

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT5452543

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
LYTRO, INC.	03/25/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	GOOGLE LLC
<b>Street Address:</b>	1600 AMPHITHEATRE PARKWAY
<b>City:</b>	MOUNTAIN VIEW
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	94043
<b>PROPERTY NUMBERS Total: 21</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	15621128
Application Number:	15097152
Application Number:	15422372
Application Number:	15824574
Application Number:	14834924
Application Number:	15451831
Application Number:	15582237
Application Number:	15635894
Application Number:	15590808
Application Number:	15703553
Application Number:	15590841
Application Number:	15832023
Application Number:	15729918
Application Number:	15730096
Application Number:	15831770
Application Number:	15874723
Application Number:	15897994
Application Number:	15730481
Application Number:	15150679
Application Number:	15706343

PATENT

<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15605037

**CORRESPONDENCE DATA**

**Fax Number:** (512)355-1119  
*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.*

**Phone:** (512)582-2455  
**Email:** google@ds-patent.com  
**Correspondent Name:** DAVIDSON SHEEHAN LLP  
**Address Line 1:** 6836 AUSTIN CENTER BLVD.  
**Address Line 2:** SUITE 320  
**Address Line 4:** AUSTIN, TEXAS 78731

<b>NAME OF SUBMITTER:</b>	MOLLY TAYLOR
<b>SIGNATURE:</b>	/Molly Taylor/
<b>DATE SIGNED:</b>	04/02/2019

**Total Attachments: 25**

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## ASSIGNMENT OF PATENTS

This ASSIGNMENT OF PATENTS (“**Assignment**”), is effective as of March 26, 2018 (“**Effective Date**”) by and between Lytro, Inc., a Delaware corporation (“**Assignor**”) and Google LLC, a Delaware limited liability company (“**Assignee**”).

WHEREAS, Assignor and Assignee are parties to the Asset Purchase Agreement, dated as of March 26, 2018 (the “**Purchase Agreement**”) pursuant to which Assignor has sold, and Assignee has purchased (a) the patents (to include design patents), utility models, and patent applications set forth on Schedule A attached hereto (the “**Transferred Patents**”), (b) patents (to include design patents), utility models, or patent applications (i) to which any of the Transferred Patents claims priority, (ii) for which any of the Transferred Patents forms a basis for priority, (iii) that were co-owned applications that incorporate by reference, or are incorporated by reference into, the Transferred Patents, and/or (iv) which are subject to a terminal disclaimer with any of the Transferred Patents; (c) reissues, reexaminations, extensions, continuations, continuations in part, continuing prosecution applications, requests for continuing examinations, divisions, and registrations of any item in any of the foregoing categories (a) and (b); (d) foreign and multinational patents, patent applications and counterparts relating to any item in any of the foregoing categories (a) through (c), including, without limitation, certificates of invention and utility models; (e) rights provided by multinational treaties or conventions for any item in any of the foregoing categories (a) through (d); and (f) all other rights appurtenant in and to each and every of the foregoing (a) through (e) including, but not limited to, title and interest and the right to recover for past and future infringement in the United States of America and all other countries and jurisdictions of the world (all of the foregoing (a) through (f) collectively, the “**Patents**”);

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Assignor and Assignee hereby agree as follows:

1. Assignment. Assignor hereby irrevocably sells, transfers and assigns to Assignee, and Assignee hereby accepts the assignment of, all rights, title and interest as Assignor may possess in, to and under the Patents worldwide, together with (i) all registrations and applications for the Patents, (ii) all income, royalties, damages and payments in respect of the Patents, (iii) the right, if any, to register, prosecute, maintain and defend the Patents before any public or private agency or registrar, and (v) all causes of action (either in law or in equity) and the right to sue, counterclaim and recover for infringement of the Patents (whether arising prior to or subsequent to the date of this Assignment), and the right to fully and entirely stand in the place of Assignor in all matters related thereto.
2. Recordation. Assignor hereby authorizes the respective patent office or governmental agency in each jurisdiction to issue any and all patents or certificates of invention which may be granted upon any of the Patents in the name of Assignee, as the assignee to the entire interest therein.
3. Further Assurances. Assignor shall execute and deliver such documents and instruments, provide such information, cooperation, assistance and otherwise take such steps as Assignee or its legal representatives may reasonably require, at Assignor’s cost and expense, to

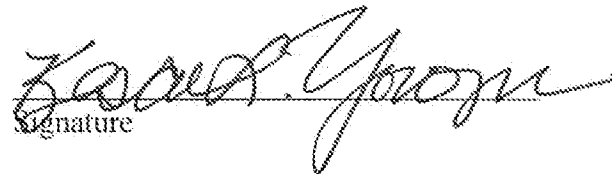
evidence and perfect the transfer and assignment to Assignee of the Patents, free and clear of all liens, and to give Assignee the full benefit of this Assignment. Assignor hereby appoints Assignee's in-house counsel as Assignor's attorney-in-fact to execute all documents on behalf of Assignor and its employees (as applicable) for this limited purpose.

