

## PATENT ASSIGNMENT COVER SHEET

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| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                           |
| <b>NATURE OF CONVEYANCE:</b>  | RELEASE OF SECURITY INTEREST             |
| <b>CONVEYING PARTY DATA</b>   |  |
| <b>Name</b>   | <b>Execution Date</b>                    |
| WELLS FARGO CAPITAL FINANCE, LLC  | 09/12/2013                               |
| <b>RECEIVING PARTY DATA</b>   |  |
| <b>Name:</b>  | OCLARO, INC.                             |
| <b>Street Address:</b>  | 2560 JUNCTION AVENUE                     |
| <b>City:</b>  | SAN JOSE                                 |
| <b>State/Country:</b>   | CALIFORNIA                               |
| <b>Postal Code:</b>   | 95134                                    |
| <b>Name:</b>  | OCLARO TECHNOLOGY LIMITED                |
| <b>Street Address:</b>  | 2560 JUNCTION AVENUE                     |
| <b>City:</b>  | SAN JOSE                                 |
| <b>State/Country:</b>   | CALIFORNIA                               |
| <b>Postal Code:</b>   | 95134                                    |
| <b>PROPERTY NUMBERS Total: 1</b>  |  |
| <b>Property Type</b>  | <b>Number</b>                            |
| Patent Number:  | 6493148                                  |
| <b>CORRESPONDENCE DATA</b>  |  |
| <b>Fax Number:</b>  | (412)945-5933                            |
| <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i> |  |
| <b>Phone:</b>   | 4124718815                               |
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| <b>Address Line 4:</b>  | PITTSBURGH, PENNSYLVANIA 15222           |
| <b>ATTORNEY DOCKET NUMBER:</b>  | 7214-140292                              |
| <b>NAME OF SUBMITTER:</b>   | WILLIAM H. LOGSDON                       |
| <b>SIGNATURE:</b>   | /William H. Logsdon/                     |
| <b>DATE SIGNED:</b>   | 07/03/2014                               |
| <b>Total Attachments: 10</b>  |  |

PATENT

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## RELEASE OF PATENT SECURITY INTEREST

THIS RELEASE OF PATENT SECURITY INTEREST ("Release"), is made and effective as of September 12, 2013 and granted by Wells Fargo Capital Finance, LLC, a Delaware limited liability company (as successor-by-merger to Wells Fargo Capital Finance, Inc.), as collateral agent (the "Agent") for the lenders under the Credit Agreement referred to below (the "Secured Parties"), in favor of Oclaro, Inc., a Delaware corporation (the "Parent") and Oclaro Technology Limited, a company incorporated under the laws of England and Wales (the "Borrower"), and their successors, legal representatives and assignees.

WHEREAS, the Borrower and the Parent entered into that certain Second Amended and Restated Credit Agreement dated as of November 2, 2012 (as amended, restated, supplemented or otherwise modified, the "Credit Agreement"), with the Agent and the lenders party thereto; and

WHEREAS, In connection with the Credit Agreement, the Parent, the Borrower and certain of their affiliates entered into the following:

- (a) the Amended and Restated Security Agreement (Domestic) dated as of November 2, 2012 (as amended, restated, supplemented or otherwise modified, the "Domestic Security Agreement"), made by the Parent and certain of its affiliates in favor of the Agent;
- (b) the Amended and Restated Security Agreement (Foreign) dated as of November 2, 2012 (as amended, restated, supplemented or otherwise modified, the "Foreign Security Agreement"), made by the Borrower and certain of its affiliates in favor of the Agent; and
- (c) the Debenture dated as of May 6, 2013 (as amended, restated, supplemented or otherwise modified and, together with the Domestic Security Agreement and the Foreign Security Agreement, the "Collateral Documents"), made by the Parent, the Borrower and certain of their affiliates in favor of the Agent.

WHEREAS, pursuant the Collateral Documents, the grantors under such Collateral Documents (each a "Grantor") pledged and granted to the Agent, for and on behalf of the Secured Parties, a security interest in and to all of the right, title and interest of such Grantor in, to and under the Patent Collateral (as defined below); and

WHEREAS, the Borrower and the Parent are parties to the Share and Asset Purchase Agreement dated as of September 12, 2013 (in the form provided to the Agent, the "Purchase Agreement"), with II-VI Holdings B.V., a Netherlands corporation ("BV"), pursuant to which the Borrower and the Parent are selling (or causing its affiliates to sell) to the BV or certain of its

affiliates (BV, together with such affiliates, the "Purchaser") certain assets, including but not limited to the Patent Collateral; and

WHEREAS, the Agent desires to enter into this Release in order to accomplish and evidence the release and reassignment of any and all right, title and interest the Agent and the Secured Parties may have in the Patent Collateral pursuant to the Collateral Documents, such that the Purchaser will purchase and take the transfer of such Patent Collateral free and clear of the security interests under the Collateral Documents.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Agent hereby states as follows:

