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Attorneys for Plaintiff,
CAPELLA PHOTONICS, INC.

UNITED STATES DISTRICT COURT
DISTRICT OF MARYLAND

CAPELLA PHOTONICS, INC.,

Plaintiff,

v.

CIENA CORPORATION

Defendant.

Anne Arundel County

Case No.

**COMPLAINT
FOR PATENT INFRINGEMENT**

JURY TRIAL DEMANDED

1 Plaintiff Capella Photonics, Inc. (“Capella”), by and through its counsel, files this
2 complaint for patent infringement and demand for jury trial (“Complaint”) against Ciena
3 Corporation (“Defendant” / “Ciena”). Capella alleges as follows:

4 **PARTIES**

5 1. Capella is a Delaware corporation with an office located at 1100 La Avenida
6 Building A, Mountain View, California 94043.

7 2. On information and belief, Defendant Ciena is a Delaware corporation with a
8 regular, established and principal place of business in this district at 7035 Ridge Road, Hanover,
9 Anne Arundel County, Maryland 21076.

10 **JURISDICTION AND VENUE**

11 3. This is a civil action for patent infringement under the patent laws of the United
12 States, 35 U.S.C. § 1 *et. seq.* This Court has subject matter jurisdiction under 28 U.S.C. §§1331
13 and 1138(a).

14 4. This Court has personal jurisdiction over Ciena in this action because Ciena has
15 committed acts within this district giving rise to this action and has established minimum contacts
16 with this forum such that the exercise of jurisdiction over Ciena would not offend traditional
17 notions of fair play and substantial justice. On information and belief, Ciena, directly and through
18 subsidiaries or intermediaries, has committed and continues to commit acts of infringement in this
19 district by, among other things, making, selling, offering for sale, and/or importing products
20 and/or services that infringe the asserted patents, and also through its own use and testing of
21 products and/or services that infringe the asserted patents.

22 5. Venue is proper in this judicial district pursuant to 28 U.S.C. §§1391(b)-(d) and
23 1400(b). Ciena has committed acts of infringement in this district and has a regular and
24 established place of business in this district.

25 6. This Court has personal jurisdiction over Ciena at least by virtue of Ciena residing
26 in this district and having engaged in substantial and not isolated business activity in this state and
27 also by having engaged in acts of infringement in this state and specifically in this district.

28 7. Ciena is subject to personal jurisdiction by this Court under Maryland law.

FACTUAL BACKGROUND

8. Founded in 2000, Capella is a pioneer of breakthrough optical switching technologies for use in optical transmission networks. Those technologies include Dense Wavelength Division Multiplexing (DWDM) transport platforms that include reconfigurable optical add and drop multiplexers (ROADMs). Capella has designed, developed, produced and sold switching devices for optical transmission networks, including its CR50™ and CR100™ products.

9. As a result of many years of research and development, Capella has been granted an extensive portfolio of patents, including but not limited to those in suit.

I. THE TECHNOLOGY

10. Optical fiber is used by telecommunications companies to transmit telephone signals, Internet communications, and cable television signals. Optical fiber is a fast and efficient medium for conducting data in the form of light. Various wavelengths of light travel along optical fiber at the same time, with each wavelength carrying specific data intended for delivery to a specific location. An optical fiber is able to carry Internet traffic, cellular communications, and digital television transmissions simultaneously by using different wavelengths of light to carry the data.

11. Fiber-optics were first developed in the 1970s. Fiber-optics have revolutionized telecommunications and have played a major role in the development of the Internet. Because of numerous advantages over electrical transmission, including speed and bandwidth, optical fibers have largely replaced copper wire communications in networks around the world.

12. As is generally known, the process of communicating using fiber-optics has involved the following basic steps:

- a) creating the optical signal involving the use of a laser transmitter, usually from an electrical signal from a traditional copper based telephone network;
- b) relaying the optical signal along the fiber;
- c) receiving the optical signal at an optical receiver; and

1 d) converting the optical signal back into an electrical signal.

