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UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA

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LIGHT GUARD SYSTEMS, INC.,

Plaintiff,

v.

SPOT DEVICES, INC.,

Defendant.

3:10-cv-0737-LRH-RAM

ORDER

This is a claim construction order for United States Patent number 6,384,742 (“the ‘742 patent”). The parties have submitted seven terms and phrases for construction. A full round of claim construction briefing (Doc. ##45, 46, 55, 56¹) and a *Markman* claim construction hearing preceded this order.

I. Facts and Background

Plaintiff Light Guard Systems, Inc. (“Light Guard”) is a California corporation that manufactures and distributes in-roadway warning light (“IRWL”) systems. An IRWL system is a traffic warning system within the roadway that alerts approaching traffic to the presence of a pedestrian in a crosswalk. Light Guard is the assignee and sole owner of the ‘742 patent issued on May 7, 2002, to Light Guard founder Michael A. Harrison (“Harrison”). A copy of the patent, titled

¹ Refers to the court’s docket number.

1 “Pedestrian Crosswalk Signal Apparatus - Pedestrian Crosswalk,” is attached as Exhibit A to the
2 complaint. Doc. #1, Exhibit A.

3 Defendant Spot Devices, Inc. (“Spot Devices”) is a Nevada corporation that also
4 manufactures and distributes IRWL systems including the RS 200 and RS 320 IRWL systems. *See*
5 Doc. #3, Harrison Decl., Exhibit E-1 (RS 320); Exhibit I (RS 200).

6 On November 23, 2010, Light Guard filed a complaint against Spot Devices for patent
7 infringement alleging that the RS 200 and RS 320 designs infringe Claim 1 of the ‘742 patent. Doc.
8 #1. Claim 1 describes:

9 A pedestrian crosswalk signal apparatus to alert approaching vehicle traffic to the
10 presence of a pedestrian in a pedestrian crosswalk, said pedestrian crosswalk signal
apparatus comprising:

11 a roadway, said roadway having a surface;

12 a plurality of signal head members mounted on said roadway surface and
13 extending at least some distance across said roadway and above said roadway surface
14 to at least partially designate a pedestrian crosswalk, each of said signal head
members conditioned to withstand contact by vehicle traffic, each of said signal head
15 members including at least one light source adapted to direct a beam of light from
said roadway surface in the direction of the approaching vehicle traffic and away
16 from the pedestrian crosswalk, and adjacent to and generally parallel to said roadway
surface; and

17 activation means to selectively illuminate said plurality of signal head members
light sources to warn the drivers of the approaching vehicles that the pedestrian has
18 entered the pedestrian crosswalk.

19 Doc. #1, Exhibit A, ‘742 Patent, Col. 8:2-22.

20 After carefully considering the briefs and other materials submitted by the parties, the
21 record before the court, and the arguments of counsel at the December 16, 2011 *Markman* claim
22 construction hearing, the court issues this order construing the disputed claim terms.

23 **II. Legal Standard**

24 “It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to
25 which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312
(Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*,
26 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Accordingly, the purpose of claim construction is to

1 “determin[e] the meaning and scope of the patent claims asserted to be infringed.” *Markman v.*
2 *Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370
3 (1996). The court, rather than the jury, must resolve a dispute raised by the parties regarding the
4 proper scope of the claims. *O2 Micro Intern. Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d
5 1351, 1360 (Fed. Cir. 2008) (citations omitted).

6 The “objective baseline from which to begin claim interpretation” is “the ordinary and
7 customary meaning of a claim term.” *Phillips*, 415 F.3d at 1312-13. This refers to “the meaning
8 that the term would have to a person of ordinary skill in the art in question at the time of the
9 invention.” *Id.* at 1313. The patent is read “not only in context of the particular claim in which the
10 disputed term appears, but in the context of the entire patent, including the specification.” *Id.* In
11 certain cases, “the ordinary meaning of claim language as understood by a person of skill in the art
12 may be readily apparent even to lay judges, and claim construction in such cases involves little
13 more than the application of the widely accepted meaning of commonly understood words.” *Id.* at
14 1314. In other cases, the claim term may have a particular meaning in the field of art that is not
15 immediately clear. The court must examine those sources available to the public to show what a
16 person skilled in the art would have understood the disputed claim language to mean. *Id.* Those
17 sources include “words of the claims themselves, the remainder of the specification, the
18 prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of
19 technical terms, and the state of the art.” *Id.*