1. Definition of Patent Collateral. The term "Patent Collateral", as used herein, shall mean all of each Grantor's right, title and interest of every kind and nature as of the date hereof in any and all patents, patent applications and other patent rights, and any other governmental authority-issued indicia of invention ownership thereof, listed in Schedule 1 hereto, together with any and all inventions and improvements described and claimed therein (collectively, the "Patent Collateral").
2. Release of Security Interest. Agent, on behalf of itself and the Secured Parties, their successors, legal representatives and assigns, terminates, releases and discharges its security interest in and to the Patent Collateral, and all other right, title, and interest in and to the Patent Collateral and reassigns to the Grantors any and all such right, title and interest that it may have in the Patent Collateral. The Purchaser shall be an intended third-party beneficiary of this Release.
3. Further Assurances. Agent agrees to execute, acknowledge, procure and deliver to Grantors and the Purchaser any and all further documents or instruments and do any and all further acts which the Grantors or the Purchaser (or their respective agents, designees or assignees) reasonably request in order to confirm, effectuate or record this Release and Grantors' and the Purchaser, upon the consummation of the transactions contemplated by the Purchaser Agreement, or their respective assignees', right, title and interest in and to the Patent Collateral.
4. Governing Law. This Release and any claim, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Release and the transactions contemplated hereby and thereby shall be governed by, and construed in accordance with, the laws of the United States and the State of California, without giving effect to any choice or conflict of law provision or rule (whether of the State of California or any other jurisdiction).

**IN WITNESS WHEREOF**, Agent has caused this Release to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

Wells Fargo Capital Finance, LLC,  
as Agent

By:   
Name: Patrick McCormack  
Title: Vice President

[Patent Release (First Lien) Signature Page]

Schedule 1

**PATENTS AND PATENT APPLICATIONS**

| FILE NUMBER      | TITLE  | MATTER<br>TYPE | SUB<br>MATTER<br>TYPE | STATUS | COUNTRY | PRIORITY<br>DATE | DATE FILED   | APPLICATION<br>NUMBER | GRANT DATE   | PATENT NUMBER   | Owner / Assignee      |
|------------------|--|----------------|-----------------------|--------|---------|------------------|--------------|-----------------------|--------------|-----------------|-----------------------|
| OCAR 00250/DE    | Tapered laser arrays   | Utility        | Utility -<br>ORG      | Issued | DE      | Sep 27, 1996     | Sep 18, 1997 | 97319150.9            | Dec 5, 2001  | 69708911.8      | Oclaro Technology Ltd |
| OCAR 00250/FR    | Tapered laser arrays   | Utility        | Utility -<br>ORG      | Issued | FR      | Sep 27, 1996     | Sep 18, 1997 | 97319150.9            | Dec 5, 2001  | 0937322         | Oclaro Technology Ltd |
| OCAR 00250/JP    | Tapered laser arrays   | Utility        | Utility -<br>ORG      | Issued | JP      | Sep 27, 1996     | Sep 18, 1997 | 10-515367             | Dec 15, 2006 | 3891223         | Oclaro Technology Ltd |
| OCAR 00250/US    | Tapered laser arrays   | Utility        | Utility -<br>ORG      | Issued | US      | Sep 27, 1996     | Sep 18, 1997 | 09/269,406            | Jun 19, 2001 | 6,248,556       | Oclaro Technology Ltd |
| OCAR 00418/US    | Pump laser diode with improved<br>wavelength stability                     | Utility        | Utility -<br>ORG      | Issued | US      | Sep 11, 2002     | Sep 11, 2002 | 10/242,497            | Nov 16, 2004 | 6,819,702       | Oclaro Technology Ltd |
| OCAR 00424/DEE   | Stabilized laser source  | Utility        | Utility -<br>EP/PAT   | Issued | DE      | Sep 21, 1999     | Sep 21, 1999 | 99810837.7            | Dec 7, 2005  | 69928801.0      | Oclaro Technology Ltd |
| OCAR 00424/FR    | Stabilized laser source  | Utility        | Utility -<br>EP/PAT   | Issued | FR      | Sep 21, 1999     | Sep 21, 1999 | 99810837.7            | Dec 7, 2005  | 1087479         | Oclaro Technology Ltd |
| OCAR 00424/GBE   | Stabilized laser source  | Utility        | Utility -<br>EP/PAT   | Issued | GB      | Sep 21, 1999     | Sep 21, 1999 | 99810837.7            | Dec 7, 2005  | 1087479         | Oclaro Technology Ltd |
| OCAR 00424/US    | Stabilized laser source  | Utility        | Utility -<br>ORG      | Issued | US      | Sep 21, 1999     | Sep 1, 2000  | 10/049,886            | Aug 3, 2004  | 6,771,687       | Oclaro Technology Ltd |
