

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TECHNICAL CONSUMER PRODUCTS, INC., NICOR INC.,
AMAX LIGHTING, JIAWEI TECHNOLOGY (HK) LTD.,
JIAWEI TECHNOLOGY (USA) LTD., SHENZHEN JIAWEI PV
LIGHTING CO., LTD., LEEDARSON LIGHTING CO., LTD., and
LEEDARSON AMERICA, INC.,
Petitioner,

v.

LIGHTING SCIENCE GROUP CORP.,
Patent Owner.

Case IPR2017-01285¹
Patent 8,672,518 B2

Before KEVIN F. TURNER, PATRICK M. BOUCHER, and
JOHN A. HUDALLA, *Administrative Patent Judges*.

TURNER, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

¹ IPR2018-00262 and IPR2018-00270 are joined with this proceeding.

I. INTRODUCTION

Technical Consumer Products, Inc., Nicor Inc., and Amax Lighting (collectively, “Petitioner”) filed a Petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1, 3–8, and 10–14 (“the challenged claims”) of U.S. Patent No. 8,672,518 B2 (Ex. 1001, “the ’518 Patent”). Lighting Science Group Corp. (“Patent Owner”) acknowledged the filing of the Petition (Paper 6), but did not file a preliminary response. We determined that the information presented in the Petition established that there was a reasonable likelihood that Petitioner would prevail in challenging claims 1, 3–8, and 10–14 of the ’518 Patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on November 1, 2017, as to all of the challenged claims, except claim 10, but not all the grounds presented the Petition. Paper 10 (“Dec. on Inst.”).

During the course of trial, Patent Owner filed a Patent Owner Response (Paper 17, “PO Resp.”), and Petitioner filed a Reply to the Patent Owner Response (Paper 21, “Pet. Reply”). A consolidated oral hearing with related Cases IPR2017-01280 and IPR2017-01287 was held on September 6, 2018, and a transcript of the hearing is included in the record. Paper 32 (“Tr.”).

Before the consolidated oral hearing, the United States Supreme Court held that a decision to institute under 35 U.S.C. § 314 may not institute on less than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). Following *SAS*, the U.S. Patent and Trademark Office (“Office”) issued “Guidance on the impact of *SAS* on AIA trial proceedings,” in which the Office took the policy position that a decision granting institution will institute on all of the challenged claims in

the petition *and* all the grounds presented in the petition.² The U.S. Court of Appeals for the Federal Circuit has since endorsed this Office policy by explaining that “‘the petitioner’s petition, not the Director’s discretion, is supposed to guide the life of the litigation’ and ‘that the petitioner’s contentions, not the Director’s discretion, define the scope of the litigation all the way from institution through to conclusion.’” *Adidas AG v. Nike, Inc.*, 894 F.3d 1256, 1258 (Fed. Cir. 2018) (quoting *SAS*, 138 S. Ct. at 1356–1357). In accordance with *SAS* and Office policy, we issued an Order modifying our Decision on Institution entered on November 1, 2017, to include review of all challenged claims and all grounds presented by Petitioner in its Petition. Paper 19.

In addition, two additional petitioners sought institution of similar grounds of unpatentability against claims 1, 3–8, and 10–14 of the ’518 Patent: (1) Jiawei Technology (HK) Ltd., Jiawei Technology (USA) Ltd., and Shenzhen Jiawei Photovoltaic Lighting Co, Ltd. (“Jiawei”); and (2) Leedarson Lighting Co., Ltd., and Leedarson America, Inc. (“Leedarson”). See Papers 22, 23. We instituted review of all of the challenged claims and all grounds with respect to both new petitioners and joined the instituted proceedings, i.e., IPR2018-00262 and IPR2018-00270, with the instant proceeding. *Id.* Both new petitioners were joined under specific conditions in “understudy” roles. *Id.*

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of

² Available at <https://www.uspto.gov/patentsapplication-process/patent-trial-and-appeal-board/trials/guidance-impactsas-aia-trial>.

claims 1, 3–8, and 11–14 of the '518 Patent. For the reasons discussed below, we hold that Petitioner has demonstrated by a preponderance of the evidence that these claims are unpatentable under § 103(a).

A. Related Matters

Additional petitions were filed seeking *inter partes* review of U.S. Patent No. 8,967,844 B2 (“the '844 Patent”), co-pending Case IPR2017-01280, and of U.S. Patent No. 8,201,968 B2 (“the '968 Patent”), co-pending Case IPR2017-01287. Pet. 1. The '518 Patent issued from a continuation-in-part of U.S. Patent Application No. 12/775,310, from which the '968 Patent issued, and '844 Patent issued from a continuation of the '518 Patent.

The '968, '518, and '844 Patents have been asserted in the following proceedings: *Lighting Sci. Grp. Corp. v. Cree, Inc.*, Case No. 6:13-cv-00587 (M.D. Fla. filed Apr. 10, 2013); *Lighting Sci. Grp. Corp. v. Cooper Lighting, LLC*, Case No. 6:14-cv-00195 (M.D. Fla. filed Feb. 6, 2014); *Lighting Sci. Grp. Corp. v. Sea Gull Lighting Prods. LLC*, Case No. 6:16-cv-00338 (M.D. Fla. filed Feb. 25, 2016); *Lighting Sci. Grp. Corp. v. U.S.A. Light & Elec., Inc.*, Case No. 6:16-cv-00344 (M.D. Fla. filed Feb. 26, 2016); *Lighting Sci. Grp. Corp. v. Hyperikon, Inc.*, Case No. 6:16-cv-00343 (M.D. Fla. filed Feb. 26, 2016); *Lighting Sci. Grp. Corp. v. Nicor Inc.*, Case No. 6:16-cv-00413 (M.D. Fla. filed Mar. 10, 2016); *Lighting Sci. Grp. Corp. v. Sunco Lighting, Inc.*, Case No. 6:16-cv-00677 (M.D. Fla. filed Apr. 21, 2016); *Lighting Sci. Grp. Corp. v. Panor Corp.*, Case No. 6:16-cv-00678 (M.D. Fla. filed Apr. 21, 2016); *Lighting Sci. Grp. Corp. v. S E L S, Inc.*, Case No. 6:16-cv-00679 (M.D. Fla. filed Apr. 21, 2016); *Lighting Sci. Grp. Corp. v. EEL Co., Ltd.*, Case No. 6:16-cv-00680 (M.D. Fla. filed Apr. 21, 2016); *Lighting Sci. Grp.*

Corp. v. Globalux Lighting LLC, Case No. 6:16-cv-00681 (M.D. Fla. filed Apr. 21, 2016); *Lighting Sci. Grp. Corp. v. Hubbell Inc.*, Case No. 6:16-cv-01084 (M.D. Fla. filed June 22, 2016); *Lighting Sci. Grp. Corp. v. American De Rosa Lamparts, LLC*, Case No. 6:16-cv-01087 (M.D. Fla. filed June 21, 2016); *Lighting Sci. Grp. Corp. v. Titch Indus., Inc.*, Case No. 6:16-cv-01228 (M.D. Fla. filed July 7, 2016); *Lighting Sci. Grp. Corp. v. Tech. Consumer Prods., Inc.*, Case No. 6:16-cv-01255 (M.D. Fla. filed July 13, 2016); *Lighting Sci. Grp. Corp. v. Satco Prods., Inc.*, Case No. 6:16-cv-01256 (M.D. Fla. filed July 13, 2016); *Lighting Sci. Grp. Corp. v. Amax Lighting*, Case No. 6:16-cv-01321 (M.D. Fla. filed July 22, 2016); *Lighting Sci. Grp. Corp. v. Wangs Alliance Corp.*, Case No. 6:16-cv-01320 (M.D. Fla. filed July 22, 2016); *Lighting Sci. Grp. Corp. v. Halco Lighting Techs., LLC*, Case No. 6:16-cv-02188 (M.D. Fla. filed Dec. 21, 2016); *Lighting Sci. Grp. Corp. v. Shenzhen Jiawei Photovoltaic Lighting*, Case No. 6:16-cv-03886 (N.D. Cal. filed July 11, 2016); and *Lighting Sci. Grp. Corp. v. Leed Larson Lighting Co.*, Case No. 6:17-cv-00826 (M.D. Fla. filed May 9, 2017). Pet. 1–2; Paper 6, 1–3; Paper 27.

Generation Brands LLC previously filed petitions for *inter partes* review of the '844 Patent and the '968 Patent in IPR2016-01546 and IPR2016-01478, respectively. Pet. 1. After our decisions to institute *inter partes* reviews in these cases, both cases were settled and terminated. See *id.*; Paper 6, 1. In addition, Satco Products, Inc., filed petitions for *inter partes* review of the '844 Patent and the '968 Patent in IPR2017-01639 and IPR2017-01638, respectively, where we instituted *inter partes* reviews in these cases, which are still pending.

B. The '518 Patent

The '518 Patent relates to “low profile downlighting for retrofit applications.” Ex. 1001, 1:15–17. Figures 5 and 12 of the '518 Patent are reproduced below, with annotations added by the Board to Figure 12.