20 The claim language bears considerable importance to the claim interpretation. *Vitronics v.*
21 *Conceptornic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). The claims themselves can provide
22 substantial guidance to the meaning of a claim. *Phillips*, 415 F.3d at 1314-15. The “context in
23 which a term is used in the asserted claims can often illuminate the meaning of the same term in
24 other claims.” *Id.* at 1314. Furthermore, “the presence of a dependent claim that adds a particular
25 limitation gives rise to a presumption that the limitation in question is not present in the
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1 independent claim.” *Id.* at 1315.

2 The claims must also be read in view of the specification. “[T]he specification ‘is always
3 highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best
4 guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics*, 90 F.3d at 1582). The
5 specification, as required by statute, describes the process of making and using the invention, and
6 “[t]hus claims must be construed so as to be consistent with the specification, of which they are a
7 part.” *Merck & Co. v. Teva Pharm. USA, Inc.*, 347 F.3d 1367, 1371 (Fed. Cir. 2003). When
8 scrutinizing the specification, however, a court must distinguish “between using the specification to
9 interpret the meaning of a claim and importing limitations from the specification into the claim.”
10 *Phillips*, 415 F.3d at 1323. Only the former is permissible.

11 Additionally, the court may also consider the prosecution history, which includes the record
12 of proceedings before the Patent and Trademark Office (hereinafter “PTO”), including any
13 references to prior art cited during prosecution. *Id.* at 1317. The prosecution history can
14 demonstrate how the PTO and the inventor understood the patent. *Id.* In particular, the court should
15 exclude any interpretation disclaimed by the inventor during the patent’s examination. *Chimie v.*
16 *PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005). The purpose of this rule is to “protect[] the
17 public's reliance on definitive statements made during prosecution by precluding patentees from
18 recapturing through claim interpretation specific meanings [clearly and unmistakably] disclaimed
19 during prosecution.” *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323-24 (Fed. Cir. 2003)
20 (citations and internal quotations omitted).

21 Finally, a court may also consider extrinsic evidence, such as dictionaries, expert and
22 inventor testimony, and learned treaties to construct a claim term. *Phillips*, 415 F.3d at 1317, 1319.
23 However, their use should be limited to edification purposes: “while extrinsic evidence can shed
24 useful light on the relevant art, the Federal Circuit has explained that it is less significant than the
25 intrinsic record in determining the legally operative meaning of claim language.” *Id.* at 1317.

1 **III. Claim Construction**

2 **A. Person of Ordinary Skill**

3 The only proffered definition of a person of ordinary skill in the art comes from Spot
4 Devices’s retained expert, Dr. Kevan Shafizadeh (“Dr. Shafizadeh”),² who provided a declaration
5 in support of Spot Devices’s opening claim construction brief. Doc. #47, Shafizadeh Decl.
6 Dr. Shafizadeh opines that a person of ordinary skill in the relevant art is a person possessing a
7 bachelor’s degree in electrical, mechanical, or civil engineering, or equivalent work experience, and
8 at least 1-2 years in experience in traffic engineering. *Id.* For purposes of this claim construction
9 order, the court accepts Dr. Shafizadeh’s definition of a person of ordinary skill.

10 **B. “Signal Head Member”**

11 *Claim 1*

12 A pedestrian crosswalk signal apparatus to alert approaching vehicle traffic to the
13 presence of a pedestrian in a pedestrian crosswalk, said pedestrian crosswalk signal
14 apparatus comprising:

15 . . . a plurality of **signal head members** mounted on said roadway surface and
16 extending at least some distance across said roadway and above said roadway surface
17 to at least partially designate a pedestrian crosswalk, each of said **signal head**
18 **members** conditioned to withstand contact by vehicle traffic, each of said **signal**
19 **head members** including at least one light source adapted to direct a beam of light
20 from said roadway surface in the direction of the approaching vehicle traffic and
21 away from the pedestrian crosswalk, and adjacent to and generally parallel to said
22 roadway surface . . .