| OCAR 00426/DEE   | High power semiconductor laser diode                                       | Utility        | Utility -<br>EP/PAT   | Issued | DE      | May 10, 2001     | May 8, 2002  | 2401380.3             | Jul 5, 2006  | 60212902.8      | Oclaro Technology Ltd |
| OCAR 00426/FR    | High power semiconductor laser diode                                       | Utility        | Utility -<br>EP/PAT   | Issued | FR      | May 10, 2001     | May 8, 2002  | 2401380.3             | Jul 5, 2006  | 1261085         | Oclaro Technology Ltd |
| OCAR 00426/GBE   | High power semiconductor laser diode                                       | Utility        | Utility -<br>EP/PAT   | Issued | GB      | May 10, 2001     | May 8, 2002  | 02405380.3            | Jul 5, 2006  | 1261085         | Oclaro Technology Ltd |
| OCAR 00426/JP    | High power semiconductor laser diode                                       | Utility        | Utility -<br>ORG      | Issued | JP      | May 10, 2001     | May 9, 2002  | 2002-134066           | Sep 3, 2010  | 4580612         | Oclaro Technology Ltd |
| OCAR 00426/US    | High power semiconductor laser diode                                       | Utility        | Utility -<br>ORG      | Issued | US      | May 10, 2001     | May 10, 2001 | 09/852,994            | Aug 24, 2004 | 6,782,024       | Oclaro Technology Ltd |
| OCAR 00426/US/CI | High power semiconductor laser diode                                       | Utility        | Utility - CIP         | Issued | US      | May 10, 2001     | Jul 14, 2004 | 30/850,714            | May 15, 2007 | 7,218,659       | Oclaro Technology Ltd |
| OCAR 00427/US/CI | Anti-reflection coatings for semiconductor<br>lasers                       | Utility        | Utility - CIP         | Issued | US      | May 25, 2001     | Dec 12, 2003 | 10/735,375            | Feb 6, 2007  | 7,173,953       | Oclaro Technology Ltd |
| OCAR 00428/CNT   | High power semiconductor laser diode                                       | Utility        | Utility -<br>NSPCT    | Issued | CN      | Apr 24, 2002     | Apr 14, 2003 | 038090024.4           | Aug 6, 2008  | 2109809024.4    | Oclaro Technology Ltd |
| OCAR 00428/DEZ   | High power semiconductor laser diode                                       | Utility        | Utility -<br>EP/PAT   | Issued | DE      | Apr 24, 2002     | Apr 14, 2003 | 03715248.5            | Oct 7, 2005  | 60302362.2      | Oclaro Technology Ltd |
| OCAR 00428/FRZ   | High power semiconductor laser diode                                       | Utility        | Utility -<br>EP/PAT   | Issued | FR      | Apr 24, 2002     | Apr 14, 2003 | 03715248.5            | Oct 7, 2005  | 1518304         | Oclaro Technology Ltd |
| OCAR 00428/GBZ   | High power semiconductor laser diode                                       | Utility        | Utility -<br>EP/PAT   | Issued | GB      | Apr 24, 2002     | Apr 14, 2003 | 03715248.5            | Oct 7, 2005  | 1518304         | Oclaro Technology Ltd |
| OCAR 00428/JPT   | High power semiconductor laser diode                                       | Utility        | Utility -<br>NSPCT    | Issued | JP      | Apr 24, 2002     | Apr 14, 2003 | 21004-500378          | Sep 22, 2011 | 4827430         | Oclaro Technology Ltd |
| OCAR 00428/US    | High power semiconductor laser diode                                       | Utility        | Utility -<br>ORG      | Issued | US      | Apr 24, 2002     | Apr 24, 2002 | 10/131,335            | Sep 28, 2004 | 6,798,815       | Oclaro Technology Ltd |
| OCAR 00920/US    | High power semiconductor laser diode and<br>method for making such a diode | Utility        | Utility -<br>ORG      | Issued | US      | Sep 17, 2002     | Sep 17, 2002 | 10/745,199            | Mar 1, 2005  | 6,862,300       | Oclaro Technology Ltd |
| OCAR 00429/US/DI | High power laser diode (higher order mode<br>control)                      | Utility        | Utility - DNV         | Issued | US      | Sep 17, 2002     | Sep 17, 2002 | 11/972,156            | Nov 24, 2009 | 7,623,555       | Oclaro Technology Ltd |
| OCAR 00459/US    | Semiconductor laser  | Utility        | Utility -<br>ORG      | Issued | US      | May 10, 2002     | May 10, 2002 | 10/741,914            | Apr 20, 2004 | 6,724,795       | Oclaro Technology Ltd |
| OCAR 00480/CNT   | Laser stabilisation using very high relative<br>feedback                   | Utility        | Utility -<br>NSPCT    | Issued | CN      | Feb 13, 2003     | Feb 9, 2004  | 20048000411.4         | Sep 9, 2009  | 2120048000411.4 | Oclaro Technology Ltd |