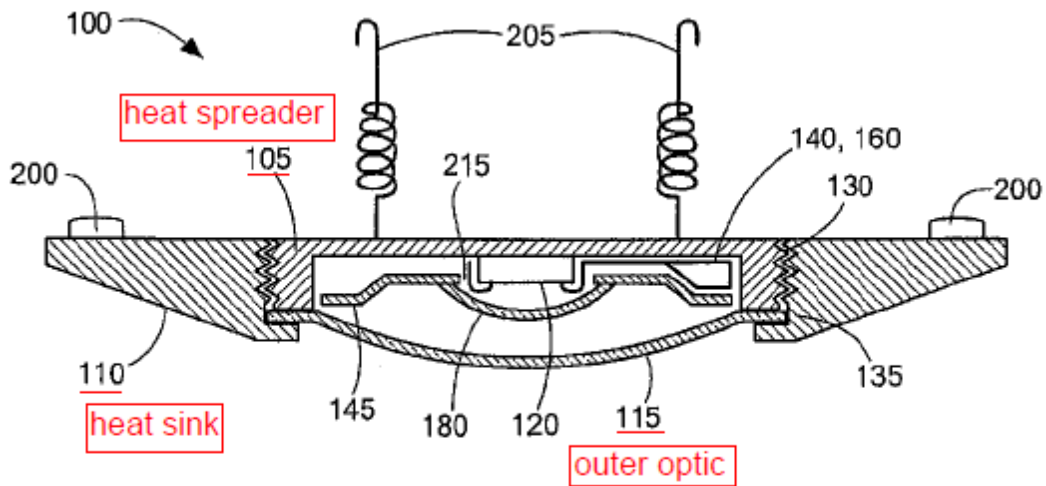
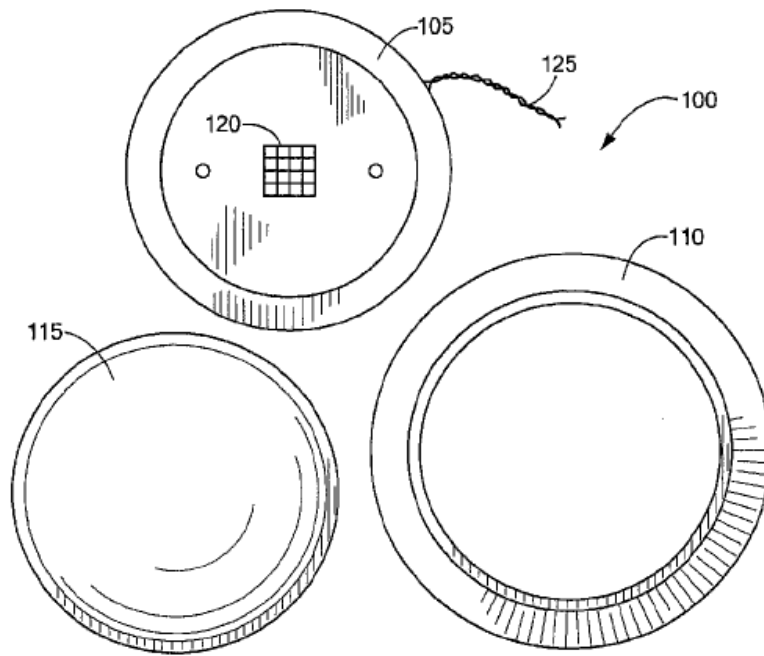


Figure 5 depicts the separated components of luminaire 100, whereas Figure 12 depicts a section view of assembled luminaire 100. *Id.* at 3:3–5, 22–23. Luminaire 100 includes heat spreader 105, heat sink 110, outer optic 115, light source 120, and electrical supply line 125. *Id.* at 4:45–52. Light source 120, which may be a plurality of LEDs, is disposed in thermal communication with heat spreader 105. *Id.* at 5:19–29. Heat sink 110 is thermally coupled to and disposed diametrically outboard of heat spreader 105. *Id.* at 4:45–49. In addition, outer optic 115 is securely retained relative to at least one of heat spreader 105 and heat sink 110. *Id.* The combination of heat spreader 105, heat sink 110, and outer optic 115 has an overall height H and an overall outside dimension/diameter D such that the ratio of H/D is less than or equal to 0.25 (e.g., when H=1.5 inches and D=7 inches). *Id.* at 4:52–58.

Luminaire 100 may also include a power conditioner. *Id.* at 4:56–58. The power conditioner may be a circuit board having electronic components for receiving alternating current (AC) voltage from supply line 125 and delivering direct current (DC) voltage to the LEDs. *Id.* at 5:44–54. In one embodiment, the electronics of the power conditioner are contained within a housing to form block-type power conditioner 165, which can be disposed on the back surface of the heat spreader 105. *Id.* at 5:61–6:6, Fig. 11. In this configuration, block-type power conditioner 165 can be configured and sized to fit within the interior space of an industry-standard nominally sized can-type light fixture or an industry-standard nominally sized wall/ceiling junction box. *Id.*

C. Illustrative Claim

Claim 1 is the sole independent claim of the challenged claims.
Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A luminaire and accessory kit in combination, the combination comprising:
a luminaire, comprising:
a heat spreader; a heat sink disposed in thermal communication with the heat spreader; a light source comprising a plurality of light emitting diodes (LEDs) disposed in thermal communication with the heat spreader; a power supply electrically connected to the light source; an electrical supply line having a first end connected to the power supply, and a second end connected to a plug-in connector; and, an optic disposed in optical communication with the LEDs; and
an accessory kit, comprising:
at least one of: a first pre-wired jumper comprising a pair of insulated electrical wires having a first plug-in connector electrically connected at one end and an Edison base electrically connected at the other end; and, a second pre-wired jumper comprising a pair of insulated electrical wires having a second plug-in connector electrically connected at one end and cut wire ends at the other end;
wherein the plug-in connector of the first pre-wired jumper and the second pre-wired jumper are each configured to electrically engage with the plug-in connector of the electrical supply line.

Ex. 1001, 13:36–59.

D. Instituted Grounds of Unpatentability

We instituted a trial based on the asserted grounds of unpatentability (“grounds”) set forth in the table below. Dec. on Inst. 28; Paper 19.

References	Basis	Challenged Claims
Soderman ³ and Wegner ⁴	§ 103	1, 3, 6–8, 11, 12, and 14
Soderman, Wegner, and Silescent ⁵	§ 103	4, 5, and 13
Soderman, Wegner, Barnett ⁶ , and/or Van Elmpt ⁷	§ 103	10
Zhang ⁸ and Wegner	§ 103	1, 3, 5–8, 11, 12, and 14
Zhang, Wegner, and Silescent	§ 102	4 and 13
Zhang, Wegner, Barnett, and/or Van Elmpt	§ 103	10

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms of an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2016). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are generally given their ordinary and customary

³ U.S. Patent No. 7,980,736 B2 (filed Nov. 13, 2007) (issued Jul. 19, 2011) (Ex. 1013, “Soderman”).

⁴ U.S. Patent No. 7,993,034 B2 (filed Sep. 22, 2008) (issued Aug. 9, 2011) (Ex. 1015, “Wegner”).

⁵ Silescent Lighting Corp., Silescent S100 LP2 Product Sheet and Installation Guide (Jun. 2009) (Ex. 1016, “Silescent”).

⁶ U.S. Patent Publication No. 2002/0113244 A1 (filed Feb. 11, 2002) (published Aug. 22, 2002) (Ex. 1019, “Barnett”).

⁷ PCT Int’l Pub. No. WO 2010/004503 A1 (filed July 6, 2009) (published Jan. 14, 2010) (Ex. 1020, “Van Elmpt”).

⁸ U.S. Patent No. 7,722,227 B2 (filed Oct. 10, 2008) (issued May 25, 2010) (Ex. 1014, “Zhang”).

meaning, as would be understood by one of ordinary skill in the art, in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

The Petition did not propose any explicit claim constructions, and we provided no explicit claim constructions in the Decision on Institution. Dec. on Inst. 8 (citing Pet. 19). During subsequent filing, neither Patent Owner nor Petitioner sought any explicit claim constructions. See PO Resp.; Pet. Reply. As such, any construction of claim terms occurs below in the context of analyzing whether the prior art renders the claims unpatentable.

B. Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations).⁹ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

⁹ In the instant proceeding, Patent Owner has not proffered any secondary considerations with respect to the challenged claims, as noted by Petitioner. See Pet. Reply 22–23.

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. See *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

C. Level of Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

Petitioner does not appear to discuss explicitly the level of ordinary skill in the art. See generally Pet. Petitioner’s Declarant, Dr. Coleman, opines that “[a] person of ordinary skill in the field of LED luminaire design as of October, 2009, would have had at least a bachelor’s degree in either mechanical engineering, electrical engineering, or physics and at least 3–4 years of experience designing light fixtures.” Ex. 1002 ¶ 22.

Patent Owner cites to its own declarant, Dr. Bretschneider, who states that a person of ordinary skill in the art in the relevant period “would have at least a B.S. degree or equivalent in electrical engineering, mechanical engineering, chemical engineering, physics, or a related field and at least 2-3 years of experience in designing LED lighting products or fixtures.” PO Resp. 4 (citing Ex. 2001 ¶¶ 22–23). Although the declarants’ opinions are not identical, they generally overlap and do not create important points of distinction.