2 13. Networks using optical fiber span the globe. Networks on a continent or within a
3 country form a grid. Line segments of fiber optic cable intersect at hubs or nodes. At these hubs
4 or nodes, there are DWDM transport platforms. In modern networks, such as those traversing the
5 United States, the DWDM transport platforms are typically modular in nature with optical
6 switching at the individual wavelength level carried out by one or more ROADMs using
7 the pioneering technology invented and patented by Capella. The ROADMs modules may, in turn,
8 be comprised of one or more modules. The modules are sold by defendant and other
9 manufacturers in various configurations, and also individually, with specific instructions and
10 guidance on how to build infringing platforms. The instructions and guidance are set forth in
11 Ciena marketing materials and, on information and belief, are provided directly by Ciena sales
12 representatives and system engineers to customers of the platforms and components.

13 14. DWDM transport platforms and their ROADMs modules are the backbone of
14 advanced fiberoptic networks because they route (or switch) signals traveling along fiber optic
15 cables in the directions they need to go. The switching occurs on the wavelength level, which
16 means that a ROADM can separate all the wavelengths of light entering the device and direct
17 them to go in different directions depending on the platform configuration. Certain wavelengths
18 can be dropped from a fiber altogether and new wavelengths can be added onto fibers. ROADMs
19 can also control flow across fiber optic cables. If traffic along one cable is particularly heavy at
20 certain times, then a ROADM can manage that load by sending traffic along one fiber at certain
21 times and another fiber at other times.

22 15. The development of ROADMs and their subsequent introduction into networks
23 enabled video to be sent over the Internet. Before ROADMs, service providers had to use Optical
24 to Electrical to Optical switches (“OEO switches”), which meant that data carried along optical
25 cables had to be converted into electrical signals to be routed. In addition, OEO switches were
26 very slow, expensive and difficult to house due to their refrigerator-like size. The introduction of
27 ROADMs by service providers into their networks in about 2005 changed this, by allowing video
28 to be transmitted at the speed of light through the ROADM instead of at the speed of electronics

1 which is approximately 1000 times slower. ROADMs are also significantly less expensive than
2 OEO switches and much easier to house based on their compact size.

3 16. As their name suggests, ROADMs are reconfigurable, which means that they can
4 be adjusted to send traffic or wavelengths in different directions at different times.

5 17. To ensure network reliability, ROADMs are subjected to a lengthy approval
6 process before they are deployed. In addition, for most networks, more than one vendor is
7 selected.

8 18. On information and belief, Ciena has offered for sale, sold and/or imported into the
9 United States DWDM transport platforms and modules for optical networks deployed around the
10 world including specifically in this District that infringe the '905 and '906 patents and continues
11 to do so.

12 **II. THE PATENTS IN SUIT**

13 19. Capella is the owner of United States Patent No. 6,879,750 entitled,
14 "Reconfigurable Optical Add-Drop Multiplexers with Servo Control and Dynamic Spectral
15 Power Management Capabilities" (the "'750 patent"). The '750 patent issued April 12, 2005 to
16 Capella and claims priority to applications filed in 2001. The '750 was reissued to Capella on
17 May 17, 2011 as United States Patent No. RE 42,368 (the "'368 patent"). The '368 patent was
18 reissued to Capella on March 17, 2020 as United States Patent No. RE 47,905 (the "'905 patent").
19 A true and correct copy of the '905 Issue Notification is attached hereto as **Exhibit A**.

20 20. One or more claims of the '905 patent is substantially identical to one or more
21 claims of the original '368 patent.

22 21. Preferred embodiments of inventions recited in the '905 patent provide an optical
23 add-drop apparatus comprising a multi-wavelength input port, a wavelength-selective device for
24 spatially separating spectral channels, and an array of beam deflecting elements to reflect the
25 spectral channels to selected ports. The inventions provide many advantages over prior art
26 devices including the capability of routing spectral channels on a channel-by-channel basis and
27 directing any spectral channel into any one of the output ports. Its underlying operation is
28 dynamically reconfigurable, and its underlying architecture is intrinsically scalable to a large

number of channel counts.

22. Capella is the owner of United States Patent No. 6,625,346 entitled, “Reconfigurable Optical Add-Drop Multiplexers with Servo Control and Dynamic Spectral Power Management Capabilities” (the “’346 patent”). The ’346 patent issued September 23, 2003 to Capella and claims priority to applications filed in 2001. The ’346 patent was reissued to Capella on November 14, 2006 as United States Patent No. RE 39,397 (the “’397 patent”). The ’397 was reissued to Capella on September 6, 2011 as United States Patent No. RE 42,678 (the “’678 patent”). The ’678 patent was reissued to Capella on March 17, 2020 as United States Patent No. RE 47,906 (the “’906 patent”). A true and correct copy of the ’906 Issue Notification is attached hereto as **Exhibit B**.

