Exhibit 375-1

The following chart demonstrates that asserted claim 4 of U.S. Patent No. 8,309,375 (the "'375 patent") is anticipated by U.S. Patent No. 6,600,175 ("Baretz"), and obvious in view of Baretz alone or in combination with one or more of the following references:

- U.S. Patent No. 3,699,478 ("Pinnow")
- U.S. Patent No. 4,024,070 ("Schuil")
- U.S. Patent No. 6,245,259 ("Hohn")
- Pinnow et al., *Photoluminescent Conversion of Laser Light for Black and White and Multicolor Displays*, Applied Optics, Vol. 10, No. 1 (1971) ("Pinnow Publication")
- J.M. Robertson et al., *Colourshift of the CE^{3+} Emission in Monocrystalline Epitaxially Grown Garnet Layers*, Philips J. Res. 36 (1981) ("Robertson")
- L.G. Van Uitert et al., "Photoluminescent Conversion of Laser Light for Black and White and Multicolor Displays. 1: Materials" Applied Optics Vol. 10, No. 1 (1971) ("Van Uitert")
- M.V. Hoffman, "Improved Color Rendition in High Pressure Mercury Vapor Lamps," Journal of the Illuminating Engineering Society, Vol. 6, No. 2 (1977) ("Hoffman")
- G. Blasse et al., "Luminescent Materials," Springer-Verlag (1994) ("Blasse")
- S. Nakamura et al., "High-Power InGaN Single-Quantum-Well-Structure Blue and Violet Light-Emitting Diodes," Applied Physics Letters 67, 1868 (1995) ("Nakamura")
- G. Blasse et al., "Luminescent Materials," Springer-Verlag (1994) ("Blasse")
- Schlotter et al., *Luminescence Conversion of Blue Light Emitting Diodes*, Applied Physics A 64, 417-18 (Feb. 27, 1997) ("Schlotter")

The analysis in this chart is based on the apparent claim constructions and interpretations that Nichia has advanced to allege infringement of the claim 4 of the '375 patent, as set forth in Nichia's Supplemental Infringement Contentions served December 29, 2016 and Nichia's Third Amended and Supplemented Preliminary Disclosure of Asserted Claims and Infringement Contentions served September 14, 2017. Nothing in this chart should be interpreted as VIZIO conceding that Nichia's apparent claim constructions and interpretations are correct or supported by intrinsic or extrinsic evidence.

The analysis in this chart is preliminary, and VIZIO's investigation into the invalidity of claim 4 of the '375 patent is ongoing. VIZIO reserves the right to provide additional theories under which the cited prior art anticipates or renders obvious claim 4 of the '375 patent. The citations to specific disclosure of the prior art references in this chart are exemplary, and VIZIO reserves the right to rely on additional disclosures to the same references. VIZIO also reserves the right to offer expert testimony and opinions

	known and predictable advantages, such as improved color output and color rendering, and the ability to withstand harsh operating conditions. Exemplary details of why it would have been obvious to combine the teachings of these references are set forth below: ***First***, Baretz and Pinnow are in the same field of endeavor as the '092 patent and pertinent to the problem the inventors were trying to solve. The '092 patent is generally directed to creating white light, by combining light emitted from a solid-state device (such as an LED) and light emitted from a phosphor. Baretz is in this same field because it discloses creating white light by combining a blue light-emitting LED with light emitting from a down-converting phosphor. Baretz at 9:4-9. Pinnow, likewise, is in the same field of endeavor addressed by the '092 patent – the partial down-conversion of blue light to make white light. Pinnow at Abstract, 1:44-49. In addition, Pinnow discloses systems for down converting blue light to generate white light using a source of light emitting within the excitation spectrum of YAG phosphor. Pinnow at Abstract, 2:14-26, 4:26-33, Fig.1. In addition. the fact that YAG was used in the prior art to improve and modify blue light sources from lasers, high pressure mercury vapor lamps, and low pressure mercury vapor lamps suggests the obviousness of using YAG for blue LEDs. See KSR, 550 U.S. at 417 ("[I]f 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 that person's skill."). A POSITA would have been aware, and would have considered, prior work published in the field of phosphors used with other light sources like Pinnow. A POSITA would not have ignored Pinnow simply because it related primarily to a laser, and not an LED. He or she would have understood that the fundamental principles discussed in Pinnow – that a YAG phosphor will emit a yellow light when excited by a blue light – are as applicable to a LED as they are to a laser. Pinnow's teachings are a fundamental aspect of optics, and would have been considered as being in the same field of endeavor as the '092 patent. ***Second***, Pinnow's relevance to the field of the '092 patent has already been considered by the Federal Circuit in In re Cree, 828 F.3d 694 (Fed. Cir. 2016). In that case, the Federal Circuit affirmed

