled by use of reflectors with dichroic coatings. Dichroic coatings produce their reflection properties through the phenomenon of interference. They consist of many (up to several dozen) very thin layers, each only a quarter of a wavelength of the light thick, alternating between materials of high and low refractive index. The '066 Patent, 3:18-27.

As a general matter, it is impermissible to import limitations from the specification into the claims. *See* Phillips v. AWH Corp., 415 F.3d at 1323. However, "[s]tatements that describe the invention as a whole, rather than statements that describe only preferred embodiments, are more likely to support a limiting definition of a claim term." C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 864 (Fed.Cir.2004) (claimed plug limited to plugs with a pleated surface when the summary of the invention and the abstract described a(n) implant/plug with a pleated surface); Genzyme Corp. v. Transkaryotic Therapies, Inc., 346 F.3d 1094, 1099-1101 (Fed.Cir.2003); *See also* Wireless Agents LLC v. Sony Ericsson Mobile Communications AB, 189 Fed. Appx. 965, 967 (Fed.Cir.2006) ("This description is not merely referring to a preferred embodiment; rather, as part of the 'Summary of the Invention,' it is 'commensurate with the invention as claimed.' ").

In the summary of the invention, which is the only part of the patent where the dichroic reflector is mentioned, it is explained that "[d]ichroic coatings produce their reflection properties through the phenomenon of interference." The '066 Patent, 3:22-24. No part of the summary of the invention or the rest of the specification discusses any other method by which reflection properties are produced. The summary of the invention also notes that the "dichroic coating" consists of "many (up to several dozen) very thin layers." Although Plaintiff objects to the phrase "many (up to several dozen) very thin layers," it appears that Plaintiff's proposed construction of "multiple very thin layers" was also derived from the same part of the specification. In addition, although Plaintiff argues that its proposal is based on the ordinary and customary meaning of the term as known by one of ordinary skill in the art, it does not support its position with any intrinsic or extrinsic evidence. Dkt. No. 140 at 10-11. At the November 27, 2007 hearing, Plaintiff argued that use of the word "multiple" which means "more than one" can avoid confusion. Dkt. No. 145 at 22. However, the Court agrees with the Defendant that the use of "multiple" which means "more than one" conflicts with the specification that provides for "many (up to several dozen)" very thin layers. Thus, the Court finds that the portion of the specification that discusses dichroic coatings describes the invention as a whole and should be utilized in defining the term "dichroic white light reflector."

Furthermore, as to the first part of Plaintiff's proposal where Plaintiff defines "dichroic white light reflector" as "a reflector that reflects light and includes [a dichroic coating]," the Court finds no support for addition of the first portion of its construction. Since the adjective "dichroic" modifies the term "white light reflector," the entire phrase is limited to *dichroic* white light reflectors that reflect light through its dichroic coating. *See* Wronke v. Marsh, 787 F.2d 1569, 1575-76 (Fed.Cir.1986).

Thus, the Court construes the term "dichroic white light reflector" to mean "a reflector that includes a coating that produces reflection properties through interference created by many (up to several dozen) very thin layers."

5. "focusing reflector"

This term appears in Claims 1 and 19 of the '066 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] reflector that concentrates light." JCCC at 8. Defendant proposes this term means "[a] reflector that concentrates the light generated by the built-in lamp to a more or less small or defined spot at a distance from the reflector and its axis." Id. Plaintiff explains that "the initial portions of parties construction are the same and are quotes from the specification." Dkt. No. 131 at 6 *citing* the '066 Patent at 2:57-60.

Plaintiff argues that Defendant's addition of "generated by the built-in lamp to a more or less small or defined spot at a distance from the reflector and its axis" is an impermissible importation of the specification into the claim term. Dkt. No. 131 at 16.

Defendant responds that Plaintiff has "no basis to edit the explicit definition from the specification" selecting only a portion of a sentence from the specification. Dkt. No. 135 at 13. Defendant argues that its proposed construction "reflects the explicit teaching of the specification." *Id*.

