

United States District Court,  
W.D. Wisconsin.

**ORBITAL TECHNOLOGIES CORPORATION,**  
Plaintiff.

v.

**PFO LIGHTING, INC,**  
Defendant.

No. 08-CV-220-BBC

**Oct. 22, 2008.**

Craig Diviney, Glenn Salvo, Bart Torvik, Dorsey & Whitney LLP, Minneapolis, MN, for Plaintiff.

Allen Arntsen, Justin Edwin Gray, Foley & Lardner, Madison, WI, for Defendant.

## **OPINION AND ORDER**

**BARBARA B. CRABB, District Judge.**

Plaintiff Orbital Technologies Corporation owns U.S. Patent No. 7,220,018, which discloses a device for using "light-emitting diodes" or LEDs, to illuminate "marine habitats" such as aquariums. Its suit for patent infringement is before the court for construction of the following terms in the patent: "housing," "connectable," "substantially cover said open top," "having a plurality of individual LEDs capable of providing light at a wavelength from about 380 nm to about 690 nm," "controller connected with said power source for controlling the activation status and the intensity of one or more of said individual LEDs" and "marine habitat." (At the claim construction hearing on October 3, 2008, the parties agreed to defer the question whether construction is needed or even possible for the term "capable of providing light intensity of from 0 to 1000 micro mols per square meter per second.")

I conclude that the parties have failed to show that "substantially cover said open top" and "marine habitat" would benefit from their proposed constructions. The remaining terms are construed below.

### **OPINION**

#### ***A. Asserted Claims***

Claim 1 discloses:

A combination marine habitat and lighting system therefor comprising:

a marine habitat having an open top defined by a top edge and a lighting system including:

a housing connectable to said top edge to substantially cover said open top, said housing further including an inner side facing said open top when said housing is connected to said top edge and an opposite outer side;

an LED light source mounted to the inner side of said housing, said LED light source comprising at least one light engine having a plurality of individual LEDs capable of providing light at a wavelength from about 380 nm to about 690 nm;

a power supply sufficient to drive said LEDs; a controller connected with said power source for controlling the activation status and the intensity of one or more of said individual LEDs;

and a cooling system provided in said housing.

Claim 5 is nearly identical to claim 1 but it does not include a marine habitat as a structural limitation.

### ***B. Housing (Claims 1 and 5)***

**Plaintiff's Proposed Construction:** A structure for accommodating an LED light source

**Defendant's Proposed Construction:** A structure that contains an LED light source

The dispute is whether housing is *any* structure that contains an LED light or whether the structure must be designed "for accommodating" such a light. Unfortunately, both proposed constructions are problematic. I agree with defendant that the word "accommodating" is ambiguous and therefore not helpful. Further, plaintiff points to nothing in the patent that requires that the housing be designed specifically "for" an LED. However, I agree with plaintiff that any random container would not satisfy the language of the claim; the housing must be a type of structure that allows the invention to work, regardless whether that was the original purpose of the structure. For example, it must allow the LED to be mounted inside it and must permit the use of a marine habitat and a cooling system. At the claims construction hearing, the parties substantially agreed with that understanding of the term. Accordingly, I will adopt defendant's proposed construction with this modification.

**Court's Construction:** a structure that contains an LED light and allows the lighting system to function properly

### ***C. Connectable (Claims 1 and 5)***

**Plaintiff's Proposed Construction:** can be directly or indirectly connected

**Defendant's Proposed Construction:** fastened

Although it is not necessarily clear from their proposed constructions, at the claim construction hearing the parties disputed whether the housing is "connectable" to the top edge if the two objects simply touch each other without being held together by a mechanical attachment. I agree with defendant that plaintiff's view of a "connection" is too broad. None of the dictionary definitions cited by either party go as far as to say that mere touching is enough to constitute a connection. Rather, dictionaries consistently define "connect" to mean "join" or "link" in similar contexts. Plt.'s Br. at 12, dkt. # 23 (citing *Chambers English Dictionary* 302 (7th ed.1989)); Dft.'s Br. at 9; dkt. # 24 (citing *Webster's Third New International Dictionary* 524 (2002)).

Plaintiff makes a weak attempt to limit the ordinary meaning of the term by pointing to the housing in

Figure 1 in the patent, which plaintiff says "appears" to be "held in place merely by gravity and friction." Plt.'s Br., at 13, dkt. # 23. However, the specification describes the housing in this embodiment as being "mounted to the top of the marine habitat." '018 Pat., col. 4, lns. 17-18. The descriptions of the other figures state even more explicitly that "[m]ounting hardware is included to attach the housing to the sides of the marine habitat." *Id.* at col. 5, lns. 18-20.