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|-------------------|---|------------------|---------|----|--------------|--------------|----------------|--------------|-----------------|-----------------------|
| OCIA 00480/GB     | Laser stabilization using very high relative feedback                     | Utility - ONG    | Issued  | GB | Feb 13, 2003 | Feb 13, 2003 | 0503271.1      | Aug 16, 2006 | 2396425         | Oclaro Technology Ltd |
| OCIA 00480/US     | Laser stabilization using very high relative feedback                     | Utility - ONG    | Issued  | US | Feb 13, 2003 | Feb 10, 2004 | 10/775,302     | Aug 29, 2006 | 7,099,361       | Oclaro Technology Ltd |
| OCIA 00636/DET    | Stabilized laser source with very high feedback and narrow bandwidth      | Utility - EP/PAT | Issued  | DE | Apr 27, 2004 | Apr 25, 2005 | 05/732666.2    | Aug 15, 2012 | 1745532         | Oclaro Technology Ltd |
| OCIA 00636/FRT    | Stabilized laser source with very high feedback and narrow bandwidth      | Utility - EP/PAT | Issued  | FR | Apr 27, 2004 | Apr 25, 2005 | 05/732666.2    | Aug 15, 2012 | 1745532         | Oclaro Technology Ltd |
| OCIA 00636/GST    | Stabilized laser source with very high feedback and narrow bandwidth      | Utility - EP/PAT | Issued  | GB | Apr 27, 2004 | Apr 25, 2005 | 05/732666.2    | Aug 15, 2012 | 1745532         | Oclaro Technology Ltd |
| OCIA 00636/JPT    | Stabilized laser source with very high feedback and narrow bandwidth      | Utility - NS/PCT | Issued  | JP | Apr 27, 2004 | Apr 25, 2005 | 2007-510147    | Mar 16, 2012 | 4950030         | Oclaro Technology Ltd |
| OCIA 00636/UST/CI | Stabilized laser source with very high feedback and narrow bandwidth      | Utility - CIP    | Pending | US | Apr 27, 2004 | Jul 2, 2009  | 12/496,919     |              |                 | Oclaro Technology Ltd |
| OCIA 00836/UST    | High Power semiconductor laser diode                                      | Utility - NS/PCT | Issued  | US | Nov 21, 2005 | Nov 20, 2006 | 12/094,316     | May 11, 2010 | 7,715,457       | Oclaro Technology Ltd |
| OCIA 00841/CMT    | Structured wire bond configuration to laser chip                          | Utility - NS/PCT | Issued  | CN | Jun 28, 2005 | Jun 28, 2006 | 200680023667.4 | Mar 27, 2013 | 2120080023667.4 | Oclaro Technology Ltd |
| OCIA 00841/EPT    | Structured wire bond configuration to laser chip                          | Utility - NS/PCT | Pending | EP | Jun 28, 2005 | Jun 28, 2006 | 06/755802.3    |              |                 | Oclaro Technology Ltd |
| OCIA 00841/JPT    | Structured wire bond configuration to laser chip                          | Utility - NS/PCT | Pending | JP | Jun 28, 2005 | Jun 28, 2006 | 2006-518985    |              |                 | Oclaro Technology Ltd |
| OCIA 00841/UST    | Structured wire bond configuration to laser chip                          | Utility - NS/PCT | Pending | US | Jun 28, 2005 | Jun 28, 2006 | 11/593,304     |              |                 | Oclaro Technology Ltd |
| OCIA 00842/JPT    | Fuzzy unpumped end section for high power laser diode chip                | Utility - NS/PCT | Pending | JP | Jun 28, 2005 | Jun 28, 2006 | 2006-518984    |              |                 | Oclaro Technology Ltd |