Plaintiff replies that Defendant incorrectly imports limitations from examples provided in the specification. Dkt. No. 140 at 11. Plaintiff argues that Defendant provides no explanation as to why the entire passage defines a "focusing reflector" and claims that the "specification provides a discussion of focusing reflectors generally and describes examples where the reflector concentrates the light generated by the built-in lamp to a more or less small or defined spot at a distance from the reflector and its axis." *Id*. at 12.

(2) Construction

The relevant portion of the summary of the invention provides as follows: "The reflectors provided are often focusing reflectors which concentrate the light generated by the built-in lamp to a more or less small or defined spot at a distance from the reflector and its axis." The '066 Patent, 2:57-60. As explained above, statements summarizing the invention as a whole "are more likely to support a limiting definition of a claim term." *See* C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d at 864.

However, the Court finds that the Defendant's construction is unduly restrictive since the phrase in the summary of the invention goes beyond assisting in the definition of "focusing reflector" by explaining that the light is generated by "the built-in lamp" and that the spot is "at a distance from the reflector and its axis." *See* Phillips v. AWH Corp., 415 F.3d at 1323. Claims 1 and 19 show that a "lamp" is an element separate from the "focusing reflector" that is part of a "lamp assembly." The '066 Patent, 6:49-54 & 8:17-24. Accordingly, the Court finds no reason to limit "focusing reflectors" to one that concentrates light generated by a "built-in lamp."

Thus, the Court construes the term "focusing reflector" to mean "a reflector that concentrates light to a more or less small or defined spot."

6. "whereby said light emitted from said light source is restricted to a predetermined range effective to enhance the reemission of light from said substance"

This term appears in Claims 1 and 19 of the '066 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[t]he light source is configured to emit light in a range of wavelengths sufficient to enhance emission of light from a substance." JCCC at 9. Defendants propose this term means "[l]ight emitted from said light source is restricted to a range determined in advance effective to enhance the reemission of light from said substance." Id.

The parties' positions parallel the arguments made above in relation to the term "predetermined period of time." Dkt. No. 131 at 16-17; Dkt. No. 135 at 14; Dkt. No. 140 at 12-13.

(2) Construction

For the same reasons explained above in connection with the construction of the term "predetermined period of time," the Court construes the term "whereby said light emitted from said light source is restricted to a predetermined range effective to enhance the remission of light from said substance" to mean "light emitted from said light source is restricted to a range determined in advance effective to enhance the remission of light from said substance."

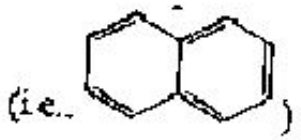
7. "naphthalimide"

This term appears in Claim 15 of the '066 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] dye that incorporates an imide group.

connected to a naphthalene group



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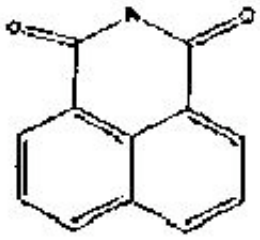
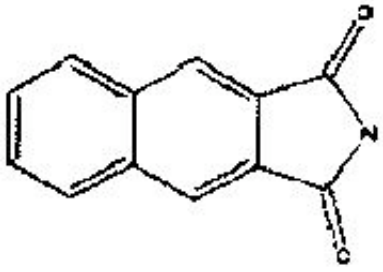
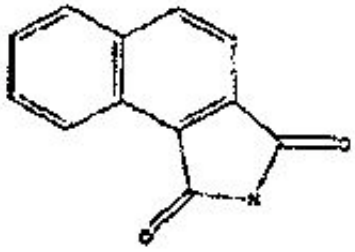


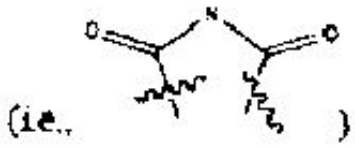




." JCCC at 9-11. Defendants propose this term means "a derivative of 4-aminonaphthalimide, including N-substituted or N,N'-dialkyl-4-amino-1,8-naphthalimides, including 4-butylamino-nbutyl naphthalimide, and including aryloxy-substituted perylene-3,4,9,10-tetracarboxylic acid diimides." *Id*. at 9-10. These are the same constructions proposed for the term "general class of naphthalimide dye" construed above.