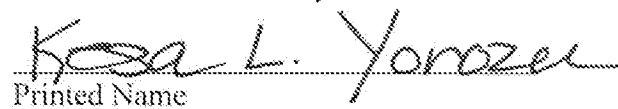
4. Governing Law; Interpretation. This Assignment shall be governed by and construed in accordance with the laws of the State of California, regardless of the laws that might otherwise govern under applicable principles of conflicts of laws thereof. Nothing contained in this Assignment shall in any way supersede, merge with, modify, replace, amend, change, rescind, waive, exceed, expand, enlarge or in any way affect the provisions set forth in the Purchase Agreement, nor shall this Assignment reduce, expand or enlarge any remedies arising under the Purchase Agreement. This Assignment may not be supplemented, altered or modified in any manner except by a writing signed by the parties hereto.
5. Counterparts. This Assignment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one instrument.

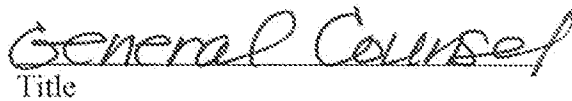
*(Signature page follows)*

IN WITNESS WHEREOF, this Assignment of Patents has been duly executed and delivered by an authorized representative of each of the parties, effective as of the Effective Date.

**Lytro, Inc.** ("Assignor")

  
Signature

  
Printed Name

  
Title

**Google LLC** ("Assignee")

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

SIGNATURE PAGE TO ASSIGNMENT OF PATENTS

**IN WITNESS WHEREOF**, this Assignment of Patents has been duly executed and delivered by an authorized representative of each of the parties, effective as of the Effective Date.

**LYTRO, INC.** (“Assignor”)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

**GOOGLE LLC** (“Assignee”)



\_\_\_\_\_  
Signature

\_\_\_\_\_  
Kenneth H. Yi  
Printed Name

\_\_\_\_\_  
Assistant Secretary  
Title

SIGNATURE PAGE TO ASSIGNMENT OF PATENTS

**PATENT**  
**REEL: 048764 FRAME: 0084**

ACKNOWLEDGMENT

*A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.*

State of California

County of ALAMEDA

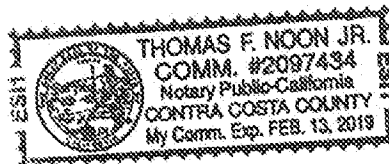
Thomas F. Noon, Jr.  
- Notary Public

On MARCH 25, 2018 before me, \_\_\_\_\_, personally appeared  
MESA L. YOROZU, who proved to me on the basis of satisfactory evidence to be  
the person(s) whose name(s) is are subscribed to the within instrument and acknowledged to me that  
he she they executed the same in his her their authorized capacity(ies), and that by his her their  
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted,  
executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing  
paragraph is true and correct.

WITNESS my hand and official seal.

Signature Thomas F. Noon, Jr.  
Thomas F. Noon, Jr.  
- Notary Public



(Seal)

NOTARIZATION PAGE TO ASSIGNMENT OF PATENTS

**PATENT**  
**REEL: 048764 FRAME: 0085**

# SCHEDULE A

## TRANSFERRED PATENTS

Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
LYT001-PROV	Lytro, Inc.	614626,142	4/13/2011	4/13/2011	None	Method and System for Compressing RAW Images	Expired	Expired 4/13/12
						Extending Light-Field Processing to Include Extended Depth of Field and Variable Center of Perspective	Expired	Expired 6/6/13
LYT003-PROV	Lytro, Inc.	61655,790	6/9/2012	6/5/2012	None	Extended Depth of Field and Variable Center of Perspective in Light-Field Processing	Issued	Issued 8/19/14 as 8,311,799
LYT003	Lytro, Inc.	13688,028	11/26/2012	2/28/2012	UTIL. of LYT018-PROV, LYT021-PROV, LYT088-PROV, LYT003-PROV	Generating Dolly Zoom Effect Using Light Field Image Data	Issued	Issued 3/13/15 as 8,971,625
LYT003-CONT	Lytro, Inc.	14311,592	6/23/2014	2/28/2012	CONT of LYT003	Capturing Images Using Multiple Devices	Issued	Issued 4/7/15 as 9,001,226
LYT004	Lytro, Inc.	13689,798	12/4/2012	12/4/2012	None	Capturing and Relighting Images Using Multiple Devices	Pending	
LYT004-CONT	Lytro, Inc.	14634,659	2/27/2015	12/4/2012	CONT of LYT004	Storage and Transmission of Pictures	Issued	Issued 12/31/14 as 9,998,989
LYT008	Lytro, Inc.	13185,882	6/8/2011	4/18/2009	CIP of LYT003			