| OCIA 00842/UST    | High power semiconductor opto-electronic device                           | Utility - NS/PCT | Issued  | US | Jun 28, 2005 | Jun 28, 2006 | 11/593,247     | Feb 7, 2012  | 6,111,727       | Oclaro Technology Ltd |
| OCIA 00858/CMT    | Chirped pulsed laser source   | Utility - NS/PCT | Issued  | CN | Oct 15, 2007 | Oct 15, 2008 | 20080116303.2  | Jul 4, 2012  | 2120080116303.2 | Oclaro Technology Ltd |
| OCIA 00858/EPT    | Chirped pulsed laser source   | Utility - NS/PCT | Pending | EP | Oct 15, 2007 | Oct 15, 2008 | 08840144.3     |              |                 | Oclaro Technology Ltd |
| OCIA 00858/JPT    | Chirped pulsed laser source   | Utility - NS/PCT | Pending | JP | Oct 15, 2007 | Oct 15, 2008 | 2010-519286    |              |                 | Oclaro Technology Ltd |
| OCIA 00858/US     | Chirped pulsed laser source   | Utility - ONG    | Issued  | US | Oct 15, 2007 | Oct 10, 2008 | 12/748,984     | Jun 12, 2012 | 8,159,784       | Oclaro Technology Ltd |
| OCIA 00900/DEE    | Semiconductor laser device and method for fabrication thereof             | Utility - EP/PAT | Issued  | DE | Feb 11, 1999 | Feb 11, 1999 | 99101756.7     | May 2, 2001  | 63900096.3      | Avalon Photonics Ltd  |
| OCIA 00900/FRE    | Semiconductor laser device and method for fabrication thereof             | Utility - EP/PAT | Issued  | FR | Feb 11, 1999 | Feb 11, 1999 | 99101756.7     | May 2, 2001  | 1035621         | Avalon Photonics Ltd  |
| OCIA 00900/GBE    | Semiconductor laser device and method for fabrication thereof             | Utility - EP/PAT | Issued  | GB | Feb 11, 1999 | Feb 11, 1999 | 99101756.7     | May 2, 2001  | 1035621         | Avalon Photonics Ltd  |
| OCIA 00900/US     | Semiconductor laser device and method for fabrication thereof             | Utility - ONG    | Issued  | US | Feb 11, 1999 | Feb 9, 2000  | 09/501,561     | Apr 2, 2002  | 6,365,427       | Avalon Photonics Ltd  |
| OCIA 00901/US     | Vertical-cavity surface-emitting laser comprised of single laser elements | Utility - ONG    | Issued  | US | Nov 22, 1999 | Nov 17, 2000 | 09/715,597     | Jan 14, 2003 | 6,507,595       | Avalon Photonics Ltd  |
| OCIA 00902/US     | A polarization-stable vertical cavity surface emitting laser device       | Utility - ONG    | Issued  | US | Jan 17, 2001 | Jan 14, 2002 | 10/050,087     | Mar 1, 2005  | 6,862,310       | Avalon Photonics Ltd  |
| OCIA 00904/US     | Medium photonic-based vertical-cavity surface-emitting laser              | Utility - ONG    | Issued  | US | Sep 18, 2001 | Sep 16, 2002 | 10/744,343     | Apr 13, 2004 | 6,771,348       | Avalon Photonics Ltd  |
| OCIA 00905/GST    | High speed vertical cavity surface emitting laser device (VCSEL) with low | Utility - EP/PAT | Issued  | GB | Apr 25, 2002 | Apr 25, 2002 | 02009477.7     | Oct 11, 2005 | 1357648         | Avalon Photonics Ltd  |
| OCIA 00905/US     | High speed vertical cavity surface emitting laser device (VCSEL) with low | Utility - ONG    | Issued  | US | Apr 25, 2002 | Apr 24, 2003 | 10/472,397     | Jun 13, 2006 | 7,061,956       | Avalon Photonics Ltd  |