(2) Construction

For the same reasons explained above in connection with the construction of the term "general class of naphthalimide dye structures," the court construes the term "naphthalimide" to mean "a dye that incorporates an imide group



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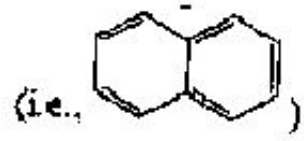

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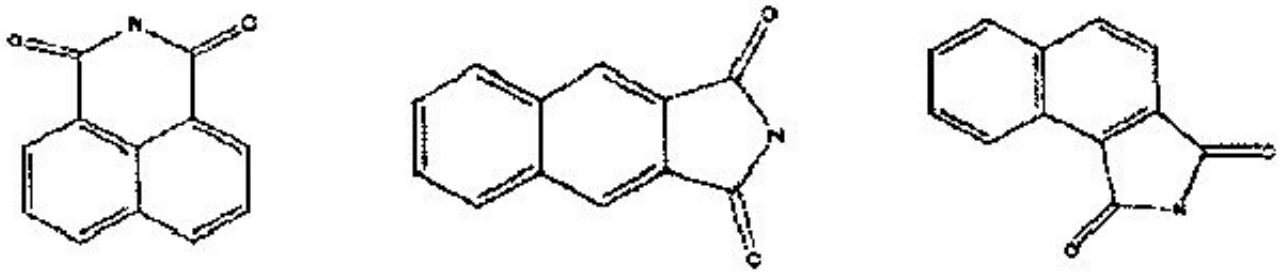

."

8. "dichroic white light reflector reflecting light primarily in an emission range having a wavelength between 300 and 600 nanometers"

This term appears in Claim 19 of the '066 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] reflector that reflects light and includes a coating that operates on the principle of interference created by multiple very thin layers, reflecting for the most part (over 50%) between 300-600 nm." JCCC at 13. Defendant proposes this term means "[a] reflector that produces reflection properties through interference created by many thin layers, reflecting for the most part (over 50%) between 300-600nm." Id. The difference in the parties positions centers around whether or not the term "many" should be included.

Similar to the discussion regarding the term "dichroic white light reflector," Plaintiff argues that the term "many" is vague and impermissibly limits the claim term. Dkt. No. 131 at 19; Dkt. No. 140 at 15-16. Defendant reiterates that "many" should be included based on the language in the specification. Dkt. No. 135 at 15.

(2) Construction

For the same reasons explained above in connection with the construction of the term "dichroic white light reflector," the Court construes the term "dichroic white light reflector reflecting light primarily in an emission range having a wavelength between 300 and 600 nanometers" to mean "a reflector that includes a coating that produces reflection properties through interference created by many (up to several dozen) very thin layers, reflecting for the most part (over 50%) between 300-600 nm."

9. "substance"

This term appears in Claims 25 and 37 of the '306 Patent.

(1) the parties' positions

Plaintiff proposes this term means "[a] material." JCCC at 20. Defendant proposes this term "refers to a single substance which reemits light at a wavelength greater than the wavelength of light emitted from the light source." Id.

Plaintiff argues that use of the indefinite article "a" means "one or more" and does not limit the substance to a single substance. Dkt. No. 131 at 22-23 *citing* KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed.Cir.2000). Plaintiff also argues that nothing in the specification or prosecution history introduces Defendant's restriction that the substance "reemits light at a wavelength ... from the light source." *Id*. at 23.

Defendant responds that Plaintiff's proposal is unhelpful to the jury and unsupported by intrinsic evidence. Dkt.No. 135 at 15. Defendant argues that the specification supports "only a single substance which reemits light at a wavelength greater than the wavelength of the light emitted from the light source." *Id*. *quoting* the '306 Patent, 7:20-24.

Plaintiff replies that nothing in claim language or intrinsic evidence "suggests that every reference [to the term "substance"] must be to the exact same substance or a single substance." Dkt. No. 140 at 18. Plaintiff also reiterates that the addition of the language "reemits light a wavelength ... from the light source" "amounts to an impermissible importation of language from the specification into the claim term." *Id*.