## SCHEDULE A TO ASSIGNMENT OF PATENTS



Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Including Multiple Frames		
						Storage and Transmission of Pictures		
LYT009PCT	Lytro, Inc.	PCT/US12/31958	4/3/2012	6/8/2011	PCT of LYT009	Including Multiple Frames	Expired	Expired 12/8/13, no mat'l phase
						Selective Transmission of Image Data Based on Device Attributes		
LYT009CIP	Lytro, Inc.	13/523,776	6/14/2012	4/16/2009	CIP of LYT009, LYT003, UTL of LYT003-PROV	System and Method for Manufacturing Photonic MicroLens Array	Abandoned	
LYT014-PROV	Lytro, Inc.	81/513,844	6/1/2011	3/1/2011	None	Optical Assembly Including Photonic MicroLens Array	Expired	Expired 3/1/12
LYT014	Lytro, Inc.	13/560,128	7/27/2012	3/1/2011	UTL of LYT014-PROV	Optical Assembly Including Photonic MicroLens Array	Issued	Issued 11/16/15 as 9,184,189
LYT014-CONT	Lytro, Inc.	14/871,703	9/30/2015	6/1/2011	CONT of LYT014	Optical Assembly Including Photonic MicroLens Array	Issued	Issued 4/6/16 as 9,328,926
LYT014-CONT2	Lytro, Inc.	15/053,947	2/25/2016	6/1/2011	CONT of LYT014-CONT	Optical Assembly Including Photonic MicroLens Array	Issued	Issued 8/16/16 as 9,419,949
LYT017	Lytro, Inc.	13/523,319	6/26/2012	6/26/2012	None	Depth-Assigned Content for Depth-Enhanced Pictures	Issued	Issued 3/28/17 as 9,607,424
LYT017-CIP	Lytro, Inc.	15/439,710	2/22/2017	6/26/2012	CIP of LYT017	Depth-Assigned Content for Depth-Enhanced	Pending	

PATENT ASSIGNMENT  
SCHEDULE A-2

Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Virtual Reality Images		
LYT019-PROV	Lyto, Inc.	61/684,166	2/28/2012	2/28/2012	None	Compensating for Sensor Saturation and Microens Modulation During Light-Field Image Processing	Expired	Expired 2/28/13
LYT019	Lyto, Inc.	13/774,926	2/22/2013	2/28/2012	UTL of LYT019-PROV, LYT021-PROV, LYT068-PROV, LYT003-PROV, CIP of LYT003	Compensating for Sensor Saturation and Microens Modulation During Light-Field Image Processing	Issued	Issued 2/3/15 as 8,948,545
						Compensating for Variation in Microens Position During Light-Field Image Processing		
LYT019-DIV	Lyto, Inc.	14/571,103	12/15/2014	2/28/2012	DIV of LYT019	Compensating for Variation in Microens Position During Light-Field Image Processing	Issued	Issued 7/9/16 as 9,386,288
LYT021-PROV	Lyto, Inc.	61/684,175	2/28/2012	2/28/2012	None	Compensating for Variation in Microens Position During Light-Field Image Processing	Expired	Expired 2/28/13
LYT021	Lyto, Inc.	13/774,971	2/22/2013	2/28/2012	UTL of LYT019-PROV, LYT021-PROV, LYT068-PROV, LYT003-PROV, CIP of LYT003	Compensating for Variation in Microens Position During Light-Field Image Processing	Issued	Issued 9/9/14 as 8,831,477
LYT021-CONT	Lyto, Inc.	14/456,102	8/11/2014	2/28/2012	CONT of LYT021	Microens Array Architecture for	Issued	Issued 10/27/15 as 9,172,863

PATENT ASSIGNMENT  
SCHEDULE A-3

Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Avoiding Ghosting in Projected Images		
LYT064	Lytro, Inc.	13/867,303	4/22/2013	2/23/2012	Off of LYT063	Light-Field Based Autocues	Issued	Issued 3/27/16 as 2,866,141
						Automatic Lens Flare Detection and Correction for Light-Field Images		
LYT051	Lytro, Inc.	14/809,022	7/24/2015	7/24/2015	None		Pending	
						Optimization of Optical Systems for Improved Light Field Capture and Manipulation		
LYT064-PROV	Lytro, Inc.	01/644,831	5/9/2012	5/9/2012	None		Expired	Expired 5/9/13
						Optimization of Optical Systems for Improved Light Field Capture and Manipulation		
LYT064	Lytro, Inc.	13/836,192	5/8/2013	5/9/2012	Off of LYT064-PROV		Issued	Issued 3/29/16 as 2,300,922
						Optimization of Optical Systems for Improved Light Field Capture and Manipulation		
LYT064-DIV	Lytro, Inc.	13/830,183	2/22/2016	5/9/2012	DIV of LYT064		Issued	Issued 1/9/18 as 2,866,819
						Optimization of Optical Systems for Improved Light Field Capture and Manipulation		
LYT064-DIV2	Lytro, Inc.	15/811,421	11/13/2017	5/9/2012	DIV of LYT064-DIV		Pending	
						Optimization of Optical Systems for Improved Light Field Capture and Manipulation		
LYT064-DIV3	Lytro, Inc.	15/811,425	11/13/2017	5/9/2012	DIV of LYT064-DIV		Pending	