23 Doc. #1, Exhibit A, ‘742 Patent, Col. 8:2-22.

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² Dr. Shafizadeh is an associate professor at California State University, Sacramento, and both a licensed professional civil engineer and a registered professional traffic operations engineer in the State of California.

PROPOSED CONSTRUCTIONS ³	
Light Guard	light module comprising the module housing, one or more lights, and means through which light exits the module, such as a lens or window
Spot Devices	self-contained enclosure that includes the light sources and associated electronics

In its claim construction brief, Light Guard argues that the term “signal head member” should be construed as a light module which houses the essential parts for light to be emitted from the device. In contrast, Spot Devices argues that one of ordinary skill would understand “signal head member” to be a completely self-contained enclosure housing all associated electronics.

The starting point for claim construction is the claim language itself. *See Vitronics*, 90 F.3d at 1582. Here, there is no claim language that limits the term “signal head member” to a self-contained unit. Rather, the patent makes clear that the entire device is “self-contained,” not just the signal head members. *See* Doc. #1, Exhibit A, ‘742 Patent, Col. 1:59-61 (“The pedestrian crosswalk signal apparatus of this invention provides a low-cost traffic warning system which is *self-contained*”) (emphasis added).

Additionally, design figure 10, which is a cross-sectional diagram of a signalhead, shows a device that houses some, but not all of the separate components that make up a “signal head member.” *See* Doc. #1, Exhibit A, ‘742 Patent, Col. 5:41-42. In particular, the power and activation components are external to the module housing. *Id.* Therefore, the court finds that Spot Device’s “self-contained” construction is not supported by the plain language of the ‘742 patent.

Accordingly, the court adopts Light Guard’s construction of the term “signal head member.”

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³ The parties’ proposed constructions are taken from their opening *Markman* claim construction briefs. Doc. ##45, 46.

1 for partially embedded signal head members. *See Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d
2 1314, 1324 (Fed. Cir. 2003) (“[W]here the patentee has unequivocally disavowed a certain meaning
3 to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary
4 meaning of the claim congruent with the scope of the surrender.”).

5 When Light Guard submitted its original application, the claim language stated as follows:
6 “[a] plurality of surface mounted strobe lights *partially embedded* in said roadway to at least
7 partially designate a pedestrian crosswalk . . .” Doc. #46, Exhibit F, 275 App. at SPO00080
8 (emphasis added). This claim language was rejected by the Patent Examiner based on the
9 *Takahashi* prior art reference⁴ which disclosed a plurality of surface mounted lights partially
10 embedded in a roadway. Doc. #46, Exhibit F, 275 App. at SPO00098.

11 In order to overcome the Patent Examiner’s decision, Light Guard submitted a series of
12 claim amendments disclaiming the partially embedded language to overcome the design disclosed
13 in *Takahashi*. The claim language was amended as follows:

- 14 • “A plurality of ~~surface mounted~~ strobe lights ~~partially embedded in~~ mounted on the
15 surface of said roadway to at least partially designate a pedestrian crosswalk . . .”
16 Doc. #46, Exhibit F, 275 App. at SPO00107-08 (First Amendment, June 1997).
- 17 • “A plurality of ~~strobe lights~~ signal heads mounted ~~on~~ above the surface of said
18 roadway to at least partially designate a pedestrian crosswalk . . .” Doc. #46,
19 Exhibit G, 275 App. at SPO00155 (Second Amendment, March 1998).
- 20 • “A plurality of signal heads mounted in the roadway and at least some distance
21 above the surface of ~~said~~ the roadway to at least partially designate a pedestrian
22 crosswalk . . .” Doc. #46, Exhibit G, 275 App. at SPO00181-82 (Third Amendment,
23 December 1999).

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25 ⁴ The *Takahashi* reference is a U.S. Patent, United States Patent no. 4,570,207, which discloses an
26 IRWL system in which luminous blocks are set within the road surface so that they are flush with the road
surface. A copy of the patent is attached to Dr. Shafizadeh’s initial declaration. Doc. #22, Exhibit K.