The parties’ definitions of the level of skill differ in minor respects, including the number of years of experience and whether or not a background in chemical engineering should be included. At his deposition, Dr. Bretschneider testified that he included a degree in chemical engineering in his definition because that degree confers expertise in heat transfer. Ex. 1026, 37:14–22. We find this testimony persuasive. Regarding the difference in years of experience, both declarants agree that three years of experience is appropriate. For these reasons, we define the person of ordinary skill in the art as having a bachelor’s degree in electrical engineering, mechanical engineering, chemical engineering, physics, or a related field and three years of experience in designing LED lighting products or fixtures. We are satisfied that this definition comports with the qualifications a person would have needed to understand and implement the teachings of the ’968 Patent and the prior art of record. We also note that the applied prior art reflects the appropriate level of skill at the time of the claimed invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

D. Obviousness Over the Combined Teachings of Soderman and Wegner

Petitioner contends claims 1, 3, 6–8, 11, 12, and 14 of the '518 Patent would have been obvious under 35 U.S.C. § 103 over Soderman and Wegner. Pet. 20–34. Petitioner explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Petitioner also relies upon the Declaration of Dr. Coleman to support its positions. Ex. 1002 ¶¶ 44–59. In its Patent Owner Response, Patent Owner presents a number of arguments as to why the combined teachings of Soderman and Wegner do not render the limitations of independent claims 1, 3, 6–8, 11, 12, and 14 obvious. PO Resp. 4–10. Patent Owner relies upon the Declaration of Dr. Bretschneider to support its positions. Ex. 2001 ¶¶ 24–29, 73–80, 166–173.

We begin our analysis with brief overviews of Soderman and Wegner, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

1. Soderman Overview

Soderman is a U.S. patent directed to “a light fixture assembly comprising an illumination assembly incorporating a light emitting diode (LED) array electrically connected to a source of electrical energy by a conductor assembly segregated from conductive transfer to a heat sink portion of the light fixture.” Ex. 1013, 1:8–12. Figure 1 of Soderman is reproduced below:

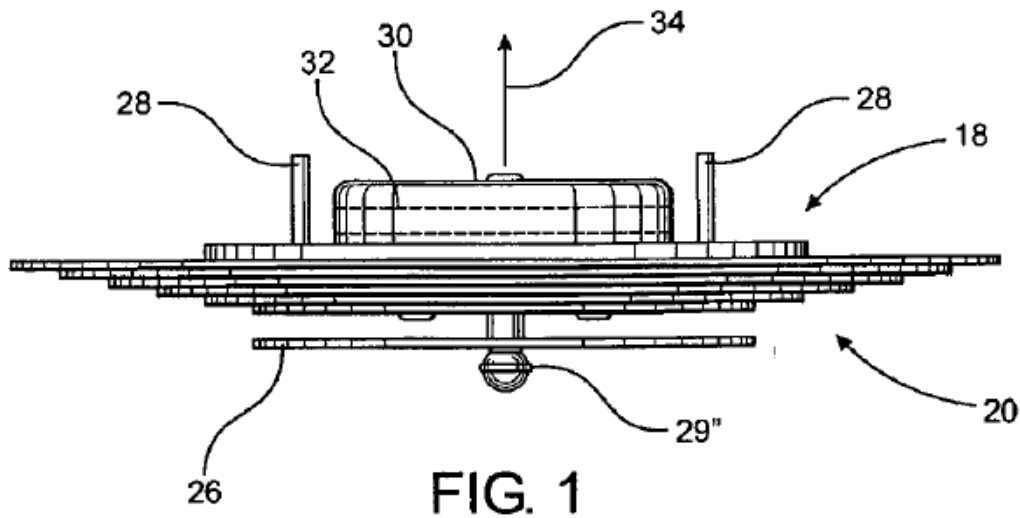


Figure 1 of Soderman illustrates housing 30, which can be an enclosure or a junction box, connected to mounting assembly 18, which can be a plate or a disk. *Id.* at 6:21–24, 8:5–10. Cover structure 20, formed of a conductive material and capable of heat conduction through its structure, is in contact with mounting assembly 18 to efficiently transfer heat from the illumination assembly to the mounting assembly to the cover structure. *Id.* at 6:46–59, 7:36–41. The illumination assembly may comprise one or more LEDs connected to electrical control circuitry, where the latter can be a printed circuit structure. *Id.* at 6:13–20. The light fixture assembly can also include light shield 26, formed of a transparent and/or translucent material. *Id.* at 7:54–58. Soderman describes mounting the fixture to the housing or junction box using, *inter alia*, connectors passing through “appropriately disposed and dimensioned apertures” in a mounting assembly. *Id.* at 8:1–13, 9:15–34.

2. Wegner Overview

Wegner is directed to recessed light fixture having an LED light source and a reflector. Ex. 1015, Abstr. The fixture has an Edison base

adaptor that allows for mounting into an existing recessed can light fixture. *Id.* at Figs. 14–16. In one embodiment, “a reflector housing 320 is coupled to the bottom surface 310a of the heat sink 310,” with the reflector housing being configured to receive a reflector composed of a material for reflecting light emitted by the LED. *Id.* at 8:1–2, 16–18, 33–35, Fig. 12.

3. *Independent Claim 1*

In its Petition, Petitioner cites Soderman’s mounting assembly for the recited “heat spreader.” Pet. 20–21 (citing Ex. 1013, 6:34–36, 6:39–44, 7:36–38, Fig. 5). Petitioner notes that the mounting assembly may be formed from a metallic or other material which facilitates the transfer of heat from illumination assembly 12. *Id.* With respect to the claimed “heat sink,” Petitioner cites Soderman’s “cover structure 20,” made of a “heat conductive material” that conducts heat from the heat spreader out to the air. *Id.* (citing Ex. 1014, 6:53, Figs. 5, 6). With respect to the “light source” recited in claim 1, Petitioner cites to Soderman’s LEDs. *Id.* at 23 (citing Ex. 1013, 6:14–17, 8:26–28).

With respect to the “power supply” limitation of claim 1, Petitioner cites to Soderman’s disclosure of “an appropriate source of electrical energy,” where “the specific wiring configurations which serve to interconnect the source of electrical energy 34 and the conductive material connectors 42 may take many forms and is therefore not shown, for purposes of clarity.” Pet. 23–24 (quoting Ex. 1013, 9:10–14, citing Ex. 1013, 8:53–55, Figs. 1, 7). With respect to the “optic,” Petitioner cites to Soderman’s optic in optical communication with the LEDs. *Id.* at 24 (citing Ex. 1013, 7:54–61, Fig. 3).

With to the “pre-wired jumper” limitation of claim 1, which Petitioner refers to as an “accessory kit,” Petitioner acknowledges that Soderman does not explicitly disclose such an element. Pet. 25. Petitioner contends that in retrofit applications, the most common source of power is the female Edison socket up in the can fixture. *Id.* (citing Ex. 1002 ¶ 49). Petitioner further contends that Wegner discloses adaptor kit 1520 with plug-in connector 1520c at one end and a screw-in Edison plug 1520b at the other end. *Id.* at 26 (citing Ex. 1015, 10:46-60, Figs. 6, 15, and 16). Petitioner concludes that “[e]mploying the accessory kit shown in Wegner would have yielded the predictable result of an adjustable height, more-easily-installed version of Soderman suitable for retrofit installation into existing cans.” *Id.*

In its Patent Owner Response, Patent Owner presents arguments disputing that Petitioner has demonstrated that one of ordinary skill in the art would have combined Soderman and Wegner as Petitioner has indicated with respect to independent claim 1. *See* PO Resp. 5–9. We address these arguments below.

a. Motivation to Combine Soderman and Wegner

Patent Owner argues that “a [person of ordinary skill in the art] would not be motivated to combine the two disparate references.” PO Resp. 5. Patent Owner argues that Petitioner does not provide explanations of how the teachings of Soderman and Wegner might be combined, and only generally identifies that Wegner provides for a modification and that Soderman would have been suitable for a retrofit installation. *Id.* at 6. Patent Owner argues that Soderman does not disclose any fixtures suitable for installation within a can light fixture and ordinarily skilled artisans would not have looked to Soderman for installations with a can structure, especially

one with an integral junction box. *Id.* at 7 (citing Ex. 2001 ¶¶ 24–29, 78–80, 166). With respect to Wegner, Patent Owner argues that its disclosure is specifically designed for installation into a can light fixture, and its teachings of a tall reflector disposed within a can light fixture runs contrary to “the optical design necessitated by the ’518 Patent, which includes an accessory kit for installation within junction boxes or can light fixtures.” *Id.* at 7–8 (citing Ex. 2001 ¶¶ 24–29, 73–75, 166–170).

Petitioner responds that claim 1 does not require that the recited light fixture be installed to a junction box or can light, such that the distinction raised by Patent Owner is not pertinent to claim 1. Pet. Reply 4–5. Petitioner also asserts that Patent Owner’s analysis ignores “the knowledge, skill, and creativity of a [person of ordinary skill in the art], and incorrectly suggests that if a reference fails to expressly disclose any limitation of the asserted claims, it should be disregarded entirely in an obviousness analysis.” *Id.* at 5. Petitioner also argues that distinction between fixtures installed in cans and junction boxes is solely supported by the testimony of Dr. Bretschneider, who cites to a 1981 handbook, but admitted during his deposition that LEDs for commercial lighting purposes were not available until about 2003 and the handbook necessarily would not have contemplated an LED light source more than 20 years prior. *Id.* at 7–8 (citing Ex. 1025, 34:16-35:2).