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| OCAR 00907/EP     | A vertical cavity surface emitting laser having improved transverse mode control | Utility | Pending | EP | Jul 7, 2003  | Jul 7, 2003  | 03015307.6 |              |            |  | Anadon Photonics AG   |
| OCAR 00908/DEE    | A high power top emitting vertical cavity surfaces emitting laser                | Utility | Issued  | DE | Sep 1, 2003  | Sep 1, 2003  | 03019870.9 | Aug 4, 2010  | 50333632.9 |  | Anadon Photonics AG   |
| OCAR 00908/FRE    | A high power top emitting vertical cavity surfaces emitting laser                | Utility | Issued  | FR | Sep 1, 2003  | Sep 1, 2003  | 03019870.9 | Aug 4, 2010  | 1511138    |  | Anadon Photonics AG   |
| OCAR 00908/GRE    | A high power top emitting vertical cavity surfaces emitting laser                | Utility | Issued  | GB | Sep 1, 2003  | Sep 1, 2003  | 03019870.9 | Aug 4, 2010  | 1511138    |  | Anadon Photonics AG   |
| OCAR 00908/UST/NT | High power top emitting vertical cavity surface emitting laser                   | Utility | Issued  | US | Sep 1, 2003  | Aug 30, 2004 | 12/567,753 | Aug 21, 2012 | 8,247,252  |  | Ocdaro Technology Ltd |
| OCAR 00915/US     | Substrate patterning of VCSEL for hybrid integration                             | Utility | Issued  | US | Apr 3, 2007  | Mar 31, 2008 | 12/059,111 | Dec 20, 2011 | 8,081,671  |  | Ocdaro Technology Ltd |
| OCAR 00918/EP     | High power semiconductor laser diodes  | Utility | Pending | EP | Sep 20, 2007 | Sep 18, 2008 | 08807113.9 |              |            |  | Ocdaro Technology Ltd |
| OCAR 00918/US/CI  | Stress and strain optimization   | Utility | Issued  | US | Sep 20, 2007 | Sep 1, 2010  | 12/873,382 | Nov 27, 2012 | 8,320,419  |  | Ocdaro Technology Ltd |
| OCAR 00918/US/DI  | High power semiconductor laser diodes  | Utility | Pending | US | Sep 1, 2010  | Nov 27, 2012 | 13/686,840 |              |            |  | Ocdaro Technology Ltd |
| OCAR 00917/EP     | VCSEL with reduced RMS linewidth   | Utility | Pending | EP | Sep 30, 2008 | Sep 30, 2009 | 09785710.6 |              |            |  | Ocdaro Technology Ltd |
| OCAR 00917/UST    | VCSEL with reduced RMS linewidth   | Utility | Issued  | US | Sep 30, 2008 | Sep 30, 2009 | 13/121,885 | Jan 15, 2013 | 8,355,423  |  | Ocdaro Technology Ltd |
| OCAR 00951/US     | Laser package and method of assembly   | Utility | Issued  | US | Sep 24, 1993 | Sep 24, 1993 | 12/6,259   | Aug 1, 1995  | 5,438,580  |  | Ocdaro Photonics, Inc |
| OCAR 00951/US     | Laser package with reversed laser diode  | Utility | Issued  | US | Feb 10, 1995 | Feb 10, 1995 | 386,413    | Aug 27, 1996 | 5,550,852  |  | Ocdaro Photonics, Inc |
| OCAR 00953/US     | Reduced mode laser and method of fabrication                                     | Utility | Issued  | US | Apr 19, 1996 | Apr 19, 1996 | 634,771    | Dec 9, 1997  | 5,696,764  |  | Ocdaro Photonics, Inc |
| OCAR 00954/US     | Laser diode system   | Utility | Issued  | US | Nov 12, 1996 | Nov 12, 1996 | 745,446    | Apr 28, 1998 | 5,745,519  |  | Ocdaro Photonics, Inc |
| OCAR 00955/US     | Low divergence laser diode   | Utility | Issued  | US | Apr 4, 1997  | Apr 4, 1997  | 832,646    | Sep 1, 1998  | 5,801,403  |  | Ocdaro Photonics, Inc |
| OCAR 00956/US     | InGaAsP/AlGaAs/GaAs hetero structure diode laser containing indium               | Utility | Issued  | US | Feb 14, 1997 | Feb 14, 1997 | 08/800,768 | Apr 27, 1999 | 5,898,721  |  | Ocdaro Photonics, Inc |
| OCAR 00957/US     | Laser diode array with built-in current and voltage surge protection             | Utility | Issued  | US | Jan 29, 1996 | Dec 15, 1997 | 08/990,347 | Feb 22, 2000 | 6,028,878  |  | Ocdaro Photonics, Inc |
| OCAR 00961/US     | Increasing laser beam power density  | Utility | Issued  | US | Nov 8, 2000  | Nov 8, 2000  | 09/710,327 | Dec 10, 2002 | 6,493,148  |  | Ocdaro Photonics, Inc |
| OCAR 00962/US     | Focusing multiple laser beams  | Utility | Issued  | US | Nov 8, 2000  | Nov 8, 2000  | 09/710,800 | Feb 4, 2003  | 6,516,011  |  | Ocdaro Photonics, Inc |
| OCAR 00963/US     | Diode beam transformation  | Utility | Issued  | US | Sep 28, 2001 | Sep 28, 2001 | 09/967,751 | Jul 29, 2003 | 6,600,605  |  | Ocdaro Photonics, Inc |
| OCAR 00964/US     | Reliable laser diode stack   | Utility | Issued  | US | May 22, 2002 | May 22, 2002 | 10/152,956 | Jul 27, 2004 | 6,788,753  |  | Ocdaro Photonics, Inc |
| OCAR 00965/US     | Improved fiber bundle alignment  | Utility | Issued  | US | Jun 4, 2002  | Jul 30, 2002 | 10/207,369 | Oct 5, 2004  | 6,799,899  |  | Ocdaro Photonics, Inc |
| OCAR 00966/US     | Cleaving laser diodes having gratings  | Utility | Issued  | US | Jun 10, 2003 | Jun 10, 2003 | 10/458,469 | Apr 26, 2005 | 6,985,793  |  | Ocdaro Photonics, Inc |
| OCAR 00967/US     | Low inductance quantum well structures   | Utility | Issued  | US | Apr 11, 2003 | Apr 11, 2003 | 10/410,835 | Aug 30, 2005 | 6,936,103  |  | Ocdaro Photonics, Inc |
| OCAR 00968/US     | Stepped manifold array of microchannel heat sinks                                | Utility | Issued  | US | Sep 20, 2003 | Sep 20, 2003 | 10/666,999 | Jun 6, 2006  | 7,058,101  |  | Ocdaro Photonics, Inc |