(2) Construction

As an initial matter, the Court agrees with the Plaintiff that the use of article "a" does not limit "substance" to a single substance. *See* KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351 ("Unless the claim is specific as to the number of elements, the article 'a' receives a singular interpretation only in rare circumstances when the patentee evinces a clear intent to so limit the article"). The specification of the '306 Patent does not suggest that "substance" in Claim 25 is limited to a single substance. To the contrary, the background of the invention suggests that "emissive substances" can be "fluorescent of phosphorescent dyes" that include "naphthalimide, perylene, thioxanthane, coumarin, or fluorescein, and derivatives thereof." The '306 Patent, 1:24-28.

In the detailed description of the preferred embodiments, the relevant part of the specification provides: "Switch 18 is utilized to turn the light source on or off during usage of the present novel light source to permit detection of the substances which emit light at wavelengths greater than the wavelength of the light emitted from the light source used to excite the substance." The ' 306 Patent, 7:20-24. Similarly, the first element of Claim 1 of the '306 Patent provides: "A light source for examination of a substances which emits light at a wavelength greater than a wavelength of light emitted from the light source ..." The '306 Patent, 8:5-7.

Although Defendant attempts to incorporate the language from the specification of the patent into the term "substance," the Court finds that this is an improper attempt to import limitations from the specification into the claim term. *See* Phillips v. AWH Corp., 415 F.3d at 1323. Cases such as *Acumed v. Stryker Corp*. lend further support for excluding this limitation. Acumed v. Stryker Corp., 483 F.3d 800 (Fed.Cir.2007). In *Acumed v. Stryer Corp.,* where the written description stated that "[Figure 2] illustrates a plurality of transverse holes, each of which is ... perpendicular to the portion of the nail axis at the butt portion 14 of the nail," the Court found that "[t]his implies that a "transverse" hole need not be perpendicular." Acumed v. Stryker Corp., 483 F.3d at 807; *See also* Phillips at 1314 (use of term "steel baffle" in claim "strongly

implied that term 'baffles' does not inherently mean objects made of steel."). Similarly, the reference throughout the patent to "substances which emit light at wavelengths greater than the wavelength of the light emitted from the light source" implies that the "substance" by itself is not required to "emit light at wavelengths greater than the wavelength of the light emitted from the light source." Thus, the Court finds that this limitation should not be part of the construction.

At the November 27, 2007 Markman hearing, in noting that the agreed construction for "substance" in Claim 22 of the '220 Patent was a "matter of particular or definite chemical constitution," Plaintiff's counsel also stated that it had no objection to this construction for all occurrences of the term "substance." Dkt. No. 149 at 34. The Court notes that the '306 and '220 Patents are related patents FN2 and that the detailed description of the ' 306 Patent is incorporated in the specification of the ' 220 Patent.

Thus, the Court construes "substance" to mean "matter of particular or definite chemical constitution."

10. "dichroic filter"

This term appears in Claims 1 and 28 of the "5 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] filter that filters light and includes a coating that operates on the principle of interference created by multiple very thin layers." JCCC at 23. Defendant proposes this term means "[a] filter that operates on the principle of interference created by many (up to several dozen) very thin layers." Id. The parties agree that the dispute relates to "dichroic" and incorporate their arguments made in for the term "dichroic white light reflector." Dkt. No. 131 at 24-25; Dkt. No. 135 at 16; Dkt. No. 140 at 19-20.

(2) Construction

For the same reasons explained above in connection with the construction of the term "dichroic white light reflector," the Court construes the term "dichroic filter" to mean "a filter that includes a coating that produces reflection properties through interference created by many (up to several dozen) very thin layers."

11. "predetermined range"

This term appears in Claims 1 and 28 of the "5 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] specific range." JCCC at 24. Defendant proposes this term means "[a] previously determined range." Id. The arguments made by the parties parallel the arguments made in connection with the term "predetermined period of time." Plaintiff argues that Defendant's construction "improperly introduces an additional method step into the claim" and Defendant argues that the word "predetermined" should be given meaning. Dkt. No. 131 at 25; Dkt. No. 135 at 16-17.