The Supreme Court has held that an obviousness evaluation “cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.” *KSR*, 550 U.S. at 419. Instead,

the relevant inquiry is whether Petitioner has set forth “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. at 418. When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

Based on the record developed during trial, we agree with Petitioner that one of ordinary skill in the art would have had a sufficient reason to employ the accessory kit of Wegner with the light fixture of Soderman to make those fixtures suitable for retrofit installation into existing cans. When, as here, a technique has been used to improve one device (i.e., Wegner’s use of its adaptor kit), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., to allow the fixture of Soderman to be used with existing cans), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 25–26; Ex. 1015, 10:46-60, Figs. 6, 15, and 16. The record includes credible evidence explaining why one of ordinary skill in the art would have been motivated to deploy Soderman’s fixture in both new and retrofit environments, and would have looked to Wegner to provide for such a capacity. *See* Pet. 25–26. Petitioner’s declarant, Dr. Coleman, provides the necessary motivation for doing so—namely, providing “an adjustable height, more-easily-installed version of Soderman suitable for retrofit installation into existing cans.” Ex. 1002 ¶ 49.

With respect to the testimony of Dr. Bretschneider, Patent Owner's declarant, we are not persuaded that "[c]eiling mounted light fixtures are a separate class of luminaires," nor that "[c]eiling mounted light fixtures are the antithesis of can light fixtures." Ex. 2001 ¶¶ 26, 27. Although Dr. Bretschneider warns that considering both "would improperly sweep in completely unrelated products such as streetlamps and even automotive headlamps" (*id.* at ¶ 29), we find such concerns to be unwarranted in considering the present ground of unpatentability. The lighting fixtures discussed in both Soderman and Wegner are directed to the use in the home, where Soderman explicitly discloses its use for retrofit installations, where multiple types of lighting situations would be encountered.

Likewise, we are unpersuaded by Dr. Bretschneider's testimony that modifying the fixture in Soderman, to be used with a can light housing, would "likely render [it] inoperable," and that "Soderman contains no teaching that the fixture would be suitable for installation with a recessed can housing." Ex. 2001 ¶¶ 78, 80. If we were to accept this line of argument, it would run contrary to the principles of law articulated in *KSR*. In *KSR*, the Supreme Court emphasized "an expansive and flexible approach" to an obviousness evaluation. 550 U.S. at 415; *see also Jazz Pharm., Inc. v. Amneal Pharm., LLC*, 895 F.3d 1347, 1363 (Fed. Cir. 2018) ("KSR did not impose a rigid requirement to identify . . . a problem to be solved in the art . . ."). The Court stated that, "[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents," among other things, "to determine whether there was apparent reason to combine the known elements in the fashion claimed by the patent at issue." 550 U.S. at 418. Moreover, the Court explained that, "[u]nder the correct analysis, any

need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420.

As such, although we appreciate that there is a distinction between fixtures installed in cans and junction boxes, we are not persuaded that they represent sufficiently different categories that one of ordinary skill in the art would not consider the teachings of one for use in another fixture. Similarly, we are unpersuaded that the two types of lighting fixtures are somehow non-analogous. We acknowledge that references considered under 35 U.S.C. § 103 need not be from the same field of endeavor (*KSR*, 550 U.S. at 402), but in the instant proceeding, we conclude that Soderman and Wegner are from the same field of endeavor, and we further conclude that a person of ordinary skill in the art could have been motivated to combine the two references. Based on the motivation supplied by Petitioner (Pet. 25–26), we conclude that it would have been obvious to combine Soderman and Wegner to reach a lighting fixture as argued by Petitioner.

b. Summary

In summary, Petitioner has demonstrated by a preponderance of the evidence that the subject matter of independent claim 1 would have been obvious over the combined teachings of Soderman and Wegner.

4. Dependent Claims 3, 6–8, 11, 12, and 14

Petitioner argues that Soderman and Wegner teach or suggest the limitations recited in challenged dependent claims 3, 6–8, 11, 12, and 14. Pet. 27–34. We discuss each in turn below.

Dependent claim 3 recites, in part, that “the heat sink is substantially ring-shaped, and is disposed around and coupled to an outer periphery of the heat spreader.” Petitioner contends that Soderman discloses ring-shaped heat sink in cover 20, which is round and has a hole through its center, is disposed around and in thermal communication with an outer periphery of the heat spreader, and is mechanically coupled to the mounting assembly. *Id.* at 27 (citing Ex. 1013, 8:1–5, Fig. 5).

Dependent claim 6 recites, in part, that “the LEDs are disposed on the heat spreader, the heat spreader being configured to dissipate heat from the LEDs.” Petitioner contends that Soderman’s LEDs are mounted on the heat spreader/mounting assembly, in “heat transferring relation,” to the heat spreader. *Id.* at 29–30 (citing Ex. 1013, 6:14–17, 8:26–28, Figs. 5, 6).

Dependent claim 7 recites, in part, that “the accessory kit further comprises a set of springs, each spring having a first portion configured to securely engage with the luminaire, and a second portion configured to deflect and slidably engage with an interior surface of a can-type light fixture.” Petitioner contends that Wegner generally teaches that “[a] typical recessed light fixture includes hanger bars fastened to a spaced-apart ceiling support joists.” *Id.* at 30 (citing Ex. 1015, 1:44–46). Petitioner further contends that Wegner discloses torsion springs used to secure the light fixture and that a person of ordinary skill in the art would have been motivated to include the springs because they are a very common method for installing fixtures into cans and because they provide a quick and easy way to insert the light fixture into the can that provides support and allows for easy removal. *Id.* at 31 (citing Ex. 1015, 9:22–27; Ex. 1002 ¶ 55).

Dependent claim 8 recites, in part, that “each spring of the set of springs is formed from flat stock spring steel.” Although Petitioner acknowledges that Wegner does not disclose springs made of “flat stock spring steel,” Petitioner contends a person of ordinary skill in the art would have known that flat stock spring steel is a commonly used material to make such springs. *Id.* at 32 (citing Ex. 1002 ¶ 56).

Dependent claim 11 recites, in part, that “the optic is securely retained relative to at least one of the heat spreader and the heat sink.” Petitioner contends that Soderman discloses its optic to be securely retained relative to the heat sink. *Id.* (citing Ex. 1013, Fig. 3).

Dependent claim 12 recites, in part, that the accessory kit includes “at least one twist-on wire connector.” Petitioner contends that twist-on wire connectors are an extremely common type of electrical connectors, and although Wegner does not expressly disclose twist-on wire connectors, it generally discloses the use of connectors to connect the various modules of the fixture. *Id.* at 32–33 (citing Ex. 1015, 10:46-50, 11:8-19).

Dependent claim 14 recites, in part, “a reflector disposed in optical communication with the LEDs and the optic such that light emitted from the LEDs is reflected by the reflector toward the optic.” Petitioner acknowledges that Soderman does not disclose a reflector, but asserts that Wegner discloses the same, as discussed above. *Id.* at 33. Petitioner contends that a person of ordinary skill in the art would have been motivated to include the reflector because wide angle light from the LED would otherwise be significantly absorbed by the housing between the LED and the optic. *Id.* at 34 (citing Ex. 1002 ¶ 59).

In its Patent Owner Response, Patent Owner argues that because claims 3, 6–8, 11, 12, and 14 depend from independent claim 1, its arguments against claim 1 apply as well to those dependent claims. PO Resp. 4. As we do not find Patent Owner’s arguments, addressed above, to be availing against dependent claims 3, 6–8, 11, 12, and 14.

With respect to dependent claim 14, Patent Owner raises additional arguments, namely that a person of ordinary skill in the art would have had no reason to combine Soderman and Wegner based on Wegner’s use of a reflector with a can light fixture, where Soderman does not disclose a housing between the LED and the optic, as addressed by Wegner. PO Resp. 9–10. Additionally, Patent Owner argues that because Soderman explicitly recognized that LEDs are used for spotlighting, it also acknowledges that the use of LEDs would have been outside its purview and provide no motivation to modify its light for such applications. *Id.* at 10 (citing 2002 ¶¶ 171–173).

In reply, Petitioner points out that Patent Owner ignores Dr. Coleman’s explanation that Wegner discloses a “reflector housing [that] that can be mounted substantially around the LED package,” where it is the combination of the two references that renders claim 14 obvious. Pet. Reply 10 (citing Ex. 1002 ¶ 59). Petitioner also disputes Patent Owner’s characterization of Soderman, pointing out that it references both “high power applications” of LEDs—“such as spotlights, automotive headlights etc.”—with LEDs used in “conventional domestic and commercial environments.” *Id.* (quoting Ex. 1013, 1:28-34).