PATENT ASSIGNMENT  
SCHEDULE A-4

Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
LYT064PCT	Lytro, Inc.	PCT/US12/39760	5/6/2013	5/9/2012	PCT of LYT064-PROV	Optimization of Optical Systems for Improved Light Field Capture and Manipulation	Expired	Expired 11/6/14
LYT064CN	Lytro, Inc.	2013800230929			National phase of LYT064PCT	Optimization of Optical Systems for Improved Light Field Capture and Manipulation	Pending	
LYT064EP	Lytro, Inc.	13786905.3	10/3/2014	5/9/2012	National phase of LYT064PCT	Optimization of Optical Systems for Improved Light Field Capture and Manipulation	Pending	
LYT064HK	Lytro, Inc.	15101661.9	2/13/2015	5/9/2012	Recorded from LYT064CN	Optimization of Optical Systems for Improved Light Field Capture and Manipulation	Pending	Hong Kong publication no 1201391A
LYT064JP	Lytro, Inc.	2015-511561	10/29/2014	5/9/2012	National phase of LYT064PCT	Optimization of Optical Systems for Improved Light Field Capture and Manipulation	Issued	Issued 12/22/16
LYT066-PROV	Lytro, Inc.	61804.195	2/28/2012	2/28/2012	None	Light-Field Processing and Analysis, Camera Control, and User Interfaces and Interaction on Light-Field Capture Devices	Expired	Expired 2/28/13
LYT066	Lytro, Inc.	13774.566	2/22/2013	2/23/2012	UTIL of LYT019-PROV, LYT021-	Light-Field Processing and	Issued	Issued as 8,995,785 on

PATENT ASSIGNMENT  
SCHEDULE A-5

Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
					PROV. LYT093-PROV, LYT003-PROV, CIP of LYT003	Analysis, Camera Control, and User interfaces and interaction on Light-Field Capture Devices		3/31/15
						Parallax and/or Three-Dimensional Effects for Thunder Image Displays		
LYT089	Lytro, Inc.	13669,800	11/6/2012	11/6/2012	None	MicroLens Array and Sensor Assembly	Issued	Issued as 8,987,021 on 3/31/15
LYT092-PROV	Lytro, Inc.	81313,818	4/19/2013	4/19/2013	None	Configuring Two-Dimensional Image Processing Based on Light-Field Parameters	Expired	Expired 4/19/14, to be abandoned
LYT093-PROV	Lytro, Inc.	81719,297	10/18/2012	10/18/2012	None	Configuring Two-Dimensional Image Processing Based on Light-Field Parameters	Expired	Expired 10/18/13
						Configuring Two-Dimensional Image Processing Based on Light-Field Parameters		
LYT093	Lytro, Inc.	14051,263	10/10/2013	2/15/2011	UTIL of LYT093-PROV; CIP of LYT3006	UTIL of LYT093-PROV; CIP of LYT3006	Pending	
						Planar/2D Camera Resolution Using an Aberrated Main Lens		
LYT095-PROV	Lytro, Inc.	81920,708	12/24/2013	12/24/2013	None	Photonic Camera Resolution	Expired	Expired 12/24/14
LYT095	Lytro, Inc.	14573,661	12/17/2014	12/24/2013	UTIL of LYT095-PROV, LYT180-PROV	Photonic Camera Resolution	Issued	Issued as 9,392,163 on 7/12/16

PATENT ASSIGNMENT  
SCHEDULE A-6

Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
LYT095PCT	Lytro, Inc.	PCT/US14/70860	12/17/2014	12/24/2013	PCT of LYT095-PROV, LYT150-PROV	Improving Plenoptic Camera Resolution	Expired	Expired 6/24/16
LYT095DE	Lytro, Inc.	112014005866.1	5/4/2016	12/24/2013	Natl phase of LYT095PCT	Improving Plenoptic Camera Resolution	Pending	
LYT095JP	Lytro, Inc.	2016-525068	4/20/2016	12/24/2013	Natl phase of LYT095PCT	Improving Plenoptic Camera Resolution	Issued	Issued as 6226300 on 4/11/17
LYT140-PROV	Lytro, Inc.	61876,377	9/11/2013	9/11/2013	None	Moving, Enabling, and Disabling Micro-lens Array in Light Field Capture Device	Expired	Expired 9/11/14
LYT140	Lytro, Inc.	14460,240	9/9/2014	9/11/2013	UTIL of LYT140-PROV	Light Field Image Capture Device Having 2D Image Capture Mode	Issued	Issued as 9,077,901 on 7/7/16
LYT140-CONT	Lytro, Inc.	14716,655	5/19/2015	9/11/2013	CONT of LYT140	Light Field Image Capture Device Having 2D Image Capture Mode	Issued	Issued as 9,411,122 on 8/29/16
LYT140-CIP	Lytro, Inc.	15203,643	7/6/2016	9/11/2013	CIP of LYT140-CONT	Image Capture Device Having Light Field Image Capture Mode, 2D Image Capture Mode, and Intermediate Capture Mode	Pending	
LYT142	Lytro, Inc.	14302,826	6/12/2014	6/12/2014	None	Depth Determination for Light Field Images	Issued	Issued as 8,988,317 on 3/24/15
LYT143	Lytro, Inc.	14231,144	4/24/2014	4/24/2014	None	Compression of	Issued	Issued as