- 1 • “A plurality of signal ~~heads~~ head members mounted ~~in~~ on the roadway and at
2 extending at least some distance above the surface of the roadway to at least
3 partially designate a pedestrian crosswalk . . .” Doc. #46, Exhibit H, 275 App. at
4 SPO00247 (Fourth Amendment, August 2000).
- 5 • “A plurality of signal head members mounted on ~~the~~ said roadway surface and at
6 extending at least some distance ~~above the surface of the~~ across said roadway and
7 above said roadway to at least partially designate a pedestrian crosswalk . . .”
8 Doc. #46, Exhibit H, 275 App. at SPO00284-85 (Final Amendment, July 2001).

9 After the last amendment, the Patent Examiner allowed the ‘742 patent over *Takahashi*
10 finding that Light Guard’s claim disclosed a “novel and unobvious arrangement of a plurality of
11 strobe lights *mounted on the surface* of the roadway.” Doc. #46, Exhibit F, 275 App. at SPO00110
12 (emphasis added). Further, Light Guard, in its responses to the Patent Examiner, focused on the
13 mounting of its signal heads above the roadway to differentiate its design from the embedded
14 design of *Takahashi*. See Doc. #46, Exhibit I, 275 App. at SPO00381 (“*Takahashi’s* luminous
15 block is buried in a road surface so that its radiating surface is flush with the road surface. In
16 contrast, *the claim requires that signal head members be mounted on the roadway surface and*
17 *above the roadway surface.*”) (emphasis added). Thus, in distinguishing the prior art, Light Guard
18 unambiguously surrendered the scope of the claim that would include a signal head member
19 partially embedded in the roadway surface and narrowed the claim to require that the signal head
20 members are mounted on the surface of the roadway. See *Schindler Elevator Corp. v. Otis Elevator*
21 *Co.*, 593 F.3d 1275, 1285 (Fed. Cir. 2010) (“[A]n amendment that clearly narrows the scope of a
22 claim, such as the addition of a new claim limitation, constitutes a disclaimer of any claim
23 interpretation that would effectively eliminate the limitation or that would otherwise recapture the
24 claim’s original scope.”); see also *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535
25 U.S. 722, 740 (2002). Accordingly, the court adopts Spot Devices’s construction because that
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1 construction clearly and unequivocally provides that the signal head members are mounted on and
2 above the roadway surface.

3 **D. Direct a beam of light from said roadway surface . . .**

4 *Claim 1*

5 . . . each of said signal head members including at least one light source adapted
6 to **direct a beam of light from said roadway surface in the direction of the**
7 **approaching vehicle traffic and away from the pedestrian crosswalk, and**
8 **adjacent to and generally parallel to said roadway surface . . .**

PROPOSED CONSTRUCTIONS	
Light Guard	direct a beam of light from said signal head toward approaching vehicle traffic
Spot Devices	a beam of light emanating from a light source above the roadway towards oncoming traffic and away from the pedestrian crosswalk

12 According to the plain claim language, the beam of light must be (1) above the roadway
13 surface, and (2) only in the direction of the approaching traffic. The design figures in the claim
14 specification supports these limitations and show that the light emanates from above the roadway
15 surface and is only in the direction of traffic. *See* Doc. #1, Exhibit A, '742 Patent, Figure 3;
16 Figure 10. Light Guard's proposed construction does not meet these two limitations because it does
17 not require the light to be above the roadway surface and does not limit the direction of the light.
18 Therefore, the court agrees with and adopts Spot Devices construction as the construction in line
19 with the plain claim language.

20 **E. Activation means . . .**

21 *Claim 1*

22 A pedestrian crosswalk signal apparatus to alert approaching vehicle traffic to the
23 presence of a pedestrian in a pedestrian crosswalk, said pedestrian crosswalk signal
24 apparatus comprising . . .

25 **activation means to selectively illuminate said plurality of signal head**
26 **members light sources to warn the drivers of the approaching vehicles that the**
pedestrian has entered the pedestrian crosswalk.