We determine Petitioner’s position to be more persuasive. We agree that the obviousness of claim 14 is predicated on both Soderman and

Wegner, so the absence of a housing in Soderman is not an impediment. We also determine that the discussion of LEDs in Soderman, i.e., their use in spotlights and automotive headlights, would have prevented one of ordinary skill in the art to use Soderman's fixture in different applications, as provided by Petitioner's arguments, supported by the testimony of Dr. Coleman.

We have reviewed Petitioner's explanations and supporting evidence as to how this proffered combination teaches the limitations of claims 3, 6–8, 11, 12, and 14, as well as its explanations as to how one ordinary skill in the art would have combined the relevant teachings of Soderman with those of Wegner, and we agree with and adopt Petitioner's analysis. See Pet. 27–34. Petitioner, therefore, has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 3, 6–8, 11, 12, and 14 would have been obvious over the combined teachings of Soderman and Wegner.

*E. Obviousness Over the Combined Teachings of
Soderman, Wegner, and Silescent*

Petitioner contends claims 4, 5, and 13 of the '518 Patent are unpatentable under 35 U.S.C. § 103 over Soderman, Wegner, and Silescent, Pet. 34–37. In its Patent Owner Response, Patent Owner contends that Petitioner has not demonstrated that Silescent is a prior art printed publication in accordance with 35 U.S.C. § 311(b). PO Resp. 10.

We begin our analysis with a brief overview of Silescent, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

1. Silescent Overview

Silescent is product literature and installation instructions for a dimmable light, i.e., Silescent S100LP2. Ex. 1016. Petitioner proffers the declaration of Mr. Daryl Soderman, who testifies that Silescent is a true and accurate copy of the product sheet and installation guide for the indicated product that were made available to the public at least as early as June 2009, and were typically distributed. Ex. 1017 ¶¶ 3–4. Figures 1 and 3 from Silescent, as annotated by the Board, are reproduced below:

S100 LP2 - Ultra Low Profile Light and Fixture

Figure 1 (Drawing Not to Scale)

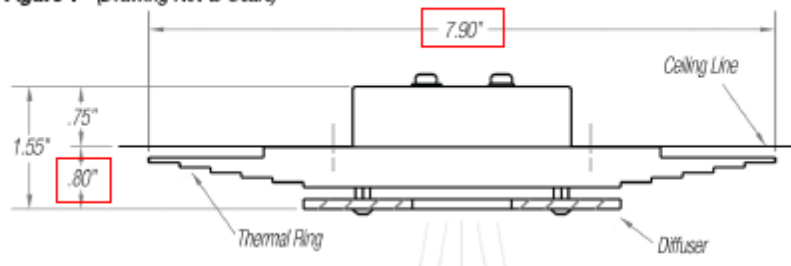
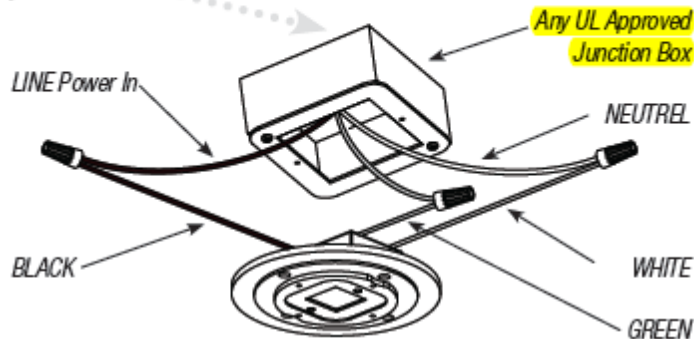


Figure 3 Electrical Connections (ON/OFF Control and dimmed)

For clarity power wires are not shown leading into junction box.



Ex. 1016, 2, 4.

The annotated version of Figure 1 illustrates that the height of the fixture below the ceiling line, including mounting assembly, cove and light shield, is 0.80 inches and the fixture has a diameter of 7.90 inches, thus providing a

height/diameter (“H/D”) ratio of 0.101. The annotated version of Figure 3 illustrates that the fixture can, in part, be received by “any UL approved junction box,” with power being received from household AC voltage.

2. Claims 4, 5, and 13

Claim 4 recites that the heat spreader, the heat sink, and the optic have an overall height and outside dimension such that their ratio (H/D) is equal to or less than 0.25. Claim 5 recites that the overall dimensions of the heat spreader, the heat sink, and the optic cover an opening defined by a nominally sized four-inch can light fixture or electrical junction box. Claim 13 recites that the accessory kit includes at least one fastener configured to secure the luminaire to an electrical junction box.

In its Petition, with respect to claims 4 and 5, Petitioner acknowledges that Soderman and Wegner do not expressly disclose the dimensions of the heat spreader, the heat sink, and the outer optic, but contends that it would have been obvious to one of ordinary skill in the art to implement the luminaire of Soderman and Wegner using the dimensions disclosed in Silescent because Silescent is a commercial embodiment of Soderman and would cover a 4-inch box or a 4-inch can.. Pet. 34–36 (citing Ex. 1002 ¶¶ 61, 62; Ex. 1017 ¶ 6).

With respect to claim 13, Petitioner contends that Figures 2 and 5 of Silescent illustrate the use of fasteners to secure an adaptor plate and a light fixture to a junction box. *Id.* at 36–37 (citing Ex. 1016, Figs. 2, 5). Petitioner contends that it would have been obvious to one of ordinary skill in the art to use the fasteners of Silescent because they are common means to mechanically secure components of a light fixture assembly and would have been among a finite number of identified, predictable solutions. *Id.* at 36–37

(citing Ex. 1002 ¶¶ 62–63; *KSR*, 550 U.S. at 402).

As an initial matter, Patent Owner does not address separately Petitioner’s explanations and supporting evidence as to how the combined teachings of Soderman, Wegner, and Silescent account for the limitations of dependent claims 4, 5, and 13. *See generally* PO. Resp. 10–17. We have reviewed Petitioner’s explanations and supporting evidence as to how this proffered combination teaches these limitations, and we agree with and adopt Petitioner’s analysis. *See* Pet. 34–37.

Patent Owner’s sole argument against this ground of unpatentability is that Silescent does not qualify as a prior art printed publication. PO Resp. 10–17. In the Institution Decision, we preliminarily determined that Petitioner made “a sufficient showing that Silescent is a printed publication, within the meaning of 35 U.S.C. § 102, and available as part of a ground of review under 35 U.S.C. § 311(b).” Dec. on Inst. 19. We revisit that determination based on the arguments of Patent Owner and Petitioner, and taking into account the record developed during trial, and consider whether Petitioner has demonstrated, by a preponderance of the evidence, that Silescent is a printed publication, within the meaning of 35 U.S.C. § 102.

Patent Owner points out that the installation guide portion of Silescent describes the S100 LP2 product through the inclusion of “Patents Pending.” PO Resp. 12. Patent Owner argues that although no patents covering the S100 LP2 product were granted as of June 2009 (i.e., the latest date ascribed by Mr. Soderman), a patent application covering that product was pending at that time. *Id.* Patent Owner contrasts this with the Silescent product sheet, which multiple times indicates that “multiple patents [had been] secured.” *Id.* at 13 (citing Ex. 1014, 1). Patent Owner asserts that no relevant patent

was issued by June 2009, arguing that Mr. Soderman's testimony confirmed the same, such that the "document itself strongly indicates that it was not in existence prior to the critical date." *Id.* at 13–14 (citing Ex. 2004, 29:16–19). Also, based on remarks made in Mr. Soderman's deposition, Patent Owner argues that his declaration is speculative and insufficient to demonstrate that the Silescent product sheet was in existence or publicly available in June 2009. *Id.* at 14 (citing Ex. 2004, 39:20–21, 41:20–24, 59:14–15).

With respect to the ground of unpatentability, Patent Owner points out that the ground relies mostly on the disclosure of the Silescent product sheet, where the published nature of the Silescent installation guide, having a copyright notice, is not explicitly disputed. *Id.* at 15–16. As such, Patent Owner argues that, in the Institution Decision, "the Board rest[ed] its public accessibility determination for the Silescent product sheet only on Mr. Soderman's testimony, which is inconsistent with the statements on the face of the document itself." *Id.* at 16. Patent Owner argues that a bare statement, such as in this proceeding, is not sufficient to show public accessibility. *Id.* (citing *Cisco Systems v. Constellation Techs.*, Case IPR 2014-01085, slip op. at 9 (PTAB Jan. 9, 2015) (Paper 11); *Square, Inc. v. Unwired Planet, LLC*, Case CBM 2014-00156, slip op. at 17 (PTAB Dec. 24, 2014) (Paper 11)). Patent Owner concludes that because the relevant portions of Silescent have not be shown to be a printed publication as of the critical date, it cannot be used to show unpatentability of claims under 35 U.S.C. § 311(b). *Id.* at 15.

Petitioner replies that Mr. Soderman's testimony supports Silescent being considered a printed publication with respect to the subject claims.