23. One or more claims of the ’906 patent is substantially identical to one or more claims of the original ’678 patent.

24. Preferred embodiments of inventions recited in the ’906 patent provide wavelength-separating-routing apparatus comprising an input port for a multiple wavelength optical signal, a wavelength-separator for separating the multiwavelength optical signal, and an array of channel micromirrors to reflect the spectral channels to selected ports. The inventions provide many advantages over prior art devices including the capability of routing spectral channels on a channel-by-channel basis and directing any spectral channel into any one of the output ports. Its underlying operation is dynamically reconfigurable, and its underlying architecture is intrinsically scalable to a large number of channel counts.

25. The ’905 and ’906 patents, and all members of the chain discussed above, are assigned to Capella and Capella holds the right to sue and to recover damages for infringement, including past infringement, of each of the ’905 and ’906 patents (collectively, the “Asserted Patents”).

III. CIENA’S DIRECT INFRINGEMENT

a. Selling, Testing and Related Activities

26. On information and belief, Ciena, directly and through subsidiaries or intermediaries, has committed and continues to commit acts of infringement by, among other

things, making, selling, offering for sale, and/or importing products and/or services that infringe the Asserted Patents, and also through its own use and testing of products and/or services that infringe the Asserted Patents.

IV. CIENA’S INDIRECT INFRINGEMENT

a. Ciena’s Knowledge of the Capella Patents

27. Ciena’s infringement began long ago and has continued willfully.

28. Ciena has been on notice of infringement since at least 2014 when Capella filed suit for infringement of the ’368 and ’678 patents against Ciena in the U.S. District Court for the Southern District of Florida in an action entitled *Capella Photonics, Inc. v. Ciena Corporation* (Case No. 1:14-cv-20530-KMM). That action was consolidated with other actions and subsequently transferred to the Northern District of California, where it was assigned Case No. 14-cv-3351 EMC. In connection with its defense of that action, Ciena has followed and participated in post-grant proceedings for the ’368 and ’678 patents since 2014 and its counsel reported to the court on those post-grant proceedings. Since December 2019, Ciena has been on notice of the PTO’s decision to reissue the ’368 and ’678 patents and the scope of the reissued claims. On information and belief, since February 2020, Ciena has known about the March 17, 2020 issuance of the ’905 and ’906 patents and the scope of the reissued claims.

b. Ciena’s Knowledge of & Specific Intent to Cause Third-Party Actions Infringing the ’905 and ’906 Patents

29. Ciena is a known market leader and one of the dominant players in optical transport platforms.

30. Ciena knows that it provides and markets products to customers that, when used, directly infringe the ’905 and ’906 patents. On information and belief, these products include, without limitation, Ciena’s Common Photonic Layer DWDM transport platform (CPL Platform) and 4200 Advanced Services Platform (4200 Platform) (Collectively “Infringing Products” and/or “Accused Instrumentalities”).

31. Ciena actively encourages the installation and use of its Infringing Products. For example, Ciena explains to customers the individual modules that are available to customers as

well as standard and custom configurations. *See* https://media.ciena.com/documents/6500_Packet_Optical_Platform_PB.pdf where Ciena advertises “One Platform, full flexibility” and describes standard and custom configurations and https://media.ciena.com/documents/4200_Redefining_the_Service_Enabled_Optical_Network_A_4_PB.pdf where Ciena similarly describes standard and custom platform configurations.

32. On information and belief, Ciena has designed, marketed, and sold its Infringing Products to third parties with knowledge and the specific intent to cause the third parties to make, use, offer to sell, or sell in the United States, and/or import into the United States the Infringing Products.

33. On information and belief, Ciena actively encourages its customers and end users to directly infringe the '905 and '906 patents by encouraging them to use the Infringing Products.

34. On information and belief, Ciena promoted and continues to promote the sales of the Accused Instrumentalities, e.g., through Ciena's user manuals, product support, marketing materials, demonstrations, installation support, and training materials to actively induce the users of the accused products to infringe the '905 and '906 patents.

35. At least by the time of trial, Ciena will have known and intended that its continued actions would infringe and actively induce and contribute to the infringement of the claims of the '368 and '678 patents as reissued in the '905 and '906 patents.

