1 2 3 4 5 6 7 8 9 10 11 12 13	DOUGLAS E. LUMISH (Bar No. 183863) doug.lumish@lw.com RICHARD G. FRENKEL (Bar No. 204133) rick.frenkel@lw.com NICHOLAS YU (Bar No. 298768) nicholas.yu@lw.com LATHAM & WATKINS LLP 140 Scott Drive Menlo Park, California 94025 Telephone: +1.650.328.4600 Facsimile: +1.650.463.2600  GREGORY K. SOBOLSKI (Bar No. 267428) gregory.sobolski@lw.com LATHAM & WATKINS LLP 505 Montgomery St. #2000 San Francisco, California 94111 Telephone: +1.415.391.0600 Facsimile: +1.415.395.8095  Attorneys for Plaintiffs NANOSYS, INC. and MASSACHUSETTS INSTITUTE OF TECHNOLOGY	JAMES L. DAY (Bar No. 197158) jday@fbm.com WINSTON LIAW (Bar No. 273899) wliaw@fbm.com FARELLA BRAUN + MARTEL LLP 235 Montgomery Street, 17th Floor San Francisco, California 94104 Telephone: +1.415.954.4400 Facsimile: +1.415.954.4480  Attorneys for Plaintiff THE REGENTS OF THE UNIVERSITY OF CALIFOR NIA		
14	UNITED STATES DISTRICT COURT			
15	NORTHERN DISTRICT OF CALIFORNIA			
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17 18 19 20 21 22 23 24 25 26 27	NANOSYS, INC., THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, and MASSACHUSETTS INSTITUTE OF TECHNOLOGY,  Plaintiffs,  v.  QD VISION, INC.,  Defendant.	CASE NO COMPLAINT FOR PATENT INFRINGEMENT AND INJUNCTIVE RELIEF  DEMAND FOR JURY TRIAL		
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Plaintiffs Nanosys, Inc. ("Nanosys"), The Regents of the University of California ("UC"), and Massachusetts Institute of Technology ("MIT") (collectively, "Plaintiffs"), for their Complaint against Defendant QD Vision, Inc. ("QDV"), demand a jury trial and allege as follows:

### **PARTIES**

- 1. Plaintiff Nanosys is a company duly organized and existing under the laws of Delaware, having its principal place of business at 233 S. Hillview Drive, Milpitas, CA 95035.
- 2. Plaintiff UC is a public entity operating a world-renowned educational system located in and existing under the laws of the State of California, and headquartered in Oakland, California.
- 3. Plaintiff MIT is a world-renowned non-profit research and educational institution located at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139.
- 4. On information and belief, Defendant QDV is a company duly organized and existing under the laws of Delaware, having its principal place of business at 29 Hartwell Avenue, Lexington, MA 02421.

### **BACKGROUND**

### Nanosys Is a Pioneer in the Development of Quantum Dot Technology

- 5. Founded in 2001 to commercialize technology Nanosys's founders developed at MIT, Nanosys is a leading innovator in the development of quantum dots, a state of the art nanocrystal semiconductor technology used in ultra-high definition displays being commercialized by many of the world's leading display companies.
- 6. Nanosys's quantum dots are semiconductors that are approximately 10,000 times narrower than a human hair. Due to their unique properties, quantum dots are capable of converting incoming light into wavelengths that correspond to nearly any color visible to the human eye with remarkable efficiency. Quantum dots in turn have the capability to display images with greater brightness and a fuller color palette than ever before. Indeed, various leaders in the display industry have recognized the advantages of Nanosys's proprietary technology in the field of

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photoluminescence. For instance, Nanosys has partnered with leading display manufacturers in creating ultra-high-definition televisions, tablets, and other mobile devices.

- 7. As part of its core business, Nanosys produces Quantum Dot Concentrate<sup>TM</sup> material, and works with its manufacturing partners, including 3M, to make Quantum Dot Enhancement Film ("QDEF®"), an engineered sheet containing Nanosys's quantum dots that can replace existing films in liquid crystal display ("LCD") backlights. QDEF® sheets enable deep color and high efficiency by providing displays with an ideal light source. Displays containing Nanosys quantum dot technology are brighter and use less energy than other display technologies such as organic light-emitting diodes ("OLED").
- 8. Nanosys's Milpitas headquarters include a state-of-the-art 60,000 square foot fa-There, Nanosys has significant manufacturing and scaling capabilities to support its commercial operations, and also performs research and development for next-generation products.

### Nanosys Licenses Intellectual Property from MIT and UC

- 9. Recognizing the potential of quantum dot technology early on, Nanosys invested millions of dollars in developing a significant patent portfolio. As part of that effort, Nanosys partnered with leading academic institutions, including MIT and the Lawrence Berkeley National Laboratory (which is a U.S. Department of Energy National Laboratory managed and operated by UC). As a result of those partnerships, Nanosys obtained exclusive licenses to numerous patents, including those at issue in this Complaint, which cover various aspects of quantum dot technology.
- 10. Though the patents at issue in this Complaint were first filed in the late 1990s, the technology was not yet at that time commercially viable. Nanosys invested tens of millions of dollars into further research and worked diligently for over a decade to transform its technology into commercially viable products that are now market leading.

### QD Vision

On information and belief, QDV initially had a vision for the future of nanocrystal 11. technology that was different from the photoluminescent technology pioneered by Nanosys. In

particular, on information and belief, QDV pursued the development of devices using nanocrystals that convert electricity directly into light, also known as electroluminescence. These types of electrically stimulated devices differ from the photoluminescent devices being commercialized by Nanosys, in that the source of energy is electricity, not light.