Unfortunately, defendant's construction is no better. "Fastened" is wrong both because of its form (it should be "capable of being fastened") and because fastening is simply one way of connecting. Defendant does not support its more restrictive view. In fact, that construction would likely exclude many of the preferred embodiments in which the housing is attached to top with hooks and do not necessarily involve "fastening." Perhaps realizing this, defendant backed away from that proposal at the hearing, saying that the construction should incorporate the concept of a "mechanical attachment." But even this limitation is supported only by reference to the preferred embodiments, which of course is not an appropriate basis for limiting the claim. *In re Omeprazole Patent Litigation*, 483 F.3d 1364, 1372 (Fed Cir.2007).

In the absence of an appropriate proposal from the parties, I will simply construe the term in accordance with its ordinary meaning: capable of being joined or linked.

**Court's Construction:** capable of being joined or linked

#### ***D. Substantially Cover Said Open Top (Claims 1 and 5)***

**Plaintiff's Proposed Construction:** substantially illuminates the open top

**Defendant's Proposed Construction:** hides or conceals essentially the entire open top from view

The parties have failed to show that this term needs any construction. Defendant's proposed construction simply replaces each word with a synonym. Defendant fails to explain how its construction advances understanding of the term. Although I agree with defendant that the word "substantially" is somewhat ambiguous, defendant does not support its construction with any language from the patent. It may be that the purpose of the disclosed invention could help define "substantially" in the context of the patent, but neither party attempted to show how that might be so.

Plaintiff's proposed construction is nonsensical. The term "substantially cover said open top" modifies "housing" in the claims. Thus, under plaintiff's construction, the housing "substantially illuminates the open top," which is impossible. It is the lights, not the housing, that provide illumination. When this problem was identified to plaintiff at the claims construction hearing, it failed to provide an alternative construction and conceded that no construction was necessary.

**Court's Construction:** No construction necessary

#### ***E. Having a Plurality of Individual LEDs Capable of Providing Light at a Wavelength from about 380 nm to about 690 nm (Claims 1 and 5)***

**Plaintiff's Proposed Construction:** Having two or more individual LEDs capable of providing visible light

**Defendant's Proposed Construction:** Consisting of two or more individual LEDs, with each individual LED providing light at a particular wavelength within the spectral range of about 380 nm to about 690 nm

***1. Providing light at a wavelength from about 380 nm to about 690 nm***

The primary dispute for this term is whether "providing light at a wavelength from about 380 nm to about 690 nm" means "providing light at a *particular* wavelength" within the spectrum or whether it simply means "providing visible light." In practical terms, the dispute is whether the invention may be used with white light, which the parties agree is emitted simultaneously across all wavelengths in the visible light spectrum (approximately 380 nm to 690 nm).

The language of the claims supports defendant's view. They say "a" wavelength, not "multiple wavelengths" or even "one or more wavelengths." In other words, the claim language suggests that the wavelength can be anywhere between 380 nm to about 690 nm, but the LED cannot be emitting light at more than one wavelength at the same time.

Further, plaintiff points to nothing in the patent suggesting that the invention uses white light. Rather, the specification repeatedly identifies "the present invention" as using LEDs that emit light at a "particular wavelength." *E.g.*, '018 Pat., col. 5, lns. 62-63 (in present invention, "each type of the individual LEDs emits its own particular wavelength of light"); *id.* at col. 7, lns. 58-67 ("[T]he present invention is directed to an LED light system .... Each of these individual LEDs emits light at a particular wavelength."); *see also id.* at col. 4, lns., 51-54 ("Each of the individual LEDs is capable of providing a predetermined variable intensity of light (depending on the applied power) at a predetermined wavelength.") When the patent refers to the color created by the LEDs, it is individual colors such as red, green and blue. *E.g.*, '018 Pat., col. 4, lns. 62-64. The *only* time the patent discusses combinations of colors such as white light is in the context of "mimic[ing]" them. *id.* at col. 7, lns. 19-20 ("[T]he user is able to create lighting effects that mimic additional colors of light, including white, purple, etc.") Obviously, there would be no need to "mimic" white light if the invention used LEDs that emit white light.