COUNT I

(Infringement of the '905 Patent)

36. Paragraphs 1-35 are incorporated by reference as if fully set forth herein.

37. Pursuant to 35 U.S.C. § 282, the '905 patent is presumed valid.

38. On information and belief, Ciena directly infringes the '905 patent by having made, making, using, offering for sale, selling and/or importing into the United States the Infringing Products and Accused Instrumentalities, and continues to do so.

39. On information and belief, the Infringing Products directly infringe at least claim 23 of the '905 patent at least in the exemplary manner described below.

40. The Infringing Products comprise an optical add-drop apparatus comprising: [a]

the fiber collimator input port for an input multi-wavelength optical signal having first spectral channels the fiber collimator one or more other ports for second spectral channels the output port for an output multi-wavelength optical signal; [b] a wavelength-selective device for spatially separating said spectral channels; [c] a spatial array of beam-deflecting elements positioned such that each element receives a corresponding one of said spectral channels, each of said elements being individually and continuously controllable in two dimensions to reflect its corresponding spectral channel to a selected one of said output port or the fiber collimator ports and to control the power of the spectral channel reflected to said output port or the fiber collimator selected port

41. Ciena offers a modular Common Photonic Layer transport platform (CPL). The CPL is a modular Dense Wavelength Division Multiplexing (DWDM) transport platform designed for metro, regional and long-haul networks. Its design is modular. CPL is an optical add-drop apparatus deployed in conjunction with Ciena's optical networking products, including: 6500 Packet-Optical Platform, 5200 Advanced Services Platform, and Optical Metro 3500. The 6500 platform was originally developed by Nortel and acquired by Ciena. Ciena's own 4200 Advanced Services Platform ("4200") also provides a modular add-drop DWDM transport platform. See https://media.ciena.com/documents/Common_Photonic_Layer_DS.pdf and https://media.ciena.com/documents/4200_Redefining_the_Service_Enabled_Optical_Network_A4_PB.pdf

42. CPL uses a flexible ROADM architecture. The ROADM functionality is delivered using Wavelength Selective Switch (WSS), a module of the Common Photonic Layer platform. The WSS enables dynamic "on the fly" optical branching to multiple different optical paths, in addition to facilitating local add/drop of individual wavelengths. The ROADM includes multiple in/out ports with each port comprising a fiber collimator. The fiber collimators provide and serve as input ports for multi-wavelength optical signals and as output and other ports. Wavelength Selective Switch (WSS), amplifier, and Optical Power Monitor (OPM) components are used to create a directionally independent access point. See *Id.*

43. The WSS includes a wavelength selective device for separating the multi-wavelength optical signal from a fiber collimator input port into multiple spectral channels. This

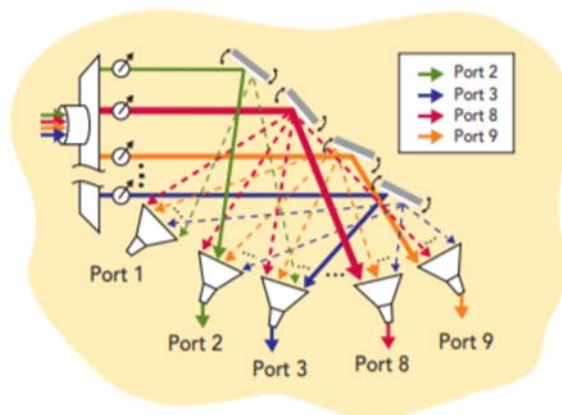
splits the signal into multiple wavelengths for optical branching. The WSS enables dynamic “on the fly” optical branching to multiple different optical paths, in addition to facilitating local add/drop of individual wavelengths. *See Id.*

44. The WSS modules include a spatial array of beam-deflecting elements positioned such that each element receives a corresponding one of said spectral channels, each of said elements being individually and continuously controllable in two dimensions to reflect its corresponding spectral channel to a selected one of said output port or the fiber collimator ports and to control the power of the spectral channel reflected to said output port or the fiber collimator selected port. *See Id.*

45. The WSS channel micromirror array enables dynamic “on the fly” optical branching to multiple different optical paths/output ports, in addition to facilitating local add/drop of individual wavelengths. *See Id.*

46. CPL offers a dynamic and continuous system optimization to ensure optimal performance of the wavelengths transported end to end. Embedded software performs continuous background checks, optical output power optimization, and fault isolation functions to ensure the network runs at an optimal state with the least human intervention and time consumption. *See Id.*

47. The 4200 likewise contains WSS that performs multi-degree optical switching functionality at each ROADM node. Each module contains a WSS capable of dynamically adding, dropping, or expressing any of 44 wavelengths to any output ports, in any combination. Port elements (a), separator (b), and 2-D array of channel micromirrors (c) are illustrated by



1 Ciena (illustration reproduced here). See
2 https://media.ciena.com/documents/4200_ROADM_DS.pdf

3 48. Ciena also directly infringes other claims of the '905 patent.