- 12. On information and belief, QDV was not successful in developing a viable commercial product based on quantum dots using electroluminescence. On information and belief, in or around 2008, QDV's investors raised concerns about QDV's direction and potential for profitability. On information and belief, QDV's investors suggested that the company focus on more proven technologies, such as quantum dots based on photoluminescence.
- 13. On information and belief, QDV was able to quickly switch to developing quantum dot display technology based on Nanosys's exclusively licensed patents. On information and belief, QDV availed itself of detailed knowledge of Nanosys's exclusively licensed patents to rapidly advance its progress.
- 14. On information and belief, and to the extent QDV was not already aware of Nanosys's patents, QDV also became aware of Nanosys's patents, including the ones at issue in this Complaint, through discussions with Nanosys in or after 2009.
- 15. Nanosys's practice has been to mark its commercial products with relevant patent numbers, including patents at issue in this Complaint. This practice began with the introduction of Nanosys's early products in 2007, and continued with the introduction of Nanosys's QDEF® product in 2013.

### QD Vision Infringes Nanosys's Exclusive Patent Rights

16. Nanosys partnered with LG Innotek beginning in 2009 to create a QuantumRail® product for small LCDs. Nanosys actively marketed its QuantumRail® product in 2010, including issuing press releases and making trade show presentations about Nanosys's QuantumRail® component product. On information and belief, QDV was aware of Nanosys's QuantumRail® component product. Nanosys discontinued its QuantumRail® component product in 2013 in favor of its QDEF® sheets, which are superior in terms of reliability and performance.

- 17. On information and belief, in April 2013, Sony began selling and/or offering for sale televisions that incorporated quantum dots produced by QDV. After conducting a thorough review, Nanosys's research revealed that QDV's own "quantum rail" component product using photoluminescent quantum dots (called Quantum Light Optic) was of inferior quality and would not pose a commercial threat to Nanosys's business.
- 18. On information and belief, Nanosys's quality concerns regarding QDV's Quantum Light Optic rail-based product were proven accurate as Sony discontinued production and sales of the television incorporating QDV's quantum dot component product in 2014. On information and belief, Sony discontinued the television because of problems with the quality of QDV's quantum dot component product. On information and belief, the inferior quality of QDV's products caused them to have high failure rates and not conform to consumer electronics quality expectations. On information and belief, since 2014, Sony has not sold or produced, and does not currently sell or produce, a television that incorporates QDV's inferior quality quantum dot product.
- 19. During this time, Nanosys continued to successfully develop and market its own high quality quantum dot products. On information and belief, the inferior quality of QDV's quantum dot product caused Sony and the customers that purchased the Sony televisions to form negative opinions about the quality of quantum dots generally. On information and belief, these negative opinions have adversely affected Nanosys's reputation in the marketplace, as it is a producer of quantum dots.
- 20. In late 2015, Nanosys became concerned that QDV was competing with Nanosys by producing, marketing, and selling infringing inferior products that violated Nanosys's exclusive rights. For example, on information and belief, QDV began selling infringing quantum dots under its Color IQ brand that were used in televisions sold by TCL Corporation and Hisense. Nanosys approached QDV to discuss terms that would resolve QDV's infringing activities without litigation. The parties were unable to come to terms and, on information and belief, QDV has not abated its infringing activities.

1	21.	On information and belief, on March 14, 2016, Philips Monitors released a moni-
2	tor that incorp	porates QDV's infringing quantum dots.
3	22.	On information and belief, on March 24, 2016, QDV's Vice President Jim Carlton
4	gave a preser	ntation entitled "The Path to Rec 2020 Displays: Quantum Dots Versus 'frick'n la-
5	sers," at the	Society for Information Display One Day Bay Area Conference in Sunnyvale, CA.
6	23.	On information and belief, QDV will attend and have a booth at the Society for
7	Information I	Display's Display Week 2016 on May 24, 2016 in San Francisco, CA, where it will
8	demonstrate i	ts infringing quantum dot product.
9	24.	QDV's actions have caused and will continue to cause irreparable harm to
10	Nanosys.	
11		NATURE OF THE ACTION
12	25.	This is an action for willful patent infringement under the Patent Laws of the
13	United States	s, 35 U.S.C. §§ 101, et seq., and for such other relief as the Court deems just and
14	proper.	
15		INTRADISTRICT ASSIGNMENT
15 16	26.	INTRADISTRICT ASSIGNMENT  This is an intellectual property action, assigned on a District-wide basis under
	26. Civil Local R	This is an intellectual property action, assigned on a District-wide basis under
16		This is an intellectual property action, assigned on a District-wide basis under
16 17		This is an intellectual property action, assigned on a District-wide basis under ule 3-2(c).
16 17 18	Civil Local R 27.	This is an intellectual property action, assigned on a District-wide basis under rule 3-2(c). <u>JURISDICTION</u>
16 17 18 19	Civil Local R 27.	This is an intellectual property action, assigned on a District-wide basis under tule 3-2(c).  JURISDICTION  This civil action asserts claims arising under the Patent Laws of the United States,
16 17 18 19 20	Civil Local R  27.  35 U.S.C. §§	This is an intellectual property action, assigned on a District-wide basis under tule 3-2(c).  JURISDICTION  This civil action asserts claims arising under the Patent Laws of the United States,
16 17 18 19 20 21	27. 35 U.S.C. §§ 1338(a). 28.	This is an intellectual property action, assigned on a District-wide basis under rule 3-2(c).  JURISDICTION  This civil action asserts claims arising under the Patent Laws of the United States, 1, et seq. The Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and
16 17 18 19 20 21 22	27. 35 U.S.C. §§ 1338(a). 28. mation and b	This is an intellectual property action, assigned on a District-wide basis under rule 3-2(c).  JURISDICTION  This civil action asserts claims arising under the Patent Laws of the United States, 1, et seq. The Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and The Court has personal jurisdiction over the Defendant by virtue of, on infor-
16 17 18 19 20 21 22 23	27. 35 U.S.C. §§ 1338(a). 28. mation and b and/or comm	This is an intellectual property action, assigned on a District-wide basis under rule 3-2(c).  JURISDICTION  This civil action asserts claims arising under the Patent Laws of the United States, 1, et seq. The Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and The Court has personal jurisdiction over the Defendant by virtue of, on inforelief, its transacting and doing business in the State of California and this District
16 17 18 19 20 21 22 23 24	27. 35 U.S.C. §§ 1338(a). 28. mation and b and/or comm formation and	This is an intellectual property action, assigned on a District-wide basis under rule 3-2(c).  **JURISDICTION**  This civil action asserts claims arising under the Patent Laws of the United States, 1, et seq. The Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and The Court has personal jurisdiction over the Defendant by virtue of, on inforelief, its transacting and doing business in the State of California and this District itting acts of patent infringement in the State of California and this District. On in-
16 17 18 19 20 21 22 23 24 25	27. 35 U.S.C. §§ 1338(a). 28. mation and b and/or comm formation and State of Calif	This is an intellectual property action, assigned on a District-wide basis under rule 3-2(c).  JURISDICTION  This civil action asserts claims arising under the Patent Laws of the United States, 1, et seq. The Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and The Court has personal jurisdiction over the Defendant by virtue of, on inforelief, its transacting and doing business in the State of California and this District itting acts of patent infringement in the State of California and this District. On indebelief, the Defendant is engaged in substantial and continuous contacts with the