PATENT ASSIGNMENT  
SCHEDULE A-7

Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Light Field Images		Issued 4/25/17 as 9,628,232
LYT146-DIV	Lytro, Inc.	15/203,683	7/6/2016	4/24/2014	DIV of LYT146	Compression of Light Field Images	Pending	
LYT160-PROV	Lytro, Inc.	01/920,710	12/24/2013	12/24/2013	None	Light Field Aberration Correction	Expired	Expired 12/24/14
LYT160	Lytro, Inc.	14/573,319	12/17/2014	12/24/2013	UTL of LYT095-PROV, LYT160-PROV	Light Field Aberration Correction	Issued	Issued as 9,628,684 on 4/18/17
LYT164	Lytro, Inc.	14/224,783	3/25/2014	3/25/2014	None	High-Quality Post-Rendering Depth Blur	Issued	Issued as 9,305,378 on 4/5/16
LYT166	Lytro, Inc.	14/430,340	9/8/2014	9/8/2014	None	Saturated Pixel Recovery in Light-Field Images	Issued	Issued 4/25/17 as 9,628,232
LYT160DES	Lytro, Inc.	26/489,123	4/16/2014	4/16/2014	None	Electrical Connector with Pin Pattern	Issued	Issued as 9,749,522 on 2/16/16
LYT161	Lytro, Inc.	14/540,922	11/13/2014	11/13/2014	None	Robust Layered Light-Field Rendering	Issued	Issued on 9/13/16 as 9,444,991
LYT165	Lytro, Inc.	14/632,956	2/26/2015	2/26/2015	None	Parallax Source	Abandoned	
LYT170-PROV	Lytro, Inc.	02/030,191	11/14/2014	11/14/2014	None	Automated Animation for Presentation of Light-Field Images	Expired	Expired 11/14/15
LYT169	Lytro, Inc.	15/059,657	3/3/2016	3/3/2016	None	Automatic Microlens Array Artifact Correction for Light-Field Images	Pending	
LYT170	Lytro, Inc.	14/938,796	11/11/2015	11/14/2014	UTIL of LYT170	Automated Animation for Presentation of Images	Pending	

PATENT ASSIGNMENT  
SCHEDULE A-8

Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
LYT190-PROV	Lytro, Inc.	62146,061	4/15/2015	4/15/2015	None	Predictive Light Field Compression	Expired	Expired 4/15/16
LYT190	Lytro, Inc.	15085,048	3/30/2016	4/24/2014	CIP of LYT146, UTIL of LYT190-PROV	Predictive Light Field Compression	Issued	Issued as 9,712,820 on 7/18/17
LYT190-CONT	Lytro, Inc.	15/621,128	6/13/2017	4/24/2014	CONT of LYT190	Predictive Light-Field Compression	Pending	
						Compression and Interactive Playback of Light Field Pictures	Expired	Expired 4/17/16
LYT191-PROV	Lytro, Inc.	62146,917	4/17/2015	4/17/2015	None	Compression and Interactive Playback of Light Field Pictures	Expired	Expired 4/17/16
LYT191	Lytro, Inc.	15/097,152	4/12/2016	4/17/2015	UTIL of LYT191-PROV	Compression and Interactive Playback of Light Field Pictures	Pending	
LYT192-PROV	Lytro, Inc.	62128,978	3/4/2015	3/4/2015	None	Adaptive Fine-Tuning Slider	Expired	Expired 3/4/16
						Multi-Camera System for Capturing Light Field Data	Expired	Expired 12/9/15, do NOT file UTIL
LYT195-PROV	Lytro, Inc.	62089,601	12/9/2014	12/9/2014	None	Light Guided Image Plane Tiled Arrays with Dense Fiber Optic Bundles for High Resolution Image Acquisition	Expired	
LYT198-PROV	Lytro, Inc.	62146,055	4/15/2015	4/15/2015	None	Light Guided Image Plane Tiled Arrays with Dense Fiber Optic Bundles for High Resolution Image Acquisition	Expired	Expired 4/15/16
LYT198	Lytro, Inc.	15/098,674	4/14/2016	4/15/2015	UTIL of LYT198-PROV, LYT229-PROV, LYT233-PROV	Light Guided Image Plane Tiled Arrays with Dense Fiber Optic Bundles for Light-Field and	Pending	

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						High Resolution Image Acquisition		
						Coherent Fiber Array with Dense Fiber Optic Bundles for Light-Field and High Resolution Image Acquisition		
LYT198-CONT	Lytro, Inc.	15/422,372	2/1/2017	4/15/2015	CONT of LYT198	Light Guided Image Plane Tiled Arrays with Dense Fiber Optic Bundles for Light-Field and High Resolution Image Acquisition	Pending	
						PCT of LYT198-PROV, LYT229-PROV, LYT233-PROV	Pending	Issued as 9,858,848 on 1/2/18
LYT198PCT	Lytro, Inc.	PCT/US16/27460	4/14/2016	4/15/2015		Depth-Based Image Blurring	Issued	Issued as 9,858,848 on 1/2/18
LYT202	Lytro, Inc.	14/837,433	8/30/2015	8/30/2015	None	Depth-Based Image Blurring	Issued	Issued as 9,858,848 on 8/2/17
LYT202-CONT	Lytro, Inc.	15/824,574	11/28/2017	6/26/2012	CONT of LYT202, CIP of LYT017-CIP	Depth-Based Image Blurring	Pending	
						Depth-Based Application of Image Effects	Issued	Issued as 9,858,848 on 8/2/17
LYT203	Lytro, Inc.	14/837,435	8/27/2015	8/27/2015	None	Calibration of Light-Field Camera	Issued	Issued as 9,440,276 on 8/16/18
LYT203	Lytro, Inc.	14/834,433	8/15/2015	2/28/2012	CIP of LYT021-CONT	Geometry Via Robust Fitting	Issued	
						Focal Reducer with Controlled Optical Properties for Interchangeable Lens Light-Field	Pending	
LYT216	Lytro, Inc.	15/666,298	8/1/2017	8/1/2017	None		Pending	