(2) Construction

For the reasons discussed above in the construction of "predetermined period of time," the Court construes

the term "predetermined range" to mean "a range determined in advance."

12. "less than about 500 nm"

This term appears in Claim 22 of the '220 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[l]ess than about 500 nanometers." JCCC at 29. Defendant proposes this term means "[l]ight having a wavelength less than 500 nm." Id.

Plaintiff argues that its construction follows the ordinary meaning and Defendant improperly reads an absolute requirement into the term and deletes the word "about" from the claim. Dkt. No. 131 at 27. Defendant claims that the term "about" is vague and that its proposal is more helpful to the jury by setting the "literal upper boundary." Dkt. No. 135 at 18.

(2) Construction

"When a word of degree is used the district court must determine whether the patent's specification supplies some standard for measuring the scope of the phrase." Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1351 (Fed.Cir.2005) *quoting* Seattle Box Co. v. Industrial Crating & Packing, Inc., 731 F.2d 818, 826 (Fed.Cir.1984). "Such broadening usages as 'about' must be given reasonable scope; they must be viewed by the decisionmaker as they would be understood by persons experienced in the field of the invention. Although it is rarely feasible to attach a precise limit to 'about,' the usage can usually be understood in light of the technology embodied in the invention." Modine Manufacturing Co. v. U.S. International Trade Commission, 75 F.3d 1545, 1554 (Fed.Cir.1996), reversed on other grounds; *See also* BJ Services Co. v. Halliburton Energy Services, Inc., 338 F.3d 1368, 1372 (Fed.Cir.2003) ("The question becomes whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification.").

Throughout the specification and claims, the patentee refers to varying wavelength ranges with use of the term "about." *See e.g.,* the '220 Patent, 4:20 & 26. There is nothing in the specification or claims to suggest that the patentee intended to limit "about 500 nanometers" to "exactly 500 nanometers." *See* Merck & Co., Inc., v. Teva Pharmaceuticals USA, Inc., 395 F.3d at 1369-1372. Thus, the Court finds Defendant's proposal of removing the term "about" unsupported by the specification.

The Court also finds that the specification, claims, and prosecution history do not provide for an alternative reading that suggests the higher limit of "less than about 500 nm."

The specification of the patent is inconclusive in construing this term since it merely provides that the wavelength of the light provided is between about 300 to 750 nanometers. *See* 4:18-40 FN3. Similarly, the claims are unhelpful in determining the upper limit for the term. Independent claims 27, 28, and 29 dependent on claim 22 collectively show that the term "less than about 500nm" must be inclusive of (but not limited to) the following ranges: "primarily in the blue wavelength range," "primarily in the ultraviolet wavelength range," and "predominantly between 300 and 500 nanometers." The ' 220 Patent, 10:25-37. The specification teaches that the blue wavelength range includes a wavelength between 400 and 500 nanometers and the ultraviolet wavelength range includes a wavelength between about 300 and 400 nanometers. *Id*. at 4:24-29. Although this shows that the higher limit of the term "less than about 500nm" must be at least 500

nanometers in order to be inclusive of these ranges, the claims do not indicate the maximum value that would be encompassed by the term.

In the November 22, 2002 Amendment, the patentee distinguished U.S. Patent No. 4,047,033 (the "Malmberg reference") by stating that "Malmberg does not use a low-voltage lamp that emits light with a wavelength within a predetermined range less than about 500 nm because 500 nm is at the opposite end of the spectrum from the infra-red radiation that Malmberg identifies." November 22, 2002 Amendment, Dkt. No. 86, Ex. 24 at BRT_0000079-00000800. Although this portion of the prosecution history teaches that the wavelength of "about 500 nanometers" is less than the wavelength range of infra-red radiation, this still leaves a wide range for what may consist the maximum wavelength of "less than about 500 nanometers."

In the absence of a patentee's clear expression of intent to act as its own lexicographer, the Court finds that the term should be given its ordinary meaning of "approximately." *See* Merck & Co., Inc., v. Teva Pharmaceuticals USA, Inc., 395 F.3d at 1369-1372.

Thus the Court construes the term "less than about 500nm" to mean "less than approximately 500 nanometers."