vices into the stream of commerce, including by way of its website, http://www.coloriq.com, with the knowledge that such products and services will be made, imported, sold, offered for sale, and/or used in the State of California and this District. On information and belief, a substantial part of the events giving rise to Nanosys's claims, including acts of patent infringement, have occurred in the State of California and this District.

- 29. On information and belief, in addition to selling products in this District, since at least 2009, QDV has regularly attended industry conferences in the State of California and this District. On information and belief, from 2009 to present, QDV attended at least sixteen separate industry conferences in the State of California, including twelve in this District. On information and belief, this year, QDV has or will attend at least three more industry conferences in the State of California, among them two in this District, including the Society for Information Display's One Day Bay Area Conference in Sunnyvale on March 24, 2016 and the Society for Information Display's Display Week 2016 conference scheduled for May 2016 in San Francisco. By attending these conferences, QDV has purposefully availed itself of the benefits, privileges, and protections of the State of California. Furthermore, on information and belief, QDV is not a passive attendee at such industry conferences, but instead makes presentations, exhibits infringing products, offers infringing products for sale, and/or actively sells infringing products.
- 30. On information and belief, QDV has formed at least three ongoing partnerships with businesses located in the State of California and this District. On information and belief, these businesses include Solvay, located in Martinez, CA; Sigma Designs, located in Fremont, CA; and LG Display, located in San Jose, CA. By forming these partnerships, QDV has purposefully availed itself of the benefits and privileges of conducting business in the State of California.
- 31. On information and belief, Mustafa Ozgen resides and/or maintains at least partial residency in this District and is QDV's Chief Executive Officer. On information and belief, Jim Carlton resides in this District and is QDV's Vice President of Products. On information and belief, Seth Coe-Sullivan resides in the State of California and is one of QDV's co-founders, the

current Chief Technology Officer Emeritus, and a member of QDV's Board of Directors and Scientific Advisory Board.

- 32. On information and belief, four out of eleven of QDV's investors are located in this District. On information and belief, these investors have invested \$63.4 million dollars of QDV's \$133 million dollars of total investment. By soliciting and accepting these investments, QDV has purposefully availed itself of the benefits and privileges of conducting business in the State of California.
- 33. Venue is proper under 28 U.S.C. §§ 1391(b) and 1400(b) because, on information and belief, at least acts of patent infringement have been committed in this District, because a substantial part of the property at issue in this action is situated in this district, and Defendant is subject to personal jurisdiction in this District. In addition, venue is proper because Nanosys has suffered and is suffering harm in this District.

### COUNT I - INFRINGEMENT OF U.S. PATENT NO. 6,207,229

- 34. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth herein.
- 35. U.S. Patent No. 6,207,229 (the "'229 patent") entitled "Highly luminescent color-selective materials and method of making thereof" was duly and legally issued by the U.S. Patent and Trademark Office to MIT on March 27, 2001. A true and correct copy of the '229 patent is attached hereto as **Exhibit 1.** 
  - 36. Nanosys has an exclusive license to the '229 patent.
  - 37. The '229 patent is valid and enforceable.
- 38. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '229 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States, without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "'229 Patent Infringing Products").

- 39. The '229 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystals that are prepared using a method wherein QDV: (a) introduces a substantially monodisperse core population, wherein each member of the core population comprises a first semiconductor material, and a precursor capable of thermal conversion into a second semiconductor material into a coordinating solvent, the monodisperse core population, when irradiated, emits light in a spectral range of no greater than about 60 nm full width half max (FWHM); (b) wherein the coordinating solvent is maintained at a temperature sufficient to convert the precursor into the second semiconductor material yet insufficient to substantially alter the monodispersity of the core population; (c) wherein the second semiconductor material has a band gap greater than the first semiconductor material; and (d) whereby an overcoating of the second semiconductor material is formed on a member of the core population.
- 40. On information and belief, QDV knew or should have known about the '229 patent and its infringement of that patent. On information and belief, QDV would have been aware that the '229 Patent Infringing Products infringe the patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '229 patent and its infringement of that patent.
- 41. The infringement has caused and is continuing to cause damage and irreparable injury to Nanosys. Nanosys will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court as a remedy at law alone would be inadequate.
- 42. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 43. On information and belief, QDV has infringed the '229 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '229 patent. On information and belief, the infringement of the '229 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