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Camera		
LYT217-PROV	Lytro, Inc.	62/146,460	4/16/2015	4/16/2015	None	Capturing Light-Field Volume Image and Video Data Using Tiled Light-Field Cameras	Expired	Expired
LYT217	Lytro, Inc.	15/084,326	3/29/2016	4/15/2015	UTIL of LYT198-PROV, LYT217-PROV	Capturing Light-Field Volume Image and Video Data Using Tiled Light-Field Cameras	Pending	
LYT218	Lytro, Inc.	14/834,924	8/25/2015	8/25/2015	None	Active Illumination for Enhanced Depth Map Generation	Pending	
LYT222-PROV	Lytro, Inc.	62/166,695	6/26/2015	6/26/2015	None	Capturing Light-Field Images with Uneven and/or Incomplete Angular Sampling	Expired	Expired 6/26/16
LYT222	Lytro, Inc.	15/142,565	4/29/2016	5/26/2015	UTIL of LYT222-PROV	Capturing Light-Field Images with Uneven and/or Incomplete Angular Sampling	Pending	
LYT223-PROV	Lytro, Inc.	PCT/US16/00121	4/29/2016	5/26/2015	PCT of LYT222-PROV	Capturing Light-Field Images with Uneven and/or Incomplete Angular Sampling	Expired	Expired 11/26/2017
LYT225	Lytro, Inc.	15/162,426	5/23/2016	4/22/2013	CIP of LYT034	Phase	Pending	

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Detection Autofocus Using Subaperture Images		
						Video Capture, Processing, Calibration, Computational Fiber Artifact Removal, and Light Field Pipeline	Expired	Expired 3/24/17
LYT233-PROV	Lytro, Inc.	62/305,317	3/9/2016	3/9/2016	None	Video Capture, Processing, Calibration, Computational Fiber Artifact Removal, and Light Field Pipeline	Expired	Expired 3/24/17
LYT233	Lytro, Inc.	15/451,831	3/7/2017	4/15/2015	UTIL of LYT233-PROV; CIP of LYT198	High Dynamic Range Light-Field Imaging Pipeline	Pending	
LYT234	Lytro, Inc.	15/150,679	5/10/2016	5/10/2016	None	Hybrid Light-Field Camera	Pending	
LYT235	Lytro, Inc.	15/054,030	2/25/2016	9/11/2013	CIP of LYT140-CONT	Image Capture for Virtual Reality Displays	Expired	Expired 5/24/17
LYT237-PROV	Lytro, Inc.	62/333,637	5/9/2016	5/9/2016	None	Image Capture for Virtual Reality Displays	Expired	Expired 5/24/17
LYT237	Lytro, Inc.	15/582,237	4/28/2017	5/9/2016	UTIL of LYT237-PROV	Immersive Content Framing	Pending	
LYT242	Lytro, Inc.	15/205,494	7/8/2016	7/8/2016	None	Combining Light-Field Data with Active Depth Data for Depth Map Generation	Pending	
LYT248-PROV	Lytro, Inc.	62/359,022	7/6/2016	7/6/2016	None	Combining Light-Field Data with Active Depth Data for Depth Map Generation	Expired	Expired 7/6/17
LYT248	Lytro, Inc.	15/635,894	6/28/2017	7/6/2016	UTIL of LYT248-PROV	Combining Light-Field Data with Active Depth Data for Depth Map Generation	Pending	

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
					PROV; CIP of LYT218; CIP of LYT233	Light-Field Data with Active Depth Data for Depth Map Generation		
						Adaptive Control for Immersive Experience Delivery		
LYT252	Lytro, Inc.	15/590,808	5/9/2017	5/9/2017	None	Using Light-Field Image Data for Background Color Spill Suppression	Pending	
LYT255-PROV	Lytro, Inc.	62/347,734	5/9/2016	5/9/2016	None	Motion Blur for Light-Field Images	Expired	Expired 8/2017
LYT257	Lytro, Inc.	15/372,968	12/8/2016	12/8/2016	None	Motion Blur for Light-Field Images	Pending	Filed without fees or signatures
LYT257-CONT	Lytro, Inc.	15/864,938	1/8/2018	12/8/2016	CONT of LYT257	Four-Dimensional Alpha Map Regeneration	Pending	Expires 3/2018
LYT258-PROV	Lytro, Inc.	62/478,815	3/30/2017	3/30/2017	None	4D Camera Tracking and Optical Stabilization	Pending	
LYT259	Lytro, Inc.	15/703,553	9/13/2017	9/13/2017	None	Vantage Generation and Interactive Playback	Pending	
LYT265	Lytro, Inc.	15/590,841	5/9/2017	5/9/2017	None	Spatial Random Access Enabled Video System with a Three-Dimensional Viewing Volume	Pending	
LYT266	Lytro, Inc.	15/590,877	5/9/2017	4/15/2015	CIP of LYT217	Data Structures and Delivery	Pending	
LYT266-CIP1	Lytro, Inc.	15/706,343	9/15/2017	4/15/2015	CIP of LYT266 CIP of LYT252		Pending	