|                    |   |         |               |         |    |              |              |                |              |                |                       |
|--------------------|---|---------|---------------|---------|----|--------------|--------------|----------------|--------------|----------------|-----------------------|
| OCLEO 00969/US     | GaNAsP/AlGaInP laser diodes with AlGaAs type II carrier blocking layer in the waveguide             | Utility | Utility-ORG   | Issued  | US | Feb 16, 1999 | Feb 16, 1999 | 09/750,900     | Oct 2, 2001  | 6,296,077      | Oclaro Photonics, Inc |
| OCLEO 00970/US     | Laser diodes with composite material systems which decouple refractive index and band gap profiles. | Utility | Utility-ORG   | Issued  | US | Feb 25, 1999 | Feb 25, 1999 | 09/757,906     | Oct 2, 2001  | 6,296,078      | Oclaro Photonics, Inc |
| OCLEO 00971/US     | Printed circuit board waveguide   | Utility | Utility-ORG   | Issued  | US | Mar 11, 1999 | Mar 11, 1999 | 09/767,944     | Apr 9, 2002  | 6,370,291      | Oclaro Photonics, Inc |
| OCLEO 00972/US     | Increasing the yield of precise wavelength lasers   | Utility | Utility-ORG   | Issued  | US | May 3, 2001  | May 3, 2001  | 09/848,529     | Sep 24, 2002 | 6,455,341      | Oclaro Photonics, Inc |
| OCLEO 00973/CNT    | Laser emitting modules and methods of assembly  | Utility | Utility-NSPCT | Issued  | CN | Dec 17, 2007 | Dec 17, 2008 | 200880120841.9 | Apr 18, 2013 | 200880120841.9 | Oclaro Photonics, Inc |
| OCLEO 00973/CNT/D1 | Laser emitting modules and methods of assembly  | Utility | Utility-DIV   | Pending | CN | Dec 17, 2007 | Feb 1, 2012  | 20121002342.4  |              |                | Oclaro Photonics, Inc |
| OCLEO 00973/EP     | Laser emitting modules and methods of assembly  | Utility | Utility-NSPCT | Pending | EP | Dec 17, 2007 | Dec 17, 2008 | 08862579.3     |              |                | Oclaro Photonics, Inc |
| OCLEO 00973/JP     | Laser emitting modules and methods of assembly  | Utility | Utility-NSPCT | Pending | JP | Dec 17, 2007 | Dec 17, 2008 | 2010-558236    |              |                | Oclaro Photonics, Inc |
| OCLEO 00973/US     | Laser emitting modules and methods of assembly  | Utility | Utility-ORG   | Pending | US | Dec 17, 2007 | Dec 17, 2008 | 12/937,275     |              |                | Oclaro Photonics, Inc |
| OCLEO 00974/US     | Methods for stacking laser emitter arrays   | Utility | Utility-ORG   | Issued  | US | Jun 15, 2006 | Jun 12, 2007 | 11/761,901     | Mar 16, 2010 | 7,680,170      | Oclaro Photonics, Inc |
| OCLEO 00975/US     | Apparatus and method of coupling a fiber optic device to a laser                                    | Utility | Utility-ORG   | Issued  | US | Oct 6, 2006  | Oct 6, 2007  | 11/973,207     | Jan 11, 2011 | 7,866,897      | Oclaro Photonics, Inc |
| OCLEO 00976/US     | Multiple emitter coupling device and methods with beam transform systems.                           | Utility | Utility-ORG   | Issued  | US | May 20, 2006 | May 10, 2007 | 11/747,172     | Nov 9, 2010  | 7,830,608      | Oclaro Photonics, Inc |
| OCLEO 00982/CNT    | High brightness diode output methods and devices  | Utility | Utility-NSPCT | Pending | CN | May 8, 2008  | May 7, 2009  | 200980116402.5 |              |                | Oclaro Photonics, Inc |
| OCLEO 00982/EP     | High brightness diode output methods and devices  | Utility | Utility-NSPCT | Pending | EP | May 8, 2008  | May 7, 2009  | 09743689.3     |              |                | Oclaro Photonics, Inc |
| OCLEO 00982/JP     | High brightness diode output methods and devices  | Utility | Utility-NSPCT | Pending | JP | May 8, 2008  | May 7, 2009  | 2011-508676    |              |                | Oclaro Photonics, Inc |
| OCLEO 00982/US     | High brightness diode output methods and devices  | Utility | Utility-NSPCT | Pending | US | May 8, 2008  | May 7, 2009  | 12/990,215     |              |                | Oclaro Photonics, Inc |
| OCLEO 00985/CNT    | Homogenization of far field fiber coupled radiation   | Utility | Utility-NSPCT | Pending | CN | Jan 22, 2010 | Jan 20, 2011 | 2011800151237  |              |                | Oclaro Photonics, Inc |
| OCLEO 00985/EP     | Homogenization of far field fiber coupled radiation   | Utility | Utility-NSPCT | Pending | EP | Jan 22, 2010 | Jan 20, 2011 | 11735155.7     |              |                | Oclaro Photonics, Inc |
| OCLEO 00985/JP     | Homogenization of far field fiber coupled radiation   | Utility | Utility-NSPCT | Pending | JP | Jan 22, 2010 | Jan 20, 2011 | 2012-550722    |              |                | Oclaro Photonics, Inc |
| OCLEO 00985/MY     | Homogenization of far field fiber coupled radiation   | Utility | Utility-NSPCT | Pending | MY | Jan 22, 2010 | Jan 20, 2011 | 2012003244     |              |                | Oclaro Photonics, Inc |
| OCLEO 00985/US     | Homogenization of far field fiber coupled radiation   | Utility | Utility-NSPCT | Pending | US | Jan 22, 2010 | Jan 20, 2011 | 13/522,692     |              |                | Oclaro Photonics, Inc |
| OCLEO 00989/CNT    | Laser system with highly linear output  | Utility | Utility-NSPCT | Pending | CN | Jan 8, 2010  | Aug 19, 2010 |                |              |                | Oclaro Technology Ltd |
| OCLEO 00989/EP     | Laser system with highly linear output  | Utility | Utility-NSPCT | Pending | EP | Jan 8, 2010  | Aug 19, 2010 | 10760760.8     |              |                | Oclaro Technology Ltd |
| OCLEO 00989/JP     | Laser system with highly linear output  | Utility | Utility-NSPCT | Pending | JP | Jan 8, 2010  | Aug 19, 2010 | 2012-547555    |              |                | Oclaro Technology Ltd |
| OCLEO 00989/US     | Laser system with highly linear output  | Utility | Utility-NSPCT | Pending | US | Jan 8, 2010  | Nov 19, 2010 | 12/993,617     |              |                | Oclaro Technology Ltd |
| OCLEO 00993/EP     | Improvements to pump laser diode  | Utility | Utility-NSPCT | Pending | EP | Apr 6, 2010  | Apr 6, 2011  | 11716007.7     |              |                | Oclaro Technology Ltd |