Plaintiff offered no interpretation of these passages in its briefs or at the claims construction hearing that supports its reading of the claim. Instead, it argues that defendant is attempting to read in limitations from an embodiment. Plaintiff's reliance on this all-too-familiar canon of construction is unsurprising, but also misplaced. "When a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention." *Verizon Services Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed.Cir.2007). Thus, the only reasonable reading of the claim in light of the patent as a whole is that the LEDs emit light at one wavelength at a time. Because the patent itself is clear, it is unnecessary to consider defendant's argument regarding the prosecution history.

Plaintiff attempts to undermine the language of the patent in two other ways, but neither is persuasive. First, plaintiff says that defendant's proposed construction is simply inconsistent with the way that light works. Specifically, even colored light may emit light over a range of wavelengths and is not limited to "a particular wavelength." Plt.'s Br., dkt. # 31, at 15. For example, green light ranges from 500-560 nm. Thus, according to plaintiff, defendant's proposed construction would not cover the very colored lights it explicitly discloses in the specification.

Plaintiff's argument is problematic because it contradicts both the parties' representations at the claim construction hearing and the language of the patent. At the hearing, the parties agreed that colored lights such as red or green may be emitted at different wavelengths at different times. For example, one green light source may emit light at 508 nm and another may emit light at 534 nm. However, they also agreed that any one green light is emitted at *one* wavelength. Thus, although colored lights may have a range of wavelengths, they are not emitted at multiple wavelengths simultaneously as white lights are. This is

consistent with defendant's reading of the claim. Under defendant's proposed construction, the wavelength does not have to be the same every time (it can be anywhere within a range), but in any particular instance, the light emitted cannot cover a range, it has to be one wavelength.

Further, plaintiff's argument that the construction "a particular wavelength" excludes colored lights is inconsistent with the language of the patent. As discussed above, the specification repeatedly states that the LEDs emit light at "a particular wavelength" and it is undisputed that the patent covers colored lights. At the claim construction hearing, plaintiff's only explanation for the patent's use of the term was that "particular wavelength" must mean a particular *color*. Plaintiff pointed to no support for this view, but even it were correct, it would not help plaintiff because it would still exclude white light.

Finally, plaintiff says that because claims 1 and 5 begin with the word "comprising," the claim is "open-ended" and any time the word "a" is used in an open-ended claim, it must be construed to mean "one or more." Plaintiff is significantly over-reading a relatively simple canon of construction, which is that when the term "comprising" is used in a claim's preamble, it "permit[s] additional elements not required by a claim." *Power Mosfet Technologies, L.L.C. v. Siemens AG*, 378 F.3d 1396, 1409 (Fed Cir.2004). Thus, in the context of claims 1 and 5, which disclose elements of "a housing," "an LED light source," "a power supply," "a controller" and "a cooling system," other elements may be present as well, such as additional LED light sources, power supplies or controllers.

The canonical construction of "comprising" does not help plaintiff in the context of construing "light at a wavelength from about 380 nm to about 690 nm" in claims 1 and 5. That phrase is not describing what the invention includes, it is describing what the LEDs are "capable of providing." Use of the word "comprising" may allow additional elements, but it cannot change the capability of the invention. In any event, even if the canon could apply in this context, it is not an absolute rule. *Board of Regents of the University of Texas System v. BENQ America Corp.*, 533 F.3d 1362, 1372-73 (Fed.Cir.2008). When the patent otherwise shows unambiguously that a singular term should not be construed to mean "one or more," the narrower construction must be applied. *Baldwin Graphic Systems, Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1342 (Fed.Cir.2008). In this case, the specification makes it clear that "a wavelength" means "a particular wavelength" rather than "one or more wavelengths." In fact, the specification is clear that using individual colors of light rather than white light is key to the invention. In the description of the invention, the patent states, "LED lighting technology is able to deliver high intensity light into a marine environment in a new way when compared to traditional systems. The use of LEDs enables the system to independently control the intensity of *each spectral component* as a function of time." '018 Pat., col. 2, lns. 38-42 (emphasis added).

## ***2. One light engine having a plurality of individual LEDs***

Defendant contends that the word "having" should be construed to mean "consisting of," which is often construed as a more limiting term. *Norian Corp. v. Stryker Corp.*, 363 F.3d 1321, 1331 (Fed.Cir.2004) ("'Consisting of' is a term of patent convention meaning that the claimed invention contains only what is expressly set forth in the claim.") Defendant's argument is somewhat confused in its briefs; defendant conflates its arguments regarding the proper construction "having" and "at a wavelength," relying on all of the same evidence for both terms.