4 49. On information and belief, use of the Accused Instrumentalities results in
5 infringement of the claims of the '905 patent.

6 50. Ciena's affirmative acts of making, using, selling, offering for sale, and/or
7 importing the Accused Instrumentalities have induced and continue to induce users of the
8 Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary
9 way to infringe the claims of the '905 patent.

10 51. On information and belief, at least as of the filing of this Complaint and likely
11 earlier as set forth above, Ciena knew of the '905 patent, and knew that its activities would lead to
12 infringement of the patent by its customers and end users.

13 52. For example, Ciena sells the Accused Instrumentalities to customers and end users
14 with the intent that such customers and end users will use the Accused Instrumentalities in such a
15 way to constitute direct infringement of at least Claim 23 of the '905 patent as set forth above.

16 53. For example, Ciena explains to customers the individual modules that are available
17 to customers as well as standard and custom configurations. See
18 https://media.ciena.com/documents/6500_Packet_Optical_Platform_PB.pdf where Ciena
19 advertises "One Platform, full flexibility" and describes standard and custom configurations and
20 https://media.ciena.com/documents/4200_Redefining_the_Service_Enabled_Optical_Network_A_4_PB.pdf
21 where Ciena similarly describes standard and custom platform configurations.

22 54. Ciena performed the acts that constitute induced infringement, and would induce
23 actual infringement, with the knowledge of the '905 patent and its claims and with the
24 knowledge, or willful blindness to the probability, that the induced acts would constitute
25 infringement.

26 55. On information and belief, Ciena engaged in such inducement to promote the sales
27 of the Accused Instrumentalities, *e.g.*, through Ciena's user manuals, product support, marketing
28 materials, demonstrations, installation support, and training materials to actively induce the users

1 of the accused products to infringe the '905 patent.

2 56. Accordingly, Ciena has induced and continues to induce end users of the accused
3 products to use the accused products in their ordinary and customary way with compatible
4 systems to make and/or use systems infringing the '905 patent, knowing that such use of the
5 Accused Instrumentalities with compatible systems will result in infringement of the '905 patent.
6 Accordingly, Ciena has been and currently is inducing infringement of the '905 patent in
7 violation of 35 U.S.C. § 271(b).

8 57. Ciena has also contributorily infringed and continues to contribute to infringement
9 of claims of the '905 patent by selling and offering to sell, offering to commercially distribute,
10 commercially distributing, making, and/or importing the Accused Instrumentalities, which are
11 used in practicing the process, or using the systems, claimed by the '905 patent, knowing the
12 Accused Instrumentalities to be especially made or especially adapted for use in an infringement
13 of the '905 patent, and not a staple article or commodity of commerce suitable for substantial
14 noninfringing use.

15 58. On information and belief, at least as of the filing of this Complaint and likely
16 earlier as set forth above, Ciena knew of the '905 patent, and knew that its activities would lead to
17 infringement of the patent by its customers and end users.

18 59. Ciena knows the modules in the Accused Instrumentalities to be especially made
19 or especially adapted for use in infringement of the '905 patent, not a staple article, and not a
20 commodity of commerce suitable for substantial noninfringing use. For example, the ordinary
21 way of using the Accused Instrumentalities infringes the patent claims, and as such, is especially
22 adapted for use in infringement. Accordingly, Ciena has been, and currently is, contributorily
23 infringing the '905 patent, in violation of 35 U.S.C. § 271(c).

24 60. Capella has suffered and will continue to suffer damage as a result of Ciena's
25 infringement of the '905 patent in an amount to be proven at trial.