13. "low heat-generating"

This term appears in Claim 22 of the '220 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] lamp that does not burn a user or cause materials in the vicinity of the leak detection to ignite, including a low-voltage light emitting diode." JCCC at 30. Defendant proposes this term means "[a] lamp that generates too little heat to burn a user or cause materials in the vicinity of the leak detection to ignite, including a low-voltage light emitting diode." Id.

Plaintiff argues that the patent specification "does not require that every constituent aspect of the lamps ... be absolutely incapable of burning under any circumstances." Dkt. No. 131 at 28 *citing* the '220 Patent, 8:41-45. Plaintiff also claims that Defendant's construction is deficient since "it seeks to construe the word 'heat-generating' in reference to itself ('generates')." Id. Plaintiff further urges that the use of "thermal shielding" should not be excluded from the scope of the claim term. *Id*.

Defendant responds that Plaintiff's proposal "encompasses lamps which generate substantial heat ... but which may be shielded to protect against burning the user" while its proposal is consistent with the concept of "low heat-generating." Dkt. No. 135 at 18-19. Defendant argues that although both parties are arguing for the same result, Plaintiff's construction ignores the plain meaning of the term. *Id*. at 19.

Plaintiff reiterates that its proposed construction is supported by the specification. Dkt. No. 140 at 23. Plaintiff argues that Defendant provides no support for excluding "the use of thermal shielding." *Id*. Plaintiff further claims that Defendant introduces ambiguity by reciting "generates too little heat." *Id*.

(2) Construction

The relevant portion of the detailed description of the patent provides as follows: "Low heat generating lamps can improve safety when detecting leaks. *Low heat generating lamps do not produce heat that can*

burn a user of the light source or cause materials in the vicinity of the leak detection to ignite." The '220 Patent, 8:41-45.

Defendant's proposed construction appears to comport with not only the "ordinary and customary meaning," but also seems adequate in light of the specification. Phillips. Since low heat generating lamps *do not produce* heat that can burn the user or cause materials to ignite according to the specification, this excludes lamps that generate substantial heat yet are shielded from burning the user or igniting materials.

Such a construction is also consistent with the prosecution history. In patentee's January 6, 2003 Amendment, to overcome the rejection over Cooper, patentee distinguished Cooper by stating that, unlike the "low heat generating lamp" in their invention, Cooper "isolates, distributes, or dissipates heat from a 'high temperature' lamp." Since patentee distinguished a "high temperature" lamp, this seems to indicate that patentee also excluded a high temperature lamp with a thermal shield.

Thus, the Court construes the term "low heat-generating" to mean "a lamp that generates too little heat to burn a user or cause materials in the vicinity of the leak detection to ignite, including a low-voltage light emitting diode."

14. "predetermined wavelength range"

This term appears in Claim 28 of the '220 Patent.

(1) The Parties' Positions

Plaintiff proposes this term means "[a] known wavelength range." JCCC at 30. Defendant proposes this term means "[a] range of wavelengths determined beforehand." Id.

Similarly to its arguments for "predetermined period of time," Plaintiff argues that Defendant improperly inserts a temporal requirement and introduces an additional method step into the claim. Dkt. No. 131 at 28-29; Dkt. No. 140 at 23-24. Defendant incorporates its prior arguments on "predetermined." Dkt. No. 135 at 19.

(2) Construction

For the reasons discussed above in the construction of "predetermined period of time," the Court construes the term "predetermined wavelength range" to mean "a wavelength range determined in advance."

15. "primarily in the ultraviolet wavelength range"

This term appears in Claim 28 of the '220 Patent.

(1) The Parties' Positions

Plaintiff proposes this terms means "[l]ight having a wavelength primarily between 300 and 400 nm." JCCC at 31. Defendant proposes this term means "[f]or the most part (over 50%) in the region of the electromagnetic spectrum between visible light and X-rays, including 300-400 nm." Id.

Plaintiff argues that there is no support for Defendant's complicated proposal. Dkt. No. 131 at 29; Dkt No.

140 at 24. Defendant argues that its proposed construction gives guidance to the jury as to the meaning of "primarily" and "ultraviolet." Dkt. No. 135 *citing to* Merriam-Webster Online Dictionary, Dkt. No. 89 at Ex.9-10.