## COUNT II - INFRINGEMENT OF U.S. PATENT NO. 6,322,901

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- 44. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth here-
- 45. U.S. Patent No. 6,322,901 (the "'901 patent") entitled "Highly luminescent color-selective nano-crystalline materials" was duly and legally issued by the U.S. Patent and Trademark Office to MIT on November 27, 2001. A true and correct copy of the '901 patent is attached hereto as **Exhibit 2.** 
  - 46. Nanosys has an exclusive license to the '901 patent.
  - 47. The '901 patent is valid and enforceable.
- 48. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '901 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "'901 Patent Infringing Products").
- 49. The '901 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystals that comprise a core comprising a first semiconductor material, said core being a member of a monodisperse particle population; and an overcoating uniformly deposited on the core comprising a second semiconductor material, wherein the first semiconductor material and the second semiconductor material are the same or different, and wherein the monodisperse particle population is characterized in that when irradiated the population emits light in a spectral range of no greater than about 60 nm full width at half max (FWHM).
- 50. On information and belief, QDV knew or should have known about the '901 patent and its infringement of that patent. On information and belief, QDV would have been aware that the '901 Patent Infringing Products infringe the patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '901 patent and its infringement of that patent.

- 51. The infringement has caused and is continuing to cause damage and irreparable injury to Nanosys. Nanosys will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court as a remedy at law alone would be inadequate.
- 52. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 53. On information and belief, QDV has infringed the '901 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '901 patent. On information and belief, the infringement of the '901 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT III - INFRINGEMENT OF U.S. PATENT NO. 8,481,112

- 54. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth here-
- 55. U.S. Patent No. 8,481,112 (the "'112 patent") entitled "Highly luminescent color-selective nano-crystalline materials" was duly and legally issued by the U.S. Patent and Trademark Office to MIT on July 9, 2013. A true and correct copy of the '112 patent is attached hereto as **Exhibit 3.** 
  - 56. Nanosys has an exclusive license to the '112 patent.
  - 57. The '112 patent is valid and enforceable.
- 58. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '112 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "'112 Patent Infringing Products").

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- 59. The '112 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystals that are prepared using a method wherein QDV provides a substantially monodisperse first population of semiconductor nanocrystal cores made from a first semiconductor material and a precursor capable of thermal conversion into a second semiconductor material different from the first semiconductor material in a coordinating solvent; and maintains the coordinating solvent at a temperature sufficient to convert the precursor into the second semiconductor material as an overcoating on the first semiconductor material yet otherwise insufficient to substantially alter the monodisperse first population of semiconductor nanocrystal cores; wherein the plurality of coated nanocrystals emit light in a spectral range of no greater than about 40 nm full width at half max (FWHM) when irradiated.
- 60. On information and belief, QDV knew or should have known about the '112 patent and its infringement of that patent. On information and belief, QDV would have been aware that the '112 Patent Infringing Products infringe the patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '112 patent and its infringement of that patent.
- 61. The infringement has caused and is continuing to cause damage and irreparable injury to Nanosys. Nanosys will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court as a remedy at law alone would be inadequate.
- 62. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 63. On information and belief, QDV has infringed the '112 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '112 patent. On information and belief, the infringement of the '112 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

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**COUNT IV - INFRINGEMENT OF U.S. PATENT NO. 8,481,113** 

64. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth here-

- 65. U.S. Patent No. 8,481,113 (the "'113 patent") entitled "Highly luminescent color-selective nano-crystalline materials" was duly and legally issued by the U.S. Patent and Trademark Office to MIT on July 9, 2013. A true and correct copy of the '113 patent is attached hereto as **Exhibit 4.** 
  - 66. Nanosys has an exclusive license to the '113 patent.
  - 67. The '113 patent is valid and enforceable.
- 68. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '113 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "'113 Patent Infringing Products").
- 69. The '113 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystals that comprise a plurality of nanocrystal particles, wherein each particle includes a core including a first semiconductor material and an overcoating including a second semiconductor material deposited on the core; wherein the first semiconductor material and the second semiconductor material are different; wherein the monodisperse population emits light in a spectral range of no greater than about 37 nm full width at half max (FWHM); and wherein the monodisperse population exhibits photoluminescence having a quantum yield of greater than 30%.
- 70. On information and belief, QDV knew or should have known about the '113 patent and its infringement of that patent. On information and belief, QDV would have been aware that the '113 Patent Infringing Products infringe the patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '113 patent and its infringement of that patent.

- 71. The infringement has caused and is continuing to cause damage and irreparable injury to Nanosys. Nanosys will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court as a remedy at law alone would be inadequate.
- 72. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 73. On information and belief, QDV has infringed the '113 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '113 patent. On information and belief, the infringement of the '113 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT V - INFRINGEMENT OF U.S. PATENT NO. 6,576,291

- 74. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth herein.
- 75. U.S. Patent No. 6,576,291 (the "'291 patent") entitled "Preparation of nanocrystallites" was duly and legally issued by the U.S. Patent and Trademark Office to MIT on June 10, 2003. A true and correct copy of the '291 patent is attached hereto as **Exhibit 5.** 
  - 76. Nanosys has an exclusive license to the '291 patent.
  - 77. The '291 patent is valid and enforceable.
- 78. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '291 patent, including but not limited to claim 23, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "'291 Patent Infringing Products").
- 79. The '291 Patent Infringing Products infringe at least claim 23 because they at least contain nanocrystallites that QDV manufactures by contacting a metal, M, or an M-

containing salt, and a reducing agent to form an M-containing precursor, M being Cd, Zn, Mg, Hg, Al, Ga, In, or Tl; contacting the M-containing precursor with an X donor, X being O, S, Se, Te, N, P, As, or Sb to form a mixture; and heating the mixture to form the nanocrystallite.