26 61. Upon information and belief, Ciena did not have and could not have had a
27 reasonable belief that the Accused Instrumentalities did not infringe the Asserted Patents. Any
28 manufacturing, sales, offers for sale, uses, or importation by Defendant of the Infringing Products

reflects a deliberate and knowing decision to infringe the '905 patent or, at the very least, a reckless disregard of Capella's patent rights. By its prior action, Capella made known to Ciena that Ciena's activities in making, using, offering for sale, selling and/or importing into the United States the Infringing Products and Accused Instrumentalities constituted a sufficient risk of infringement that Ciena should have ceased those activities. Under the circumstances, Ciena knew or should have known of the risk of infringement caused by Ciena's activities related to the Accused Instrumentalities. Despite Ciena's knowledge, Ciena intentionally ignored or recklessly disregarded the risk that its activities infringed the Asserted Patents. Ciena's conduct manifested deliberate or reckless disregard of Capella's rights in the Asserted Patents and was malicious, flagrant and in bad faith.

62. Ciena's manufacturing, sales, offers for sale, uses, or importation of the Infringing Products has been willful, and Capella is entitled to treble damages and attorneys' fees and costs incurred in this action, along with prejudgment interest under 35 U.S.C. §§ 284, 285.

63. Ciena will continue to infringe the '905 patent unless and until it is enjoined by this Court.

64. Ciena's acts of infringement have caused and will continue to cause irreparable harm to Capella unless and until Ciena is enjoined by this Court.

COUNT II

(Infringement of the '906 Patent)

65. Paragraphs 1-64 are incorporated by reference as if fully set forth herein.

66. Pursuant to 35 U.S.C. § 282, the '906 patent is presumed valid.

67. On information and belief, Ciena directly infringes the '906 patent by having made, making, using, offering for sale, selling and/or importing into the United States the Infringing Products and Accused Instrumentalities, and continues to do so.

68. On information and belief, the Infringing Products directly infringe at least claim 68 of the '906 patent at least in the exemplary manner described below.

69. The Infringing Products comprise a wavelength-separating-routing apparatus, comprising: a) multiple fiber collimators, providing and serving as an input port for a multi-

1 wavelength optical signal and a plurality of output ports; b) a wavelength-separator, for
 2 separating said multi-wavelength optical signal from said fiber collimator input port into multiple
 3 spectral channels; c) a beam-focuser, for focusing said spectral channels into corresponding
 4 spectral spots; and d) a spatial array of channel micromirrors positioned such that each channel
 5 micromirror receives one of said spectral channels, said channel micromirrors being pivotal about
 6 two axes and being individually and continuously controllable to reflect corresponding received
 7 spectral channels into any selected ones of said fiber collimator output ports and to control the
 8 power of said received spectral channels coupled into said fiber collimator output ports.

9 70. Ciena offers a modular Common Photonic Layer transport platform (CPL). The
 10 CPL is a modular Dense Wavelength Division Multiplexing (DWDM) transport platform
 11 designed for metro, regional and long-haul networks. Its design is modular. CPL is an optical
 12 wavelength-separating-routing apparatus deployed in conjunction with Ciena's optical
 13 networking products, including: 6500 Packet-Optical Platform, 5200 Advanced Services
 14 Platform, and Optical Metro 3500. The 6500 platform was originally developed by Nortel and
 15 acquired by Ciena. Ciena's own 4200 Advanced Services Platform ("4200") also provides a
 16 modular wavelength-separating-routing DWDM transport platform. *See*
 17 https://media.ciena.com/documents/Common_Photonic_Layer_DS.pdf and
 18 [https://media.ciena.com/documents/4200_Redefining_the_Service_Enabled_Optical](https://media.ciena.com/documents/4200_Redefining_the_Service_Enabled_Optical_Network_A4_PB.pdf)
 19 [Network_A4_PB.pdf](https://media.ciena.com/documents/4200_Redefining_the_Service_Enabled_Optical_Network_A4_PB.pdf)

20 71. CPL uses a flexible ROADM architecture. The ROADM functionality is delivered
 21 using Wavelength Selective Switch (WSS), a module of the Common Photonic Layer platform.
 22 The WSS enables dynamic "on the fly" optical branching to multiple different optical paths, in
 23 addition to facilitating local add/drop of individual wavelengths. The ROADM includes multiple
 24 in/out ports with each port comprising a fiber collimator. The fiber collimators provide and serve
 25 as input ports for multi-wavelength optical signals and as output and other ports. Wavelength
 26 Selective Switch (WSS), amplifier, and Optical Power Monitor (OPM) components are used to
 27 create a directionally independent access point. *See Id.*