Pet. Reply 11–18. Mr. Soderman testified that the Silescent product sheet and installation instructions for the S100LP2 product were available to the public by June 2009, and that that it was his company’s standard practice to send out the product sheet and installation instructions not only with products that had been sold but also to potential clients in the months leading up to the first sale of the S100LPS product in July 2009. Ex. 2004, 19:19–20:2; 52:10–55:7. Further, Mr. Soderman indicated that he was not aware of situations where the installation guide and specification sheets were not both provided along with the product or products sample. Ex. 2004, 15:3–15. Petitioner asserts that those interested in LED light fixtures would have been able to find the Silescent product sheet, because Mr. Soderman’s company was engaged in an effort to market and sell the product so those interested in the product would have been able to gain access to these documents. Pet. Reply 13 (citing Ex. 2004, 18:8–13; 42:7–13). Petitioner also argues that an invoice dated July 2009 from Mr. Soderman’s company acts as corroboration of his testimony. *Id.* at 15 (citing Ex. 2004, 85).

The determination of whether a given reference qualifies as a prior art “printed publication” involves a case-by-case inquiry into the facts and circumstances surrounding the reference’s disclosure to members of the public. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004). The key inquiry is whether the reference was made “sufficiently accessible to the public interested in the art” before the critical date. *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989); *In re Wyer*, 655 F.2d 221, 226 (CCPA 1981). “A given reference is ‘publicly accessible’ upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or

art exercising reasonable diligence, can locate it.” *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006). Further, if accessibility is proved, “there is no requirement to show that particular members of the public actually received the information.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988).

The declaration from Mr. Soderman may be used as evidence of his company’s routine business practice supporting the publication of Silescent. *See Swindell Dressler Int’l Co. v. Travelers Cas. & Sur. Co.*, 827 F.Supp. 2d 498, 502 (W.D. Pa. 2011); *see* Fed. R. Evid. 406, 803, and 902; *see also*, *e.g.*, *Envirex, Inc. v. Ecological Recovery Assocs., Inc., et al.*, 454 F.Supp. 1329, 1333 (M.D. Pa. 1978) (“[E]vidence of the routine practice of an organization, *whether corroborated or not*, is relevant to prove that the conduct of the organization in a particular occasion was in conformity with the routine practice”) (emphasis added); American Jurisprudence Proof of Facts; Second Series, 35 POF 2d 589 ¶¶ 1–11 (1983). The probative value of routine business practice to show the performance of a specific act has long been recognized. *In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986) (citations omitted). “Evidence of routine business practice can be sufficient to prove that a reference was made accessible before a critical date.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988).

We credit Mr. Soderman’s testimony as showing the routine general business practice of his company in the relevant period included the distribution of the Silescent product sheet. Ex. 1017 ¶ 4; Ex. 2004, 52:10–17. Mr. Soderman also testifies that it would have been a normal business

practice at the time to provide samples or demos of fixtures. Ex. 2004, 52:22–53:24. Mr. Soderman also testifies that:

[the inclusion of installation guide] would have been critical for many different reasons and again depending upon the nature of the call or communications happening at the time and who we were speaking with but with any demo that we would provide the installation instruction *as well as the spec sheet is vital* so that once we leave communication with whomever we left it with they would have some materials for which their colleagues as well as their end customers perhaps if it wasn't the end customer would take up communication and be able to effectively communicate that, the specifications and the properties as well as the mounting.

Ex. 2004, 54:5–16 (emphasis added). Mr. Soderman's testimony is also supported by the inclusion and discussion of a specific invoice (Ex. 2004, 85), where discussion of that invoice encompassed a large portion of his deposition. See Ex. 2004, 19:12–20:10, 41:7–13, 43:6–46:15, 55:19–56:7. Mindful of the preponderance standard that applies to this proceeding, we find that the invoice sufficiently corroborates Mr. Soderman's testimony as to activity of his company in the relevant period of June 2009, illustrating the date on which the ordinary business practice occurred. Although Patent Owner characterizes Mr. Soderman's declaration as "speculative" (PO Resp. 14), we find that it is sufficient evidence to demonstrate the existence and distribution of Silescent, with respect to both the installation guide and the product sheet.

With respect to Patent Owner's arguments that the Silescent product sheet details that "multiple patents [had been] secured," but no patents covering the fixture had been issued (PO Resp. 12–14), we find persuasive Mr. Soderman's testimony that the product sheet was created without legal

review. Ex. 2004, 16:17–8:7. We also concur with Petitioner when it states that “it’s understandable that a layperson who is not a lawyer getting a notice of allowance when the examination on merits is completed and there are still administrative actions that need to be followed, that that person would think that they have obtained a patent.” Tr. 16:22–17:3. Additionally, as Petitioner points out, Silescent Lighting Corporation received notices of allowance of two design patents in June 2009, such that those patents could arguably be the patents covered by the “multiple patents secured” mentioned on the Silescent product sheet, particularly given the ambiguity of the imprecise word “secured.”

We now address the specific cases cited by Patent Owner. *Cisco Systems* was concerned with “an Internet-Draft, which was ‘valid’ for only a limited time and was deemed inappropriate for citation.” *Cisco Systems*, slip op. at 8. Unlike the draft in *Cisco Systems*, the Silescent product sheet is not a transitory document; Mr. Soderman’s testimony establishes *when* it was made available, not whether it was *ever* available for a sufficient period. Likewise, in *Square*, we were concerned with the veracity of a supplied publication date and confidentiality issues raised in the document itself. *Square*, slip op. at 18–19. Those issues are not present in this proceeding. Specifically, the trial record raises no issues of confidentiality, nor does it raise doubts with respect to the date provided in the Silescent installation guide, where evidence of record demonstrates that the portions were circulated to the public together.

Patent Owner also argues that the facts here are similar to a prior Board decision finding no evidence of public accessibility. PO Resp. 14–15 (citing *Hewlett-Packard Co. v. U.S. Philips Corp.* Case IPR2015-01505, slip

op. at 9 (PTAB Jan. 19, 2016) (Paper 16)). In *Hewlett-Packard Company v. U.S. Philips Corporation*, a document including a specific date was not found to be sufficiently publicly accessible to qualify as prior art because it included other information within the document itself that was inconsistent with the specific date. *Id.* Petitioner replies that the document in *Hewlett-Packard* cited a paper published after the specific date, and the petitioner in that case provided no evidence showing that the document was available to the public, nor explained the date discrepancies. Pet. Reply 17. Petitioner contrasts *Hewlett-Packard* with the instant proceeding insofar as Mr. Soderman's testimony is corroborated by a sale invoice and the Silescent product sheet itself has no temporal inconsistencies. *Id.* at 17-18. We agree with Petitioner that the facts of *Hewlett-Packard* are distinguishable from the instant case.

It is also relevant that we have previously found similar materials to be publicly available. See *L&P Property Management Co. v. National Prods. Inc.*, Case IPR2016-00475, slip op. at 23 (PTAB July 19, 2017) (Paper 27)). In that case, we determined that testimony supported that instructions were shipped with the product, where that testimony also addressed the normal business practices of the company doing the shipping and included "contemporaneous invoices substantiating the shipment." *Id.* Based on the evidence presented and considered during this trial, we determine that Silescent qualifies as a prior art printed publication under 35 U.S.C. § 102.

As such, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that Silescent is a printed publication, within the meaning of 35 U.S.C. § 102, and available as part of a ground of review under 35 U.S.C. § 311(b). Therefore, we determine that Petitioner has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 4, 5, and 13 would have been obvious over the combined teachings of Soderman, Wegner, and Silescent.

*F. Obviousness Over the Combined Teachings of
Soderman, Wegner, Barnett and/or Van Elmpt*

Petitioner contends claim 10 of the '518 Patent is obvious over Soderman, Barnett, and/or Van Elmpt (Pet. 20, 37–41), omitting any discussion of Wegner, applied in combination with Soderman against independent claim 1, as discussed above. In our Decision on Institution, we noted that this ground does “not rely on teachings from Wegner in any way,” so that there was “is nothing in the Petition that addresses all of the elements of claim 10, which includes all of the elements of claim 1.” Dec. on Inst. 27. Based on this, we concluded Petitioner had not demonstrated a reasonable likelihood of establishing that claim 10 would have been obvious, in view of Petition. *Id.*

As noted above, the instant ground pertaining to claim 10 was later instituted as a ground of unpatentability in this proceeding. See Paper 19. Also, one of the later petitioners, Leedarson, indicated that it sought to include Wegner in the ground of Soderman and Van Elmpt to correct “an apparent clerical error.” See Paper 23, 4. We indicated that “even with the explicit inclusion of Wegner, we are not persuaded that these alternative

grounds raise any different issues than the grounds applied against claim 10 in the [instant proceeding], which were instituted therein.” *Id.* at 5. Indeed, Leedarson’s petition explicitly invokes the analysis of both “Soderman and Wegner [to] teach all of the elements of claim 1.” Case IPR2018-00270, Paper 1, 37.

Claim 10 recites “the heat spreader and the heat sink in combination define a base, wherein the base comprises engagement openings, wherein the optic comprises engagement tabs, wherein the optic is securely retained by the base by inserting respective ones of the engagement tabs into respective ones of the engagement openings and rotating the optic relative to a cylindrical axis of the base such that a portion of each engagement tab is securely retained by respective portions of the base.” Petitioner asserts that this claim covers “a common bayonet style fastening mechanism to retain the optic to the heat sink,” and we agree with that characterization. Pet. 38.