- 80. On information and belief, QDV knew or should have known about the '291 patent and its infringement of that patent. On information and belief, QDV would have been aware that the '291 Patent Infringing Products infringe the patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '291 patent and its infringement of that patent.
- 81. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 82. On information and belief, QDV has infringed the '291 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '291 patent. On information and belief, the infringement of the '291 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### **COUNT VI - INFRINGEMENT OF U.S. PATENT NO. 6,821,337**

- 83. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth herein.
- 84. U.S. Patent No. 6,821,337 (the "'337 patent") entitled "Preparation of nanocrystallites" was duly and legally issued by the U.S. Patent and Trademark Office to MIT on November 23, 2004. A true and correct copy of the '337 patent is attached hereto as **Exhibit 6.** 
  - 85. Nanosys has an exclusive license to the '337 patent.
  - 86. The '337 patent is valid and enforceable.
- 87. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '337 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell,

and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "337 Patent Infringing Products").

- 88. The '337 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystals that are prepared using a method wherein QDV combines a metal-containing non-organometallic compound, a coordinating solvent, and a chalcogen source to form a nanocrystal.
- 89. On information and belief, QDV knew or should have known about the '337 patent and its infringement of that patent. On information and belief, QDV would have been aware that the '337 Patent Infringing Products infringe the patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '337 patent and its infringement of that patent.
- 90. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 91. On information and belief, QDV has infringed the '337 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '337 patent. On information and belief, the infringement of the '337 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT VII - INFRINGEMENT OF U.S. PATENT NO. 7,138,098

- 92. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth herein.
- 93. U.S. Patent No. 7,138,098 (the "'098 patent") entitled "Preparation of nanocrystallites" was duly and legally issued by the U.S. Patent and Trademark Office to MIT on November 21, 2006. A true and correct copy of the '098 patent is attached hereto as **Exhibit 7.** 
  - 94. Nanosys has an exclusive license to the '098 patent.

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- 95. The '098 patent is valid and enforceable.
- 96. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '098 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "'098 Patent Infringing Products").
- 97. The '098 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystals that are prepared using a method wherein QDV heats a mixture including a coordinating solvent, an amine or a reducing agent, a chalcogen or pnictide source, and a metalcontaining compound to form a nanocrystal, wherein the metal-containing compound is free of metal-carbon bonds.
- 98. On information and belief, QDV knew or should have known about the '098 patent and its infringement of that patent. On information and belief, QDV would have been aware that the '098 Patent Infringing Products infringe the patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '098 patent and its infringement of that patent.
- 99. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 100. On information and belief, QDV has infringed the '098 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '098 patent. On information and belief, The infringement of the '098 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT VIII - INFRINGEMENT OF U.S. PATENT NO. 8,071,359

Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth here-

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102. U.S. Patent No. 8,071,359 (the "'359 patent") entitled "Semiconductor nanocrystal probes for biological applications and process for making and using such probes" was duly and legally issued by the U.S. Patent and Trademark Office to UC on December 6, 2011. A true and correct copy of the '359 patent is attached hereto as **Exhibit 8.** 

- 103. Nanosys has an exclusive license to the '359 patent.
- 104. The '359 patent is valid and enforceable.
- 105. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '359 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "359 Patent Infringing Products").
- 106. The '359 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystal compositions that comprise a semiconductor core comprising a first semiconductor material; a core-overcoating shell comprising a second semiconductor material which is different from the first semiconductor material, wherein the core and core-overcoating shell form a core/shell nanocrystal; and a polymer.
- 107. On information and belief, QDV knew or should have known about the '359 patent and its infringement of that patent. On information and belief, QDV's founders and key employees were, at least, aware of and knowledgeable about developments and advances in the field and patent filings through their activities conducted through industry conferences, research, and development. On information and belief, QDV knew or should have known about the '359 patent through disclosures made during discussions between Nanosys and QDV in 2009, and therefore knew or should have known about its infringement of that patent. At least as of the time

QDV was served with this Complaint, QDV has been fully aware of the '359 patent and its infringement of that patent.

108. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

109. On information and belief, QDV has infringed the '359 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '359 patent. On information and belief, the infringement of the '359 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT IX - INFRINGEMENT OF U.S. PATENT NO. 8,288,152

- 110. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth herein.
- 111. U.S. Patent No. 8,288,152 (the "'152 patent") entitled "Semiconductor nanocrystal probes for biological applications and process for making and using such probes" was duly and legally issued by the U.S. Patent and Trademark Office to UC on October 16, 2012. A true and correct copy of the '152 patent is attached hereto as **Exhibit 9.** 
  - 112. Nanosys has an exclusive license to the '152 patent.
  - 113. The '152 patent is valid and enforceable.
- 114. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '152 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name Color IQ (the "'152 Patent Infringing Products").
- 115. The '152 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystal compositions that comprise (a) a core comprising a first semiconductor ma-

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terial; (b) a core-overcoating shell comprising a second semiconductor material, wherein the core and the core-overcoating shell form a core/shell nanocrystal; and (c) an encapsulating net surrounding the core/shell nanocrystal.

116. On information and belief, QDV knew or should have known about the '152 patent and its infringement of that patent. On information and belief, QDV's founders and key employees were, at least, aware of and knowledgeable about developments and advances in the field and patent filings through their activities conducted through industry conferences, research, and development. On information and belief, QDV knew or should have known about the '152 patent through disclosures made during discussions between Nanosys and QDV in 2009, and therefore knew or should have known about its infringement of that patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '152 patent and its infringement of that patent.

117. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

118. On information and belief, QDV has infringed the '152 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '152 patent. On information and belief, the infringement of the '152 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT X - INFRINGEMENT OF U.S. PATENT NO. 8,288,153

- 119. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth herein.
- 120. U.S. Patent No. 8,288,153 (the "153 patent") entitled "Semiconductor nanocrystal probes for biological applications and process for making and using such probes" was duly and legally issued by the U.S. Patent and Trademark Office to UC on October 16, 2012. A true and correct copy of the '153 patent is attached hereto as **Exhibit 10.**

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- 121. Nanosys has an exclusive license to the '153 patent.
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- 122. The '153 patent is valid and enforceable.

Color IQ (the "153 Patent Infringing Products").

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- 123. On information and belief, QDV has infringed, and continues to infringe, literally and/or through the doctrine of equivalents, one or more claims of the '153 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing within the United States without authority, certain luminescent nanocrystals, which, on information and belief, include a product marketed by QDV under the trade name
- 124. The '153 Patent Infringing Products infringe at least claim 1 because they at least contain nanocrystal compositions that comprise a semiconductor core comprising a first semiconductor material selected from the group consisting of a II-VI semiconductor and a III-V semiconductor; a core-overcoating shell comprising a second semiconductor material which is different from the first semiconductor material the second semiconductor material being selected from the group consisting of MgS, MgSe, MgTe, CaS, CaSe, CaTe, SrS, SrSe, SrTe, BaS, BaSe, BaTe, ZnS, ZnSe, ZnTe, CdS, CdSe, CdTe, HgS, HgSe, and HgTe, and wherein the core and the core-overcoating shell form a core/shell nanocrystal; and a polymer.
- 125. On information and belief, QDV knew or should have known about the '153 patent and its infringement of that patent. On information and belief, QDV's founders and key employees were, at least, aware of and knowledgeable about developments and advances in the field and patent filings through their activities conducted through industry conferences, research, and development. On information and belief, QDV knew or should have known about the '153 patent through disclosures made during discussions between Nanosys and QDV in 2009, and therefore knew or should have known about its infringement of that patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '153 patent and its infringement of that patent.
- Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

127. On information and belief, QDV has infringed the '153 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '153 patent. On information and belief, the infringement of the '153 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT XI - INFRINGEMENT OF U.S. PATENT NO. 8,648,524

- 128. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth here-
- 129. U.S. Patent No. 8,648,524 (the "'524 patent") entitled "Electronic displays using optically pumped luminescent semiconductor nanocrystals" was duly and legally issued by the U.S. Patent and Trademark Office to UC on February 11, 2014. A true and correct copy of the '524 patent is attached hereto as **Exhibit 11.** 
  - 130. Nanosys has an exclusive license to the '524 patent.
  - 131. The '524 patent is valid and enforceable.
- 132. On information and belief, QDV knew or should have known about the '524 patent and its infringement of that patent. On information and belief, QDV's founders and key employees were, at least, aware of and knowledgeable about developments and advances in the field and patent filings through their activities conducted through industry conferences, research, and development. On information and belief, QDV knew or should have known about the '524 patent through disclosures made during discussions between Nanosys and QDV in 2009, and therefore knew or should have known about its infringement of that patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '524 patent.
- 133. On information and belief, QDV has contributed to and/or induced infringement, and continues to contribute to and/or induce infringement of, at least claim 1 of the '524 patent, pursuant to 35 U.S.C. §§ 271(b) and (c), at least by providing encouragement, instructions, protocols, and written guidance to its customers about how to incorporate a quantum dot product

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marketed by QDV under the trade name Color IQ (the "524 Infringing Component") into certain color display apparatuses ("the '524 Infringing Devices"), which directly infringe at least claim 1 of the '524 patent.

- On information and belief, QDV provides the '524 Infringing Component to its 134. customers with the knowledge and specific intent that they be incorporated into the '524 Infringing Devices. On information and belief, QDV knows and specifically intends that the '524 Infringing Devices directly infringe the '524 patent. On information and belief, QDV advertises the benefits of the '524 Infringing Component and promotes the import and use of the '524 Infringing Devices through accompanying documentation, marketing, distribution, and sales activities, some of which are documented on QDV's website at http://www.coloriq.com/. On information and belief, the '524 Infringing Component is especially made or especially adapted for infringing use, and there are no substantially non-infringing uses of the '524 Infringing Component.
- 135. On information and belief, QDV has infringed the '524 patent because it actively contributed to and/or induced, and is actively contributing to and/or inducing, its actual and prospective customers, including but not limited to electronic display companies, to directly infringe the '524 patent.
- 136. On information and belief, the '524 Infringing Devices include at least the Sony XBR-55X900A television, the Philips Monitors 27" 276E6ADSS monitor, the Hisense 55" ULED K7100 television, and the TCL H9700 television.
- 137. The '524 Patent Infringing Devices directly infringe, literally and/or through the doctrine of equivalents, at least claim 1 because they comprise color display apparatuses that further comprise at least an optical pumping source comprising one or more blue LED's; a transparent plate; and a layer of quantum dots, said quantum dots emitting light in response to exposure to light from said optical pumping source; wherein said layer of quantum dots is positioned between said optical pumping source and said transparent plate.
- 138. On information and belief, the manufacture, use, sale, offer to sell, and/or importation within the United States without authority of the '524 Patent Infringing Devices has in-

fringed, and continues to infringe, one or more claims of the '524 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a).