28 72. The WSS includes a wavelength selective device for separating the multi-

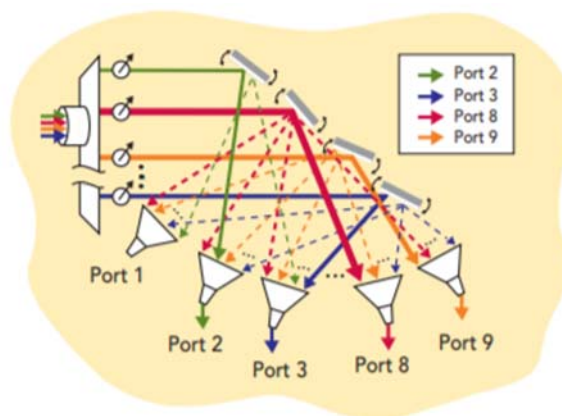
wavelength optical signal from a fiber collimator input port into multiple spectral channels. This splits the signal into multiple wavelengths for optical branching. The WSS enables dynamic “on the fly” optical branching to multiple different optical paths, in addition to facilitating local add/drop of individual wavelengths. *See Id.*

73. The WSS modules include a spatial array of beam-deflecting elements positioned such that each element receives a corresponding one of said spectral channels, each of said elements being individually and continuously controllable in two dimensions to reflect its corresponding spectral channel to a selected one of said output port or the fiber collimator ports and to control the power of the spectral channel reflected to said output port or the fiber collimator selected port. *See Id.*

74. The WSS channel micromirror array enables dynamic “on the fly” optical branching to multiple different optical paths/output ports, in addition to facilitating local add/drop of individual wavelengths. *See Id.*

75. CPL offers a dynamic and continuous system optimization to ensure optimal performance of the wavelengths transported end to end. Embedded software performs continuous background checks, optical output power optimization, and fault isolation functions to ensure the network runs at an optimal state with the least human intervention and time consumption. *See Id.*

76. The 4200 likewise contains WSS that performs multi-degree optical switching functionality at each ROADM node. Each module contains a WSS capable of dynamically adding, dropping, or expressing any of 44 wavelengths to any output ports, in any combination. Port elements (a), separator (b), and 2-D array of channel micromirrors (c) are illustrated by



1 Ciena (illustration reproduced here). See
2 https://media.ciena.com/documents/4200_ROADM_DS.pdf

3 77. Ciena also directly infringes other claims of the '906 patent.

4 78. On information and belief, use of the Accused Instrumentalities results in
5 infringement of the claims of the '906 patent.

6 79. Ciena's affirmative acts of making, using, selling, offering for sale, and/or
7 importing the Accused Instrumentalities have induced and continue to induce users of the
8 Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary
9 way to infringe the claims of the '906 patent.

10 80. On information and belief, at least as of the filing of this Complaint and likely
11 earlier as set forth above, Ciena knew of the '906 patent, and knew that its activities would lead to
12 infringement of the patent by its customers and end users.

13 81. For example, Ciena sells the Accused Instrumentalities to customers and end users
14 with the intent that such customers and end users will use the Accused Instrumentalities in such a
15 way to constitute direct infringement of at least Claim 68 of the '906 patent as set forth above.

16 82. For example, Ciena explains to customers the individual modules that are available
17 to customers as well as standard and custom configurations. See

18 https://media.ciena.com/documents/6500_Packet_Optical_Platform_PB.pdf where Ciena
19 advertises "One Platform, full flexibility" and describes standard and custom configurations and
20 https://media.ciena.com/documents/4200_Redefining_the_Service_Enabled_Optical_Network_A_4_PB.pdf
21 where Ciena similarly describes standard and custom platform configurations.

22 83. Ciena performed the acts that constitute induced infringement, and would induce
23 actual infringement, with the knowledge of the '906 patent and its claims and with the
24 knowledge, or willful blindness to the probability, that the induced acts would constitute
25 infringement.

26 84. On information and belief, Ciena engaged in such inducement to promote the sales
27 of the Accused Instrumentalities, *e.g.*, through Ciena's user manuals, product support, marketing
28 materials, demonstrations, installation support, and training materials to actively induce the users

of the accused products to infringe the '906 patent.

85. Accordingly, Ciena has induced and continues to induce end users of the accused products to use the accused products in their ordinary and customary way with compatible systems to make and/or use systems infringing the '906 patent, knowing that such use of the Accused Instrumentalities with compatible systems will result in infringement of the '906 patent. Accordingly, Ciena has been and currently is inducing infringement of the '906 patent in violation of 35 U.S.C. § 271(b).