In my view, the questions are very different. Defendant fails to explain how a determination regarding the type of light an LED is capable of providing informs the determination regarding the contents of the light

engine. I will adopt defendant's construction of the term, but without defendant's proposed substitution of "consisting of" for having. If defendant believes that "having" requires further construction, it will have to present a better argument at summary judgment.

**Court's construction:** Having two or more individual LEDs, with each individual LED providing light at a particular wavelength within the spectral range of about 380 nm to about 690 nm

***F. A Controller Connected with Said Power Source for Controlling the Activation Status and the Intensity of One or More of Said Individual LEDs (Claims 1 and 5)***

**Plaintiff's Proposed Construction:** a device that varies power connected with the power source for controlling the on/off status and the quantity of light of at least one of the individual LEDs

**Defendant's Proposed Construction:** a device that varies power fastened to the power source for controlling both the on/off status of an individual LED and, when the individual LED is turned on, the ability to vary the quantity of light from the individual LED.

In its opening brief, defendant says the "issue is whether this claim term requires the ability to 'dim' individual LEDs thereby controlling their intensity, or whether merely turning LEDs on and off meets the 'intensity' limitation." Dft.'s Br., dkt. # 24, at 14. These are actually two issues and the first is the only one raised by the parties' proposed constructions. Although defendant argues repeatedly in its brief that plaintiff's proposed construction conflates the concepts of "activation" and "intensity," it never explains how. Just like defendant's proposed construction, plaintiff's requires the device to control both functions.

The only significant difference that I can discern between the two constructions is that defendant inserts a requirement that the device be able to control the intensity "when the individual LED is turned on." (Defendant also replaces "connected" with "fastened" but that construction makes no sense in the context of connecting "power" to a "power source." Defendant does not make an argument for this portion of its construction.) Plaintiff says in its brief that the claim language "covers a controller that can change the intensity setting of LEDs when they are turned off." That may be true of the claim language in isolation, but plaintiff's view disregards the multiple instances in which the patent describes "the present invention" as controlling the intensity of the light "when activated." '018 Pat., col. 5, lns. 57-61 ("[T]he present invention is designed to control the activation (on/off) status of each type of individual LEDs within each light engine and when activated (on), to control the intensity of each type of the individual LEDs within each light engine."); *id.* at col. 7 ln. 58-col. 8, ln. 7 ("[T]he present invention is directed to an LED light system and method for controlling light to promote and/or sustain marine life (either plant or animal) in a marine habitat.... Each type of LED within a light engine is capable of being activated (on) or deactivated (off) and, when activated, each type of LED is capable of having its intensity varied as a result of providing variable power.") Again, when the patent describes "the present invention" as being limited a particular way, it is generally appropriate to read that limitation into the claims. *Verizon*, 503 F.3d at 1308. Plaintiff did not try to rebut this presumption either in its briefs or at the hearing. Accordingly, I will adopt that portion of defendant's proposed construction.

**Court's construction:** a device that varies power connected to the power source for controlling both the on/off status of at least one of the individual LEDs and, when the individual LED is turned on, the ability to vary the quantity of light of the LED.

***G. Marine Habitat***

**Plaintiff's Proposed Construction:** aquarium or similar structure

**Defendant's Proposed Construction:** a physical environment in which aquatic animals or plants live

Plaintiff failed to show that its proposed construction was either correct or useful. It did not provide any support for its proposed requirement that a marine habitat must be "similar" to an aquarium and failed to explain how the structure must be similar. Although defendant's proposed construction is not necessarily incorrect, I am not persuaded that it provides any needed clarity. Particularly in light of the parties' concession at the hearing that they were not aware of any dispositive questions that turn on the construction of this term, I decline to construe it at this time.

### **ORDER**

IT IS ORDERED the claims in U.S. Patent No. 7,220,018 are construed as follows:

-> "housing" in claims 1 and 5 means "a structure that contains an LED light and allows the lighting system to function properly";

-> "connectable" means "able to be joined or linked";

-> "having a plurality of individual LEDs capable of providing light at a wavelength from about 380 nm to about 690 nm" means "having two or more individual LEDs, with each individual LED providing light at a particular wavelength within the spectral range of about 380 nm to about 690 nm;"

-> "controller connected with said power source for controlling the activation status and the intensity of one or more of said individual LEDs" means "a device that varies power connected to the power source for controlling both the on/off status of at least one of the individual LEDs and, when the individual LED is turned on, the ability to vary the quantity of light of the LED."

W.D.Wis.,2008.

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