- 139. On information and belief, QDV knew of the direct infringement of the '524 patent, or was willfully blind to this fact.
- 140. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 141. On information and belief, QDV has infringed the '524 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '524 patent. On information and belief, the infringement of the '524 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT XII- INFRINGEMENT OF U.S. PATENT NO. 9,063,363

- 142. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth herein.
- 143. U.S. Patent No. 9,063,363 (the "'363 patent") entitled "Electronic displays using optically pumped luminescent semiconductor nanocrystals" was duly and legally issued by the U.S. Patent and Trademark Office to UC on June 23, 2015. A true and correct copy of the '363 patent is attached hereto as **Exhibit 12.** 
  - 144. Nanosys has an exclusive license to the '363 patent.
    - 145. The '363 patent is valid and enforceable.
- 146. On information and belief, QDV knew or should have known about the '363 patent and its infringement of that patent. On information and belief, QDV's founders and key employees were, at least, aware of and knowledgeable about developments and advances in the field and patent filings through their activities conducted through industry conferences, research, and development. On information and belief, QDV knew or should have known about the '363 patent through disclosures made during discussions between Nanosys and QDV in 2009, and there-

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fore knew or should have known about its infringement of that patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '363 patent and its infringement of that patent.

147. On information and belief, QDV has contributed to and/or induced infringement, and continues to contribute to and/or induce infringement of, at least claim 1 of the '363 patent, pursuant to 35 U.S.C. §§ 271(b) and (c), at least by providing encouragement, instructions, protocols, and written guidance to its customers about how to incorporate a nanocrystal product marketed by QDV under the trade name Color IQ (the "'363 Infringing Component") into certain color display apparatuses ("the '363 Infringing Devices"), which directly infringe at least claim 1 of the '363 patent.

On information and belief, QDV provides the '363 Infringing Component to its 148. customers with the knowledge and specific intent that they be incorporated into the '363 Infringing Devices. On information and belief, QDV knows and specifically intends that the '363 Infringing Devices directly infringe the '363 patent. On information and belief, QDV advertises the benefits of the '363 Infringing Component and promotes the import and use of the '363 Infringing Devices through accompanying documentation, marketing, distribution, and sales activities, some of which are documented on QDV's website at http://www.coloriq.com/. On information and belief, the '363 Infringing Component is especially made or especially adapted for infringing use, and there are no substantially non-infringing uses of the '363 Infringing Component.

149. On information and belief, QDV has infringed the '363 patent because it actively contributed to and/or induced, and is actively contributing to and/or inducing, its actual and prospective customers, including but not limited to electronic display companies, to directly infringe the '363 patent.

150. On information and belief, the '363 Infringing Devices include at least the Sony XBR-55X900A television, the Philips Monitors 27" 276E6ADSS monitor, the Hisense 55" ULED K7100 television, and the TCL H9700 television.

- 151. The '363 Patent Infringing Devices directly infringe, literally and/or through the doctrine of equivalents, at least claim 1 because they comprise color display apparatuses that further comprise an optical pumping source comprising one or more blue LED's; a transparent plate; and a polymer layer comprising red core/shell nanocrystals and green core/shell nanocrystals, said red core/shell nanocrystals and green core/shell nanocrystals emitting light in response to exposure to light from said optical pumping source; wherein said layer of red core/shell nanocrystals and green core/shell nanocrystals is positioned between said optical pumping source and said transparent plate.
- 152. On information and belief, the manufacture, use, sale, offer to sell, and/or importation within the United States without authority of the '363 Patent Infringing Devices has infringed, and continues to infringe, one or more claims of the '363 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a).
- 153. On information and belief, QDV knew of the direct infringement of the '363 patent, or was willfully blind to this fact.
- 154. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 155. On information and belief, QDV has infringed the '363 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts constitute infringement of the '363 patent. On information and belief, the infringement of the '363 patent has been and continues to be willful, entitling Nanosys to enhanced damages under 35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award of its reasonable attorneys' fees under 35 U.S.C. § 285.

### COUNT XIII- INFRINGEMENT OF U.S. PATENT NO. 9,182,621

- 156. Plaintiffs incorporate and reallege paragraphs 1-33 above as if fully set forth herein.
- 157. U.S. Patent No. 9,182,621 (the "'621 patent") entitled "Electronic displays using optically pumped luminescent semiconductor nanocrystals" was duly and legally issued by the

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U.S. Patent and Trademark Office to UC on November 10, 2015. A true and correct copy of the '621 patent is attached hereto as **Exhibit 13.** 

- 158. Nanosys has an exclusive license to the '621 patent and has all substantial rights to enforce and license the '621 patent in its own name.
  - 159. The '621 patent is valid and enforceable.
- 160. On information and belief, QDV knew or should have known about the '621 patent and its infringement of that patent. On information and belief, QDV's founders and key employees were, at least, aware of and knowledgeable about developments and advances in the field and patent filings through their activities conducted through industry conferences, research, and development. On information and belief, QDV knew or should have known about the '621 patent through disclosures made during discussions between Nanosys and QDV in 2009, and therefore knew or should have known about its infringement of that patent. At least as of the time QDV was served with this Complaint, QDV has been fully aware of the '621 patent.
- 161. On information and belief, QDV has contributed to and/or induced infringement, and continues to contribute to and/or induce infringement of, at least claim 1 of the '621 patent, pursuant to 35 U.S.C. §§ 271(b) and (c), at least by providing encouragement, instructions, protocols, and written guidance to its customers about how to incorporate a quantum dot product marketed by QDV under the trade name Color IQ (the "621 Infringing Component") into certain color display apparatuses ("the '621 Infringing Devices"), which directly infringe at least claim 1 of the '621 patent.
- 162. On information and belief, QDV provides the '621 Infringing Component to its customers with the knowledge and specific intent that they use it to practice the patented method to create the '621 Infringing Devices. On information and belief, QDV knows and specifically intends that using the '621 Infringing Component to practice the patented method to create the '621 Infringing Devices directly infringes the '621 patent. On information and belief, QDV advertises the benefits of the '621 Infringing Component and promotes the import and use of the '621 Infringing Devices through accompanying documentation, marketing, distribution, and sales activities, some of which are documented on QDV's website at http://www.coloriq.com/.