|                  |  |                    |         |    |              |              |                 |              |                             |
|------------------|--|--------------------|---------|----|--------------|--------------|-----------------|--------------|-----------------------------|
| OCLR 00993/JPT   | Improvements to pump laser diode   | Utility-<br>NS/CT  | Pending | JP | Apr 6, 2010  | Apr 6, 2011  | 2013-503173     |              | Ocleo Technology Ltd        |
| OCLR 00994/UST   | Improvements to pump laser diode   | Utility-<br>NS/CT  | Pending | US | Apr 6, 2010  | Apr 6, 2011  | 13/639,833      |              | Ocleo Technology Ltd        |
| OCLR 00995/CNT   | Dual independent output pump scheme with single pump laser                             | Utility-<br>ORG    | Unified | CN | May 13, 2010 |              | 2011820031235.1 |              | Ocleo Technology Ltd        |
| OCLR 00995/EPT   | Dual independent output pump scheme with single pump laser                             | Utility-<br>ORG    | Pending | EP | May 13, 2010 | Dec 7, 2012  | 111720165.7     |              | Ocleo Technology Ltd        |
| OCLR 00995/JPT   | Dual independent output pump scheme with single pump laser                             | Utility-<br>ORG    | Unified | JP | May 13, 2010 |              | 2013-509624     |              | Ocleo Technology Ltd        |
| OCLR 00995/UST   | Optical Amplifiers   | Utility-<br>ORG    | Pending | US | May 13, 2010 | Nov 13, 2012 | 13/697,776      |              | Ocleo Technology Ltd        |
| OCLR 01035/OEE   | Wavelength stabilization of laser diodes   | Utility-<br>EP/PAT | Issued  | DE | Apr 30, 1999 | Apr 25, 2000 | 00401137.5      | Jun 3, 2009  | Ocleo (North America), Inc. |
| OCLR 01036/FRE   | Wavelength stabilization of laser diodes   | Utility-<br>EP/PAT | Issued  | FR | Apr 30, 1999 | Apr 25, 2000 | 00401137.5      | Jun 3, 2009  | Ocleo (North America), Inc. |
| OCLR 01036/GBE   | Wavelength stabilization of laser diodes   | Utility-<br>EP/PAT | Issued  | GB | Apr 30, 1999 | Apr 25, 2000 | 00401137.5      | Jun 3, 2009  | Ocleo (North America), Inc. |
| OCLR 01036/US    | Laser with wide operating temperature range  | Utility-<br>ORG    | Issued  | US | Apr 30, 1999 | Apr 17, 2000 | 02/550,596      | Oct 4, 2005  | Ocleo (North America), Inc. |
| OCLR 01120/US    | Surface emitting semiconductor laser   | Utility-<br>ORG    | Issued  | US | Dec 27, 1995 | Dec 26, 1996 | 08/773,360      | Oct 6, 1998  | Ocleo (North America), Inc. |
| OCLR 01121/US    | Laser device, notably for optical pumping, and method of fabricating it                | Utility-<br>ORG    | Issued  | US | Nov 21, 1995 | Nov 20, 1996 | 08/753,093      | Feb 10, 1998 | Ocleo (North America), Inc. |
| OCLR 01122/US    | Method for manufacturing a surface-emitting laser                                      | Utility-<br>ORG    | Issued  | US | Jul 4, 1996  | Jul 4, 1996  | 08/885,843      | Dec 29, 1998 | Ocleo (North America), Inc. |
| OCLR 01137/US    | Surface emitting semiconductor laser   | Utility-<br>ORG    | Issued  | US | Apr 3, 1997  | Mar 26, 1998 | 02/053,704      | Apr 18, 2000 | Ocleo (North America), Inc. |
| OCLR 01200/US    | Process and apparatus for the modulation and amplification of light beams              | Utility-<br>ORG    | Issued  | US | Jun 15, 1992 | Jun 11, 1993 | 08/075,673      | May 9, 1995  | Ocleo (North America), Inc. |
| OCLR 01243/US    | Process for producing an electrically controllable matrix or vertically structured     | Utility-<br>ORG    | Issued  | US | Jun 22, 1994 | Jun 22, 1995 | 08/493,786      | Jul 9, 1996  | Ocleo (North America), Inc. |
| OCLR 01580/GB/P1 | Pump wavelength stabilization  | Utility-<br>ORG    | Pending | GB | Oct 7, 2010  | Oct 7, 2010  | 1016929.0       |              | Ocleo Technology Ltd        |
| OCLR 01582/US/P1 | Package for compact and high power lasers  | Utility-<br>ORG    | Allowed | US | Jan 11, 2011 | Jan 11, 2011 | 13/004,579      |              | Ocleo Photonics, Inc        |
| OCLR 01621/CN/P1 | High power laser beam walk-off   | Utility-<br>ORG    | Pending | CN | Jul 21, 2011 | Jul 21, 2011 | 201110218047.1  |              | Ocleo Technology Ltd        |
| OCLR 01621/WO    | High power laser beam walk-off   | Utility-<br>ORG    | Pending | WO | Jul 21, 2011 | Jul 21, 2012 | CN2013078796    |              | Ocleo Technology Ltd        |
| OCLR 01621/CN/P1 | High power laser beam walk-off   | Model-<br>ORG      | Issued  | CN | Jul 21, 2011 | Jul 21, 2011 | 201110275218.X  | Jan 9, 2013  | Ocleo Technology Ltd        |
| OCLR 01626/GB    | Moisture resistant VCSEL   | Utility-<br>ORG    | Pending | GB | Aug 23, 2011 | Mar 20, 2012 | 1204896.9       |              | Ocleo Technology Ltd        |
| OCLR 01626/US    | Semiconductor Laser Device and a Method for Manufacturing a Semiconductor Laser Device | Utility-<br>ORG    | Pending | US | Aug 23, 2011 | Sep 23, 2012 | 13/592,728      |              | Ocleo Technology Ltd        |
| OCLR 01626/WO    | Moisture resistant VCSEL   | Utility-<br>ORG    | Pending | WO | Aug 23, 2011 | Aug 20, 2012 | 682012/052030   |              | Ocleo Technology Ltd        |
| OCLR 01628/GB/P1 | Improved pump chip   | Utility-<br>ORG    | Pending | GB | Apr 25, 2012 | Apr 25, 2012 | 13/07261.7      |              | Ocleo Technology Ltd        |
| OCLR 01635/US/P2 | Special beam combining for multiple diode laser elements                               | Utility-<br>NP/NEW | Pending | US | Apr 2, 2012  | Mar 6, 2013  | 13/787,546      |              | Ocleo, Inc.                 |