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Methods for Expediting Virtual Reality Playback		
						Video Compression with Adaptive View-Dependent Lighting Removal		
LYT266-CIP2	Lytro, Inc.	15/832,023	12/5/2017	4/15/2015	CIP of LYT266 CIP of LYT252	Pending		
						Layered Content Delivery for Virtual and Augmented Reality Experiences	Pending	
LYT266-CIP3	Lytro, Inc.	15/729,918	10/11/2017	4/15/2015	CIP of LYT266 CIP of LYT252	Pending		
						Encoding and Decoding Virtual Reality Video	Pending	
LYT266-CIP4	Lytro, Inc.	15/730,096	10/11/2017	4/15/2015	CIP of LYT266 CIP of LYT252	Pending		
						UTIL of LYT237-PROV and LYT248-PROV; CIP of LYT217	Pending	
LYT267	Lytro, Inc.	15/590,951	5/9/2017	4/15/2015	Wedge-Based Light-Field Video Capture	Pending		
						Multi-View Rotoscope Contour Propagation	Expired	Expired 12/31/17
LYT273-PROV	Lytro, Inc.	62/430,048	12/5/2016	12/5/2016	None	Multi-View Rotoscope Contour Propagation	Expired	Expired 12/31/17
						UTIL of LYT273-PROV	Pending	
LYT273	Lytro, Inc.	15/831,770	12/5/2017	12/5/2016	Generating Dolly Zoom Effect Using Light Field Image Data	Pending		
						Streaming Architecture for Light-Field	Pending	Expires 4/3/18
LYT274-PROV	Lytro, Inc.	62/481,038	4/3/2017	4/3/2017	None	Pending		
LYT275-PROV	Lytro, Inc.	62/504,106	5/10/2017	5/10/2017	None	Pending		Expires 5/10/18

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Virtual Reality		
LYT286	Lytro, Inc.	15/605,037	5/25/2017	5/25/2017	None	Multi-View Back-Projection to a Light-Field	Pending	
						Multi-View Scene Segmentation and Propagation		
LYT287	Lytro, Inc.	15/462,752	3/17/2017	6/9/2016	UTIL of LYT255-PROV	Pending		
						Multi-View Scene Segmentation and Propagation		
LYT287PCT	Lytro, Inc.	PCT/US17/35148	5/31/2017	6/9/2016	PCT of LYT287	Pending		Expires 12/31/18
						Stereo Image Generation and Interactive Playback		
LYT304	Lytro, Inc.	15/730,481	10/11/2017	4/15/2015	CIP of LYT265 CIP of LYT266	Pending		
						Interactive Refocusing of Electronic Images		
LYT3000-PROV	Lytro, Inc.	60/873,889	12/11/2006	12/11/2006	None	Expired		
						Interactive Refocusing of Electronic Images		Issued as 8,559,705 on 10/15/13
LYT3000	Lytro, Inc.	11/948,801	11/30/2007	12/11/2006	UTIL of LYT3000-PROV	Issued		
						Interactive Refocusing of Electronic Images		Issued as 8,530,195 on 12/27/13
LYT3000DIV	Lytro, Inc.	14/022,651	9/10/2013	12/11/2006	DIV of LYT3000	Issued		
						System of and Method for Video Refocusing		
LYT3001-PROV	Lytro, Inc.	61/117,621	11/25/2008	11/25/2008	None	Expired		
						System of and Method for Video Refocusing		Issued as 8,570,426 on 10/29/13
LYT3001A	Lytro, Inc.	12/622,655	11/20/2009	11/25/2008	LYT3001-PROV, LYT3002-PROV, LYT3003-PROV	Issued		Reel/frame 023701/0789
LYT3001A-DIV	Lytro, Inc.	14/032,720	6/20/2013	11/25/2006	DIV of	Video Refocusing	Issued	Issued as