On information and belief, the '621 Infringing Component is especially made or especially adapted for infringing use and there are no substantially non-infringing uses of the '621 Infringing Component.

- 163. On information and belief, QDV has infringed the '621 patent because it actively contributed to and/or induced, and is actively contributing to and/or inducing, its actual and prospective customers, including but not limited to electronic display companies, to directly infringe the '621 patent.
- 164. On information and belief, the '621 Infringing Devices include at least the Sony XBR-55X900A television, the Philips Monitors 27" 276E6ADSS monitor, the Hisense 55" ULED K7100 television, and the TCL H9700 television.
- 165. The '621 Patent Infringing Devices directly infringe, literally and/or through the doctrine of equivalents, at least claim 1 because they comprise at least color display apparatuses that are made by the method of providing an optical pumping source comprising one or more blue LED's; placing a layer of quantum dots over said optical pumping source, said quantum dots emitting light in response to exposure to light from said optical pumping source; and placing a transparent plate over said layer of quantum dots such that said layer of quantum dots is positioned between said optical pumping source and said transparent plate.
- 166. On information and belief, the manufacture, use, sale, offer to sell, and/or importation within the United States without authority of the '621 Patent Infringing Devices has infringed, and continues to infringe, one or more claims of the '621 patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a).
- 167. On information and belief, QDV knew of the direct infringement of the '621 patent, or was willfully blind to this fact.
- 168. Nanosys is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.
- 169. On information and belief, QDV has infringed the '621 patent as alleged above despite having prior knowledge of the patent and its infringement of the patent, and has acted with willful, intentional, and reckless disregard of the objectively high likelihood that its acts

	constitute infringement of the '621 patent. On information and belief, the infringement of the				
	'621 patent h	as been	n and continues to be willful, entitling Nanosys to enhanced damages under		
	35 U.S.C. § 284 and also a finding that this case is exceptional, entitling Nanosys to an award o				
	its reasonable attorneys' fees under 35 U.S.C. § 285.				
	PRAYER FOR RELIEF				
	WHEREFORE, Plaintiffs respectfully request that the Court enter judgment in their favor				
and against QDV on this Complaint as follows:					
	A.	A ju	dgment that QDV has infringed and continues to infringe, contribute to,		
		and/o	or induce the infringement of the '229, '901, '112, '113, '291, '337, '098,		
		'359,	'152, '153, '524, '363, and/or '621 patents under at least 35 U.S.C.		
		§§ 27	71(a), (b), and/or (c), and that such infringement was willful;		
	В.	Prelii	minary and permanent injunctive relief prohibiting QDV and its officers,		
		agent	ts, representatives, assigns, licensees, distributors, employees, customers, re-		
		lated	entities, and all those acting in privity or acting in concert with them, from:		
		1)	infringing, inducing, and/or contributing to the infringement of any of the		
			claims of the '229, '901, '112, '113, '291, '337, '098, '359, '152, '153,		
			'524, '363, and/or '621 patents; and		
		2)	soliciting any new business or new customers using any information or		
			materials derived from infringement of these patents;		
	C.	An a	ward of monetary damages, including both lost profits and a reasonable roy-		
		alty,	to be obtained from any and all of QDV's assets, sufficient to compensate		
		Plain	tiffs for QDV's past, ongoing, and/or future patent infringement that has, is,		
		or ma	ay occur prior to entry of an injunction prohibiting such activity, together		
		with	prejudgment and postjudgment interest, pursuant to at least 35 U.S.C. § 284;		
	D.	An o	rder directing QDV to deliver to Plaintiffs, for destruction at Plaintiffs' op-		
		tion,	all products that infringe, contribute to, and/or induce the infringement of the		
		'229,	'901, '112, '113, '291, '337, '098, '359, '152, '153, '524, '363, and/or '621		

patents.

1	E.	An award of enhanced damages, to be obtained from any and all of QDV's assets,
2		of three times the amount found or assessed for QDV's willful patent infringe-
3		ment, pursuant to 35 U.S.C. § 284, including prejudgment and postjudgment in-
4		terest on such damages;
5	F.	An order finding this case exceptional and awarding Plaintiffs their attorneys'
6		fees, to be obtained from any and all of QDV's assets, pursuant to 35 U.S.C.
7		§ 285, including prejudgment interest on such fees;
8	G.	An accounting and supplemental damages for all damages occurring after the pe-
9		riod for which damages discovery is taken, and after discovery closes, through the
10		Court's decision regarding the imposition of a permanent injunction;
11	H.	An award of Plaintiffs' costs and expenses of this suit as prevailing parties, to be
12		obtained from any and all of QDV's assets; and
13	I.	Any other relief that the Court deems just and proper.
14		DEMAND FOR JURY TRIAL
15	Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiffs hereby demand a trial by ju-	
16	ry on all issue	es so triable.
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1	Dated: April 14, 2016 Respectfully submitted,
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4	By <u>/s/ Douglas E. Lumish</u> Douglas E. Lumish
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17	<u>ATTESTATION</u>
18	Pursuant to Local Rule 5-1(i)(3), I hereby attest that the concurrence in the filing of this
19	document has been obtained from the other signatory, which shall serve in lieu of his signature.
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21	Dated: April 14, 2016  By <u>/s/ Douglas E. Lumish</u> Douglas E. Lumish
22	Douglas El Ballion
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