(2) Construction

As an initial matter, the Court notes that the parties, in construing the term "dichroic white light reflector reflecting light primarily in an emission range having a wavelength between 300 and 600 nanometers," agreed that "primarily" means "for the most part (over 50%)." The Court finds that this definition comports with the "ordinary and customary meaning" of the word. Phillips v. AWH Corp., 415 F.3d at 1312-13.

The Court also notes that the parties' agreed construction for the term "ultraviolet wavelength region" in Claim 25 of the '306 Patent is "the region of the electromagnetic spectrum between visible light and X-rays, including 300-400 nm." Dkt. No. 131, Ex. 1 at 20. The '220 Patent is a continuation-in-part of the "5 Patent which is a continuation-in-part of the '306 Patent and shares significant overlap in the specification with the '306 Patent. *See* the '220 Patent; *also compare Id*. at 1:1-8:12 *with* the '306 Patent at 1:1-8:2. The Court also finds that this construction is consistent with the "ordinary and customary meaning" of the word. Phillips v. AWH Corp., 415 F.3d at 1312-13.

Furthermore, this construction is consistent with the principles of claim construction.

The summary of the invention provides that "[i]n the case of the ultraviolet reflector, only the ultraviolet wavelength range (e.g., between about 300 and 400 nanometers) emitted by the lamp is reflected." Since claim terms should not be construed to exclude the preferred embodiment, this term should be interpreted to include the wavelength of "between about 300 and 400 nanometers." *See* Primos, Inc. v. Hunter's Specialties, Inc., 451 F.3d 841, 848 *citing* Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1341 (Fed.Cir.1999) ("[W]e ... should not normally interpret a claim term to exclude a preferred embodiment."). Although Defendant cites to the Merriam-Webster Online Dictionary which defines "ultraviolet" as "situated beyond the visible spectrum at its violet end-used of radiation having a wavelength shorter than wavelengths of visible light and longer than those of X-rays" and "X-rays" as having wavelengths of under 100 angstroms (or 10 nanometers), the Court finds is unnecessary to look to extrinsic evidence at this time. *See* Intel Corp. v. VIA Technologies, Inc., 319 F.3d at 1367; *See* Dkt. No. 89 at Ex. 9 & 10.

Thus, the Court construes "primarily in the ultraviolet wavelength range" to mean "for the most part (over 50%) in the region of electromagnetic spectrum between visible light and X-rays, including 300 to 400 nanometers."

V. CONCLUSION

Accordingly, the Court hereby **ORDERS** the disputed claim terms construed consistent herewith.

FN1. The Court also notes that the parties make the same arguments for the construction of the term in both the '370 Patent and the '066 Patent, even though the patents do not belong to the same family of patents and do not share the same specification.

FN2. The '306 Patent is a continuation-in-part of the application that issued as the '066 Patent and the

application that issued as the ' 000 Patent. The '220 Patent is continuation-in-part of the application that issued as the "5 Patent and the application that issued as the '000 Patent. The "5 Patent is a continuation-in-part of the application which issued as the '066 Patent. Thus, the two patents stem from the same parent applications.

FN3. ("Among the best known members of the dichroic family are the cold-light reflectors which reflect visible light between about 300 and 750 nanometers ...") ("The reflectors can reflect the blue wavelength range and/or the ultraviolet wavelength range. In the case of the blulight reflector, only the blue wavelength range of the spectrum (e.g., between 400 and 500 nanometers) is reflected. In the case of the ultraviolet reflector, only the ultraviolet wavelength range (e.g., between about 300 and 400 nanometers) emitted by the lamp is reflected.") "cold-light reflectors can excite emissive substances well since many emissive substances are excited by light in the wavelength range that is reflected by cold-light reflectors (i.e., 300 to 500 nanometers). Some white-light reflectors can excite emissive substances well since many emissive substances can be excited by light in the wavelength range that is reflected by the white-light reflectors (i.e., 400 to 700 nanometers)").

E.D.Tex.,2008.
Bright Solutions, Inc. v. Tire Seal, Inc.