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
					LYT3001A	Refocusing		\$,730,380 on 01/24/14
LYT3001A-CONT	Lytro, Inc.	14/273,349	5/8/2014	11/25/2008	CONT of LYT3001A-DIV CONT of LYT3001A-CONT; CIP of LYT3000DIV	Video Refocusing	Pending	
LYT3001A-CONT2	Lytro, Inc.	15/207,110	7/11/2016	11/25/2008	UTL of LYT3001-PROV, LYT3002-PROV, LYT3003-PROV	Video Refocusing	Pending	Issued as \$,279,325 on 10/2/12
					UTL of LYT3001-PROV, LYT3002-PROV, LYT3003-PROV	System and Method for Acquiring, Editing, Generating and Outputting Video Data	Issued	Issued as \$,440,510 on 07/21/13
LYT3001B-DIV	Lytro, Inc.	13/563,513	7/31/2012	11/25/2008	DIV of LYT3001B	Acquiring, Editing, Generating and Outputting Video Data	Issued	Issued as \$,614,704 on 12/24/13
LYT3001B-CONT	Lytro, Inc.	13/867,502	4/22/2013	11/25/2008	CONT of LYT3001B-DIV	System of and Method for Video Refocusing	Issued	Expired 5/25/11, no auth phase per 3/2/11 errata
LYT3001PCT	Lytro, Inc.	PCT/US2009/065306	11/20/2009	11/25/2008	PCT of LYT3001A	Light Field Camera and System, and Methods of Using and Manufacturing Same	Expired	
LYT3002-PROV	Lytro, Inc.	01/120,530	12/8/2008	12/8/2008	None	Light Field Data Acquisition Devices, and Methods of Using and Manufacturing	Expired	Issued as \$,289,440 on 10/10/12
LYT3002	Lytro, Inc.	12/032,979	12/8/2009	12/8/2008	UTL of LYT3002-PROV, LYT3003-PROV	Light Field Data Acquisition Devices, and Methods of Using and Manufacturing	Issued	

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Same		
LYT3002PCT	Lyteq, Inc.	PCT/US2009/067081	12/8/2009	12/8/2008	PCT of LYT3002	Light Field Data Acquisition Devices, and Methods of Using and Manufacturing Same	Expired	Expired 6/6/11
LYT3002CONT	Lyteq, Inc.	13603,275	9/4/2012	12/8/2008	CONT of LYT3002	Light Field Data Acquisition	Issued	Issued as 8,724,014 on 8/13/14
LYT3002CONT2	Lyteq, Inc.	14/244,434	4/3/2014	12/8/2008	CONT of LYT3002CONT	Light Field Data Acquisition	Issued	Issued as 8,978,288 on 3/18/15
LYT3002CONT3	Lyteq, Inc.	14608,502	1/29/2015	12/8/2008	CONT of LYT3002CONT2	Light Field Data Acquisition	Issued	Issued as 9,467,607 on 10/11/16
						Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same		
LYT3003-PROV	Lyteq, Inc.	61179,620	4/19/2009	4/13/2009	None	Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same	Expired	
						Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same		
LYT3003	Lyteq, Inc.	127793,367	2/10/2010	4/13/2009	UTIL. of LYT3003-PROV	Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same	Abandoned	Abandoned in favor of LYT3003CONT
						Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same		
LYT3003PCT	Lyteq, Inc.	PCT/US2010/030015	4/5/2010	4/13/2009	PCT of LYT3003	Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same	Expired	Expired 10/16/11

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						Method of Using, Storing and Communicating Same		
LYT3003CN	Lytro, Inc.	201080004843.9	7/18/2011	4/18/2009	Nat'l phase of LYT3003	Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same	Pending	
LYT3003EP	Lytro, Inc.	EP10764914.7	11/02/2011	4/18/2009	Nat'l phase of LYT3003	Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same	Abandoned	Abandoned
LYT3003HK	Lytro, Inc.	12100734.7	1/26/2012	4/18/2009	Nat'l phase of LYT3003	Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same	Pending	
LYT3003JP	Lytro, Inc.	2012-506066	7/11/2011	4/18/2009	Nat'l phase of LYT3003	Light Field Camera Image, File and Configuration Data, and Method of Using, Storing	Pending	

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
						<b>Title and Communicating Same</b>		
						Light Field Camera Image, File and Configuration Data, and Method of Using, Storing and Communicating Same		
LYT3003CONT	Lyte, Inc.	61464,836	10/31/2012	12/1/2006	CIP of LYT3000; CONT of LYT3003	Abandoned		
						System for Processing Light Field Data and Images, and Method of Using Same	Expired	
LYT3004-PROV	Lyte, Inc.	61170,635	4/19/2009	4/19/2009	None	3D Light Field Camera, Images and Files, and Methods of Using, Operating, and Processing Same	Expired	
LYT3005-PROV	Lyte, Inc.	61170,637	4/19/2009	4/19/2009	None	3D Light Field Camera, Images and Files, and Methods of Using, Operating, and Processing Same	Expired	
LYT3006-PROV	Lyte, Inc.	61466,467	2/20/2010	2/20/2010	None	3D Light Field Camera, Images and Files, and Methods of Using, Operating, Processing and Viewing Same	Issued	Issued as 6,749,628 on 6/10/14
LYT3007-PROV	Lyte, Inc.	61440,863	2/9/2011	2/9/2011	None	Crocity and Techniques for Downsampling Light-Field	Expired	Expired 2/9/12

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Docket #	Holder	Serial No.	Filing Date	Priority Date	Priority Claim	Title	Status	Comments
LYT3007	Lytro, Inc.	13/362,493	4/31/2012	2/9/2011	UTIL. of LYT3007	Downsampling Light-Field Images	Issued	Issued as 8,768,102 on 7/31/14

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RECORDED: 04/02/2019