PROPOSED CONSTRUCTIONS	
Light Guard	a mechanical switch or a proximity-type sensor switch
Spot Devices	the corresponding structure is a pair of switches mounted on poles on each side of the roadway consisting of either simple mechanical switches or proximity type sensor switches

Both parties agree that this is a means plus function governed by 35 U.S.C. § 122. To construe a means-plus-function claim, the court must identify the recited function of the claim and then the corresponding structure disclosed in the specification that performs the recited function. *See Med. Instrumentation and Diagnostic Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003). Here, it is undisputed that the recited function is to selectively illuminate the signal head members to warn the drivers of approaching vehicles that a pedestrian has entered the crosswalk. The parties dispute the corresponding structure of the patent claim.

Light Guard argues that the corresponding structure is simply a “mechanical switch or a proximity-type sensor switch” because that is the simplest way to explain the function of triggering the system. However, that construction does not contain the appropriate corresponding structure as designated by the specification. The patent specification specifically discloses a pair of switches mounted on poles on each side of the roadway. *See Doc. #1, Exhibit A, ‘742 Patent, Col 2:17-21; Col. 3:61-67; Col. 4:35-40.* Further, the court finds that a construction that does not require the activation means on both sides of the street would be impractical to operate the device for the pedestrian on the opposite side of the road from Light Guard’s single switch. Therefore, the court agrees with and adopts Spot Devices’s construction.

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1 **F. Dynamically compensate for poor visibility and night operating conditions**

2 *Claim 4*

3 The pedestrian crosswalk signal apparatus of claim 1 including an ambient light
4 sensing circuit to adjust light intensity to **dynamically compensate for poor
 visibility and night operating conditions.**

5 Doc. #1, Exhibit A, ‘742 Patent, Col. 8:29-32.

6

PROPOSED CONSTRUCTIONS	
7 Light Guard	compensate according to poor visibility conditions (such as fog, smoke, or blowing dust), or the lack of sun at night, or both
8 Spot Devices	continuously compensating for both weather conditions and time of day

9

10 Light Guard argues that its construction should be adopted because it is the plain and
11 ordinary meaning of the claim terms. Light Guard contends that the claim language does not require
12 adjustments to both poor visibility and night conditions, but just one of those conditions. The court
13 disagrees. The court finds that Light Guard is attempting to impermissibly rewrite the claim by
14 turning the conjunction “and” into the term “or.”

15 The court finds that Spot Devices’s construction is also inappropriate because it replaces the
16 term “poor visibility” with “weather conditions” which is not used anywhere within the
17 ‘742 patent. However, the court agrees that the term “dynamically” means continuously changing.
18 *See* Doc. #1, Exhibit A, ‘742 Patent, Col. 6:35-37 (“ambient light is continuously monitored and
19 the lights are dynamically adjusted to provide the optimum brightness based on current lighting
20 conditions”). As such, the court finds that an appropriate construction of this disputed phrase is
21 “continuously compensate according to poor visibility conditions and night operating conditions.”

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PROPOSED CONSTRUCTIONS	
Light Guard	said signal head light source is directed in a beam having a vertical angular range of 0 to 5 degrees from said roadway surface
Spot Devices	wherein the beam has a divergence in the vertical direction of between 0 and 5 degrees

The court finds that Light Guard’s construction is appropriate because it comports to the way the specification uses the term “vertical angular range” which requires the range of the vertical angle formed by the light beam and the roadway surface to be less than 5 degrees. *See* Doc. #1, Exhibit A, ‘742 Patent, Col. 5:65-68 (“ . . . enabling the light beam to be directed generally parallel to the road surface”). Spot Devices’s construction introduces a new term, “divergence,” which is unsupported by the patent and would require additional claim construction. Therefore, the court accepts and adopts Light Guard’s proposed construction.

IT IS THEREFORE ORDERED that the disputed claim terms and phrases are to be construed consistent with the court’s order herewith.

IT IS SO ORDERED.

DATED this 12th day of June, 2012.

LARRY R. HICKS
UNITED STATES DISTRICT JUDGE

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