Petitioner identifies Barnett and Van Elmpt as teaching these types of connection mechanisms. Pet. 38–41 (citing Ex. 1019 ¶ 37, Figs. 4, 7; Ex. 1020, 2:12–15, 4:3–9, 5:18–24, 5:27–32, Figs. 3a–4b). With respect to both references, Petitioner asserts that one of ordinary skill in the art would have been motivated to include the connection mechanisms to secure the optic to the heat spreader/heat sink combination “to eliminate visibility of the attachment mechanism, make the optic (light shield) more uniform with more area for optical functionality, increase thermal coupling, and eliminate loose components,” and “because such an arrangement ‘ensures thermal contact’ and can be ‘advantageously carried out without having to use flexible elements, or screws, glue or other additional components.’” Pet. 39, 41 (citing Ex. 1020, 2:8–10; Ex. 1002 ¶¶ 64, 66).

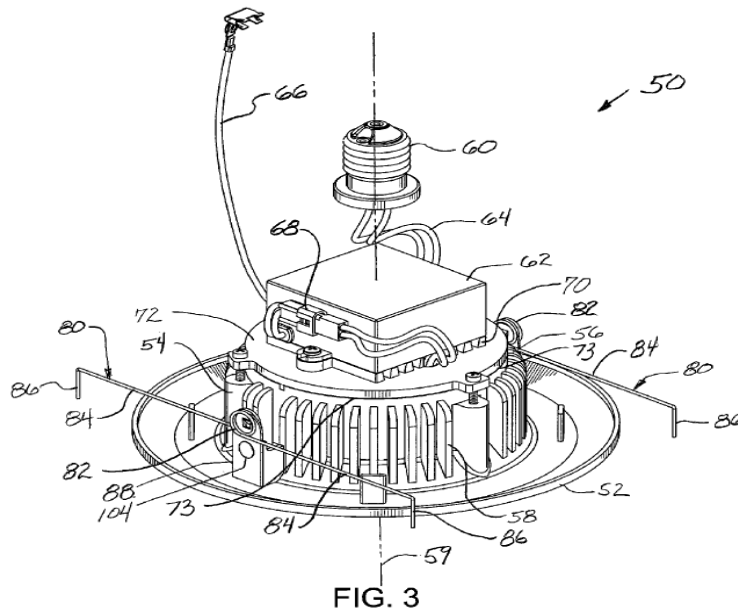
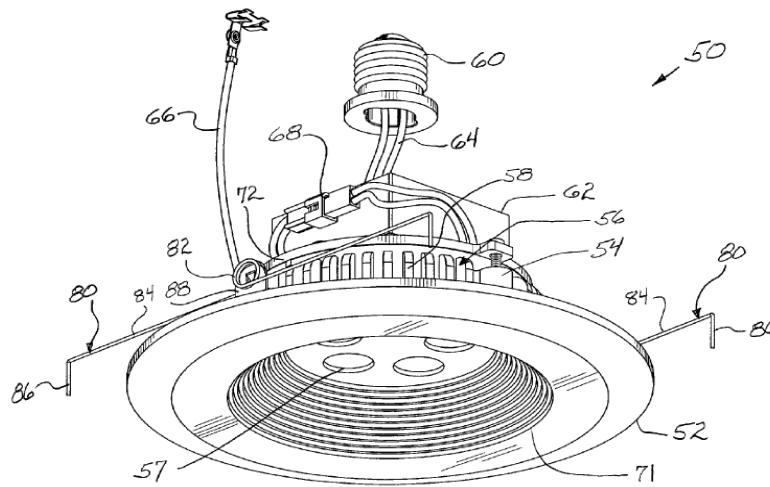
We have reviewed Petitioner's explanations and supporting evidence as to how this proffered combination teaches the additional limitations of claim 10, and we agree with and adopt Petitioner's analysis. See Pet. 20, 37–41. Both Barnett and Van Elmpt teach the claimed type of connection mechanism, and we agree with Petitioner that it would have been an obvious variation to provide such an attachment between the optic and the heat spreader/heat sink. We determine, therefore, that Petitioner has demonstrated by a preponderance of the evidence that the subject matter of dependent claim 10 would have been obvious over the combined teachings of Soderman, Wegner, Barnett, and/or Van Elmpt.

G. Obviousness Over the Combined Teachings of Zhang and Wegner

Petitioner contends claims 1, 3, 5–8, 11, 12, and 14 of the '518 Patent would have been obvious under 35 U.S.C. § 103 over Zhang and Wegner. Pet. 41–56. Petitioner explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Petitioner also relies upon the Declaration of Dr. Coleman to support its positions. Ex. 1002 ¶¶ 27, 80–93. In its Patent Owner Response, Patent Owner presents a number of arguments as to why the combined teachings of Soderman and Wegner do not render the limitations of claims 1, 3, 6–8, 11, 12, and 14 obvious. PO Resp. 17–20. Patent Owner relies upon the Declaration of Dr. Bretschneider to support its positions. Ex. 2001 ¶¶ 47, 48, 74, 75, 81–83, 174–179. We begin with an overview of Zhang and then discuss the positions of Petitioner and Patent Owner.

1. Overview of Zhang

Zhang is a U.S. patent directed to “a recessed lighting fixture that provides improved heat dissipation and grounding.” Ex. 1014, 1:15–17. Figures 2 and 3 of Zhang are reproduced below.



Figures 2 and 3 depict trim unit 50 for a recessed light fixture having trim ring 52, baffle 54, and heat sink 56. Ex. 1014, 7:55–8:1. Trim unit 50

also includes trim cup 72. *Id.* at 8:31–34. A plurality of LEDs 57 are mounted to trim cup 72 within baffle 54. *Id.* at 7:65–8:1, 8:10–14, 9:44–48. Heat is transferred from the LEDs to the trim cup. *Id.* at 12:42–48. In turn, heat is transferred to the baffle and heat sink of the trim unit, from which it can be dissipated into the surrounding room via the trim ring portion of the trim unit. *Id.* at 7:9–13, 7:65–8:1. Zhang also describes the LEDs being “located within LED lenses” and a tempered glass plate disposed below the LEDs. *Id.* at 9:41–44.

2. Analysis of Cited Art as Applied to Independent Claim 1

In its analysis for claim 1, Petitioner cites Zhang’s trim cup for the recited “heat spreader.” Pet. 42 (citing Ex. 1014, 12:43–48). Petitioner notes that LEDs are mounted to the trim cup, which is made of a thermally conductive material such that the LEDs are in thermal communication with the trim cup. *Id.* (citing Ex. 1014, 8:37–38, 9:44–48, 12:43–48, Fig. 5). With respect to the claimed “heat sink,” Petitioner cites Zhang’s “trim unit,” having trim ring 52 and baffle 54 with “low profile” heat sink 56. *Id.* (citing Ex. 1014, 3:6–18, 4:23–39). With respect to the “light source” recited in claim 1, Petitioner cites to Zhang’s LEDs. *Id.* at 44 (citing Ex. 1014, 8:10–12, 9:44–48).

With respect to the “power supply” limitation of claim 1, Petitioner cites to Zhang’s light socket adaptor 60 and drive unit 62. *Id.* at 44–45 (citing Ex. 1014, 8:22–26). With respect to the “optic,” Petitioner cites to Zhang’s disclosure of tempered glass plate 106, disposed below the LED light sources. *Id.* at 45 (citing Ex. 1014, 9:41–44). Petitioner notes that Zhang also discloses lenses 108 over the LEDs and printed circuit board, and that other plates, such as plastic diffusing lenses could be substituted for the

“glass plate” in order to achieve different aesthetic properties. *Id.* at 45–46. Petitioner also cites to Wegner for its disclosure of a reflector housing configured to receive a reflector composed of a material for reflecting, refracting, transmitting, or diffusing light emitted by the LED package 305. *Id.* at 46 (citing Ex. 1015, 8:33–39).

With respect to the “pre-wired jumper” limitation of claim 1, which Petitioner refers to as an “accessory kit,” Petitioner acknowledges that Zhang does not explicitly disclose such an element. *Id.* at 46. Petitioner contends that in retrofit applications, the most common source of power is the female Edison socket up in the can fixture. *Id.* (citing Ex. 1002 ¶ 27). Petitioner further contends that Wegner discloses adaptor kit 1520 with plug-in connector 1520c at one end and a screw-in Edison plug 1520b at the other end. *Id.* at 47 (citing Ex. 1015, 10:46-60, Figs. 6, 15, and 16). Petitioner concludes that “[e]mploying the accessory kit shown in Wegner would have yielded the predictable result of an adjustable height, more-easily-installed version of Zhang suitable for retrofit installation into existing cans.” *Id.* at 47–48 (citing Ex. 1002 ¶ 78).