	the unpatentability of Baretz, based, in part, to another patent to Pinnow, U.S. Patent No. 3,691,482. Like Pinnow here, the '482 patent disclosed a display system that "creates black and white images using a combination of a blue laser and appropriate phosphors." *In re Cree*, 828 F.3d at 697. The Federal Circuit affirmed the Board's rulings that a POSITA "is not going to fail to appreciate the other teachings in Pinnow simply because a laser is used as the primary light source, because the phosphors cannot tell from what light source a wavelength of light comes." *Id*. at 699. The Federal Circuit expressly found that the Board's conclusion that Pinnow would "work with blue light of any source . . . was an entirely reasonable conclusion to draw from Pinnow." *Id*.,700. The Federal Circuit also found that "the examiner pointed to ample evidence that Pinnow's teachings are applicable to LEDs," and specifically, that "the phosphors' ability to convert the UV-to-blue light is predicated only on whether or not it can absorb a given wavelength of light, not on which kind of light source a particular wavelength of light is emitted, laser, LED, or otherwise, as a [POSITA] would readily appreciate." *Id*.,701. Put more succinctly, "in other words, a phosphor does not care how an incident photon of light at a particular wavelength is generated." Id. ***Third***, the evidence shows that there are very few phosphors that absorb blue, emit yellow and operate the harsh conditions, which, as Baretz acknowledges, are present in an LED and may lead to degradation of certain phosphors. A POSITA would have been aware of a discrete number of well-known phosphors that were capable of surviving in such harsh environments. Nichia's own expert confirmed this fact in the Everlight litigation when he conceded that "stringent requirements required for the phosphor to be used with a blue LED strongly limited the choice of potential phosphors." The YAG phosphor disclosed Pinnow is one such phosphor. Not only was YAG one of only a few phosphors that met the above requirements, it was widely known to be the single best phosphor in such circumstances—no other phosphor at that time had YAG's properties, and even today, it is the standard by which new phosphors are gauged. A POSITA would have understood that YAG was one of the few phosphors that could overcome the deterioration problems relevant to Baretz. Thus, the YAG phosphor disclosed in Pinnow would have been one of a "finite number of

	identified, predictable solutions" and a POSITA would have had "good reason to pursue the known options within his or her technical grasp." *KSR v. Teleflex*, 550 U.S. 398, 420 (2007). ***Fourth***, there is no teaching away of the proposed combination because both references address the same issue – namely down conversion of a blue light source to make white light. Both references relate to using phosphors to change the color of light emitted from a monochromatic light source to create white light. Both references are in the same field, aimed at the same problems, have similar design incentives, and use similar techniques to satisfy that goal. Rather than teaching away, as described here and above, the references' express teachings towards the same problem would motivate one in the art to combine their teachings. ***Fifth***, it would have been a predictable combination to combine the blue light LED of Baretz with the YAG phosphor disclosed in Pinnow. The emission spectrum of Baretz's "gallium nitride based LED[,] which exhibits blue light emission with an emission maximum at approximately 450nm with a FWHM of approximately 65nm," almost completely overlaps with the excitation spectrum of Pinnow's YAG:Ce, and falls in between the cadmium ion laser line and the argon ion laser line that Pinnow teaches is suitable for use with YAG:Ce. Like Baretz, Pinnow further teaches that the yellow light emitted by the YAG:Ce phosphor mixes with the blue light from the blue light source to make white light. While Baretz discloses examples of phosphors that may be used to make the white light LED, Baretz also discloses "suitable materials" for the down-converting material "is not specifically limited, and suitable amount(s) of suitable material(s) for such purpose can be readily determined without undue experimentation." Baretz at 10:66-11:7. A person of ordinary skill in the art would have recognized that Pinnow's YAG:Ce is one of these "suitable materials." A POSITA would also have readily understood that combining Baretz's LED with Pinnow's YAG phosphor would have been an obvious design choice to make white light with a single phosphor and single blue light source. Pinnow discloses harsh operating conditions similar to those experience by an LED like the one disclosed in Baretz, and therefore would be capable of meeting Baretz's operating requirements. The combined teachings of Baretz and Pinnow would not have resulted in any inoperable

	combination because it would simply be adding a more specific source of yellow light (YAG:Ce), which mixes with the blue light from the blue light source to make white light as taught by Baretz. ***Sixth***, a person of ordinary skill in the art would have been motivated to use Pinnow's YAG:Ce in Baretz for a white light LED. The conversion of the blue light by the phosphor YAG:Ce is the same for the sources of light of Baretz and Pinnow (i.e. an LED or laser). Indeed, Baretz identifies both blue LEDs and blue lasers as solid state devices suitable for "generating the primary radiation which subsequently is down converted to a longer wavelength radiation." Baretz at 7:45-54, 12:25-38. Moreover, Pinnow discloses that the emission spectrum for the YAG:Ce phosphor is "quite broad." Pinnow at 3:3-8. Baretz discloses that a broad emission spectrum, such as the emission spectrum of Pinnow's YAG:Ce, is a "significant advantage" for generating white light because the "relatively broad emission bandwidth … offers the maximum overlap of photon wavelengths to most readily generate a white illumination. Baretz at 8:44-47. A person of ordinary skill in the art would have also recognized that Baretz's blue LED chip, with an emission maximum at 450nm, is a good match for Pinnow's YAG:Ce because it coincides with Pinnow's YAG:Ce excitation spectrum at a relative intensity of greater than 80, as compared to the relative intensity of the argon and cadmium laser disclosed in Pinnow. *See* Baretz at 9:10-18. A person of ordinary skill in the art would have also be motivated to use Pinnow's YAG:Ce phosphor in Baretz to make a white light LED because of the well-known advantages of YAG:CE in lighting and display applications. *See*, *e.g.*, Van Uitert at 150-151, Hoffman at 91, and Robertson at 471-72. For example, Van Uitert explains that YAG:Ce's "quantum efficiency of approximately 70%" "make YAG:Ce very attractive for display screen applications," which Baretz discloses is a desired application for white light LEDs. Additionally, YAG:Ce was well known to be able to withstand harsh operating conditions and can withstand temperatures up to 300ºC. This characteristic would have made YAG:Ce an appropriate phosphor for the applications disclosed in Baretz, which recognized that degradation of phosphor was a concern. Baretz at 5:2-8, 9:65-66. Furthermore, in reexamination No. 90/010,940, the PTAB

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

WHAT WILL YOU BUILD? | **sales@docketalarm.com** | **1-866-77-FASTCASE**

fastcase® Smarter legal research.