86. Ciena has also contributorily infringed and continues to contribute to infringement of claims of the '906 patent by selling and offering to sell, offering to commercially distribute, commercially distributing, making, and/or importing the Accused Instrumentalities, which are used in practicing the process, or using the systems, claimed by the '906 patent, knowing the Accused Instrumentalities to be especially made or especially adapted for use in an infringement of the '906 patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use.

87. On information and belief, at least as of the filing of this Complaint and likely earlier as set forth above, Ciena knew of the '906 patent, and knew that its activities would lead to infringement of the patent by its customers and end users.

88. Ciena knows the modules in the Accused Instrumentalities to be especially made or especially adapted for use in infringement of the '906 patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. For example, the ordinary way of using the Accused Instrumentalities infringes the patent claims, and as such, is especially adapted for use in infringement. Accordingly, Ciena has been, and currently is, contributorily infringing the '906 patent, in violation of 35 U.S.C. § 271(c).

89. Capella has suffered and will continue to suffer damage as a result of Ciena's infringement of the '906 patent in an amount to be proven at trial.

90. Upon information and belief, Ciena did not have and could not have had a reasonable belief that the Accused Instrumentalities did not infringe the Asserted Patents. Any manufacturing, sales, offers for sale, uses, or importation by Defendant of the Infringing Products

reflects a deliberate and knowing decision to infringe the '906 patent or, at the very least, a reckless disregard of Capella's patent rights. By its prior action, Capella made known to Ciena that Ciena's activities in making using, offering for sale, selling and/or importing into the United States the Infringing Products and Accused Instrumentalities constituted a sufficient risk of infringement that Ciena should have ceased those activities. Under the circumstances, Ciena knew or should have known the risk of infringement caused by Ciena's activities related to the Accused Instrumentalities. Despite Ciena's knowledge, Ciena intentionally ignored or recklessly disregarded the risk that its activities infringed the Asserted Patents. Ciena's conduct manifested deliberate or reckless disregard of Capella's rights in the Asserted Patents and was malicious, flagrant and in bad faith.

91. Ciena's manufacturing, sales, offers for sale, uses, or importation of the Infringing Products has been willful, and Capella is entitled to treble damages and attorneys' fees and costs incurred in this action, along with prejudgment interest under 35 U.S.C. §§ 284, 285. Ciena will continue to infringe the '906 patent unless and until it is enjoined by this Court.

92. Ciena's acts of infringement have caused and will continue to cause irreparable harm to Capella unless and until Ciena is enjoined by this Court.

EXCEPTIONAL CASE

93. The allegations contained in paragraphs 1-92 above are repeated and realleged as if fully set forth herein.

94. Based on, among other things, the facts alleged in paragraphs 1-92, including Defendant's intentional use of the Asserted Patents, Defendant's knowledge of its infringement, and Defendant's continued direct and/or indirect infringement, this case is exceptional under 35 U.S.C. § 285, and Capella is entitled to its reasonable costs and expenses of litigation.

REQUEST FOR RELIEF

WHEREFORE, Capella respectfully requests that this Court enter:

- (a) A Judgment in favor of Plaintiff that Ciena has infringed, either literally and/or under the doctrine of equivalents, the '905 patent and the '906 patent;
- (b) An order enjoining Ciena from further acts of infringement of the Asserted Patents;

1 (c) A judgment and order requiring Ciena to pay Plaintiff its damages, costs, expenses,
2 and prejudgment and post-judgment interest for its infringement of the Asserted Patents, as provided
3 under 35 U.S.C. § 284; and, if necessary to compensate Capella for Ciena's infringement
4 adequately, an accounting;

5 (d) Awarding increased damages for Defendant's willful infringement;

6 (e) Declaring that this case is exceptional under 35 U.S.C. § 285 and awarding
7 Capella its reasonable costs and expenses of litigation, including attorneys' and experts' fees; and

8 (f) Awarding Capella such equitable, other, different, and additional relief as this
9 Court deems equitable and proper under the circumstances.

10 **DEMAND FOR JURY TRIAL**

11 Capella hereby demands trial by jury on all claims and issues so triable.
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1 Dated: March 17, 2020

MANATT, PHELPS & PHILLIPS, LLP

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