In its Patent Owner Response, Patent Owner disputes that Petitioner has demonstrated that one of ordinary skill in the art would have combined Zhang and Wegner as Petitioner has indicated with respect to independent claim 1. *See* PO Resp. 17–20. We address these arguments below.

a. Motivation to Combine Zhang and Wegner

Patent Owner argues that “a [person of ordinary skill in the art] would not be motivated to combine the two disparate references.” PO Resp. 18 (citing Ex. 2002 ¶¶ 174–179). Patent Owner argues that Petitioner has failed to explain why one of ordinary skill in the art would have combined Zhang

and Wegner, which disclose only installation with a can light fixture, to arrive at the low-profile luminaire recited in claim 1. *Id.* at 19 (citing Ex. 2002 ¶¶ 174–179). Additionally, Patent Owner argues that Zhang is already suitable for retrofit installation into existing cans, so there would have been no need to add the accessory kit of Wegner, and that “the optical designed necessitated by the ’518 Patent is contrary to the teachings of Wegner’s tall reflector disposed within a can light fixture and a [person of ordinary skill in the art] would not be motivated to combine the references to arrive at the claimed invention.” *Id.* at 19–20 (citing Ex. 2002 ¶¶ 174–179).

Petitioner replies that Dr. Coleman’s testimony supports the proposition that one of ordinary skill in the art would have been motivated to combine Zhang and Wegner to obtain a fixture that is more easily installed. Pet. Reply 19 (citing Ex. 1002 ¶¶ 76–79). Petitioner also asserts that Zhang and Wegner are analogous, i.e., in the same fields of endeavor, to the luminaire of claim 1, and that claim 1 does not recite the use of the claimed fixture with “a can light, unction box, or otherwise.” *Id.* at 19–20. Additionally, Petitioner responds that Dr. Coleman has made clear that a detachable Edison adaptor, per Wegner, would be easier to install, compared to the non-detachable Edison base in Zhang, and that claim 1 does not recite any limitation to a reflector, so that disregarding Wegner because of its reflector would be “specious and contrary to the law of obviousness. *Id.* at 20–21 (citing Ex. 1002 ¶¶ 76, 78; *In re Klein*, 647 F.3d 1343, 1348 (Fed. Cir. 2011)).

Based on the record developed during trial, we agree with Petitioner that one of ordinary skill in the art would have had a sufficient reason to employ the accessory kit of Wegner with the light fixture of Zhang to

provide a luminaire according to claim 1. Dr. Coleman testifies that a person of ordinary skill in the art would have understood that including a connector, such as that disclosed in Wegner, would have made Zhang's non-detachable Edison base detachable, and thus easier to install, which would have made the combination "desirable and obvious." Ex. 1002 ¶ 78. We also agree with Petitioner that Patent Owner does not dispute that Zhang and Wegner disclose all of the limitations of claim 1. Pet. Reply 18. As such, claim 1 is not distinguishable from the light fixture derived from the combination of Zhang and Wegner. Claim 1 requires its power conditioner to be "sized to fit at least partially within an interior space of: a nominally sized can light fixture; and, a nominally sized electrical junction box," but does not specifically require the use of either a can light fixture or an electrical junction box. Similarly, claim 1 does not recite a specific optical design, nor a reflector, such that consideration of such elements would require reading elements of the specification into claim 1. See *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004).

b. Summary

In summary, Petitioner has demonstrated by a preponderance of the evidence that the subject matter of independent claim 1 would have been obvious over the combined teachings of Zhang and Wegner.

3. Analysis of Cited Art as Applied to Claims 3, 5–8, 11, 12, and 14

Petitioner argues that Zhang and Wegner disclose or suggest the limitations recited in challenged dependent claims 3, 5–8, 11, 12, and 14. Pet. 48–56. All of these claims are dependent on claim 1, and were discussed above with respect to the other grounds. Petitioner identifies evidence indicating that the combination of Zhang and Wegner also teaches

or suggests the limitations in these claims. *See id.*

In its Patent Owner Response, Patent Owner does not address separately whether the combined teaching of Zhang and Wegner account for the limitations of dependent claims 3, 5–8, 11, 12, and 14. *See generally* PO Resp. 17–20. We have reviewed Petitioner’s explanations and supporting evidence as to how this proffered combination teaches these limitations, as well as its explanations as to how one ordinary skill in the art would have combined the relevant teachings of Zhang with those of Wegner, and we agree with and adopt Petitioner’s analysis. *See* Pet. 48–56. Petitioner, therefore, has demonstrated a by a preponderance of the evidence that the subject matter of dependent claims 3, 5–8, 11, 12, and 14 would have been obvious over the combined teachings of Zhang and Wegner.

*H. Obviousness Over Zhang, Wegner, and Silescent;
Zhang, Wegner, Barnett and/or Van Elmpt*

Petitioner contends claims 4 and 13 of the ’518 Patent are unpatentable under 35 U.S.C. § 103 over Zhang, Wegner, and Silescent. Pet. 56–58. In addition, Petitioner contends claim 10 of the ’518 Patent is unpatentable under 35 U.S.C. § 103 over Zhang, Wegner, Barnett and/or Van Elmpt. *Id.* at 58–62. We have discussed the subject matter of claims 4, 10, and 13 above, as well as the disclosures of Silescent, Barnett, and Van Elmpt. Petitioner identifies evidence indicating that the combination of Zhang, Wegner, and Silescent teaches or suggests the limitations of claims 4 and 13, and evidence indicating that the combination of Zhang, Wegner, Barnett and/or Van Elmpt, as well as explanations and evidence that one of ordinary skill in the art would have combined the references as provided in

the Petition. *Id.* at 56–62.

In its Patent Owner Response, Patent Owner does not address separately whether the combinations of references teach or suggest all of the limitations of dependent claims 10 and 13, addressing arguments only to claim 1, from which those claims depend. *See generally* PO Resp. 17–23. We have reviewed Petitioner’s explanations and supporting evidence as to how these proffered combinations teach or suggest the limitations of claims 10 and 14, as well as its explanations as to how one ordinary skill in the art would have combined the relevant teachings of the references, and we agree with and adopt Petitioner’s analysis. *See* Pet. 57–62. Petitioner, therefore, has demonstrated a by a preponderance of the evidence that the subject matter of dependent claim 10 would have been obvious over the combined teachings of Zhang, Wegner, Barnett, and/or Van Elmpt, and that the subject matter of dependent claim 13 would have been obvious over the combined teachings of Zhang, Wegner, and Silescent.

With respect to claim 4, Patent Owner reiterates that Silescent is not a patent or printed publication, and additionally argues that Petitioner has supplied no reason to combine Silescent with Zhang or Wegner. PO Resp. 20–23. With respect to the former argument, we are not persuaded by Patent Owner’s arguments against Silescent being a printed publication, as discussed above, and we do not find it more persuasive in the context of claim 4. Regarding the latter argument, Petitioner points out that “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton,” and points to Dr. Coleman’s testimony that designing a light fixture that intrudes as little as possible into the room, it would have been apparent to a skilled artisan to follow the teachings of Silescent, resulting in a low profile

fixture. Pet. Reply 21–22 (quoting *KSR*, 550 U.S. at 421; citing Ex. 1002 ¶¶ 25, 94).

Based on the record developed during trial, we agree with Petitioner that one of ordinary skill in the art would have had a sufficient reason to employ the dimensions of Silescent with the light fixture of Zhang and Wegner to provide a luminaire according to claim 1. See Pet. 56–57. Silescent demonstrates, through its disclosure, that a low-profile fixture with certain height to diameter dimensions would be operable. See Ex. 1016, 2, 4. As Petitioner points out, “Silescent is a commercial embodiment of Soderman” (Pet. 56), further suggesting its use to produce a low-profile fixture. We are persuaded that the indicated motivation to combine would have been to obtain a low-profile fixture of the dimensions indicated in Silescent for a type of ceiling fixture that does not protrude substantially into the room. See Ex. 1002 ¶ 25. Petitioner, therefore, has demonstrated a by a preponderance of the evidence that that the subject matter of dependent claim 4 would have been obvious over the combined teachings of Zhang, Wegner, and Silescent.

III. CONCLUSIONS

Petitioner has demonstrated by a preponderance of the evidence that (1) claims 1, 3, 6–8, 11, 12, and 14 are unpatentable under § 103 over Soderman and Wegner; (2) claims 4, 5, and 13 are unpatentable under § 103 over Soderman, Wegner, and Silescent; (3) claim 10 is unpatentable under § 103 over Soderman, Wegner, Barnett, and/or Van Elmpt; (4) claims 1, 3, 5–8, 11, 12, and 14 are unpatentable under § 103 as unpatentable over Zhang and Wegner; (5) claims 4 and 13 are unpatentable under § 103 over Zhang,

Wegner, and Silescent; and (6) claim 10 is unpatentable under § 103 over Zhang, Wegner, Barnett, and/or Van Elmpt.

IV. ORDER

In consideration of the foregoing, it is
ORDERED that claims 1, 3–8, and 10–14 of the '518 Patent are held
to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision,
parties to this proceeding seeking judicial review of our decision must
comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2017-01285
Patent 8,672,518 B2

For PETITIONER:

Jason G. Harp
Steven H. Noll
Thomas A. Rammer
Stacie Hartman (admitted *pro hac vice*)
SCHIFF HARDIN LLP
jharp@schiffhardin.com
snoll@schiffhardin.com
trammer@schiffhardin.com
shartman@schiffhardin.com

For PATENT OWNER:

Garret A. Leach
Eric D. Hayes
Eugene Goryunov
Kyle M. Kantarek
KIRKLAND & ELLIS LLP
garret.leach@kirkland.com
eric.hayes@kirkland.com
eugene.goryunov@kirkland.com
kyle.kantarek@kirkland.com