TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM750045

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Formerly	Execution Date	Entity Type
MKS Instruments, Inc.		08/17/2022	Corporation: MASSACHUSETTS
Newport Corporation		08/17/2022	Corporation: NEVADA
Electro Scientific Industries, Inc.		08/17/2022	Corporation: OREGON

RECEIVING PARTY DATA

Name:	JPMorgan Chase Bank, N.A., as collateral agent
Street Address:	10 South Dearborn Street
Internal Address:	Floor L2N
City:	Chicago
State/Country:	ILLINOIS
Postal Code:	60603
Entity Type:	National Banking Association: UNITED STATES

PROPERTY NUMBERS Total: 103

Property Type	Number	Word Mark
Registration Number:	0635175	ESI
Registration Number:	1117590	ESI
Registration Number:	1431737	ESI
Registration Number:	2405272	ESI
Registration Number:	2259707	SIGMACLEAN
Registration Number:	3187870	VERSITRIM
Registration Number:	5347387	ICEFYRE
Registration Number:	4581802	TALON
Registration Number:	5100670	ASCEND
Registration Number:	3058186	EMPOWER
Registration Number:	3370293	EXCELSIOR
Registration Number:	4330521	EXCELSIOR
Registration Number:	3345264	EXPLORER
Registration Number:	4129651	INSIGHT
Registration Number:	1852963	LOK-TO-CLOCK

OP $2590.00 0635175

Property Type	Number	Word Mark
Registration Number:	2581563	MAI TAI
Registration Number:	3330829	MATISSE
Registration Number:	2191793	MILLENNIA
Registration Number:	1352510	QUANTA-RAY
Registration Number:	4309491	QUASAR
Registration Number:	3481639	SOLSTICE
Registration Number:	4469370	SPIRIT
Registration Number:	4756926	SPIRIT-NOPA
Registration Number:	5114864	SPIRIT-OPA
Registration Number:	2780305	SPITFIRE
Registration Number:	2130320	VELOCITY
Registration Number:	6073157	OPTOFLASH
Registration Number:	5125087	GUARDIAN
Registration Number:	3294809	IQ DAMPING TECHNOLOGY
Registration Number:	3190279	SMARTTABLE
Registration Number:	2099353	ULTIMA
Registration Number:	1909809	STABILIFE
Registration Number:	1685763	V
Registration Number:	2078888	ILX LIGHTWAVE
Registration Number:	2622866	ORIEL
Registration Number:	5387094	PICOLIS
Registration Number:	4263476	DATUM
Registration Number:	2321689	DYNAMYX
Registration Number:	3926012	HYBRYX
Registration Number:	1687057	NEW FOCUS
Registration Number:	2733651	
Registration Number:	1558877	NEWPORT
Serial Number:	88533577	NEWPORT
Registration Number:	2904099	NEWPORT RESOURCE
Registration Number:	1654202	S
Registration Number:	5397058	S
Registration Number:	5115053	SPECTRA-PHYSICS
Registration Number:	4330520	S SPECTRA-PHYSICS
Registration Number:	1661478	SPECTRA-PHYSICS
Registration Number:	5973693	SPECTRA-PHYSICS
Registration Number:	3341575	AIRGARD
Registration Number:	1524257	ASTEX
Registration Number:	2237573	ASTRON

Property Type	Number	Word Mark
Registration Number:	1197782	BARATRON
Serial Number:	90026379	CLEANLINE
Registration Number:	1954345	CONVECTRON
Registration Number:	1686134	ENI
Registration Number:	1686133	ENI
Registration Number:	2542586	GRANVILLE-PHILLIPS
Registration Number:	2378581	HPS
Registration Number:	2759890	I-BARATRON
Registration Number:	1992094	I-MAG
Registration Number:	2403559	LIQUOZON
Registration Number:	2293275	MICRO-ION
Registration Number:	2709156	MINI-CONVECTRON
Registration Number:	3229845	MKS
Registration Number:	3336530	MKS
Registration Number:	1317863	MKS
Registration Number:	2697197	MKS
Registration Number:	1309825	M K S
Registration Number:	2697220	MKS TECHNOLOGY FOR PRODUCTIVITY
Registration Number:	2082429	MKS INSTRUMENTS
Registration Number:	1372214	MKS INSTRUMENTS, INC.
Registration Number:	5095640	MKSINST
Registration Number:	2477990	NOVA
Registration Number:	3283554	O3MEGA
Registration Number:	2562383	OPTIMA
Registration Number:	4734534	PARAGON
Registration Number:	2641184	PR INDEX
Registration Number:	3134363	R*EVOLUTION
Registration Number:	2309951	RESIST-TORR
Registration Number:	2758997	SEMOZON
Registration Number:	2399419	SMARTMATCH
Registration Number:	2726193	SMARTPOWER
Registration Number:	2610410	SPECTRUM
Registration Number:	1838365	STABIL-ION
Registration Number:	3172300	SUREPOWER
Registration Number:	6006625	SURROUND THE CHAMBER
Registration Number:	5858440	SURROUND THE WORKPIECE
Registration Number:	2902263	TOOLWEB
Registration Number:	2759679	TRU-FLO

Property Type	Number	Word Mark
Registration Number:	1661469	VACUUM SENTRY
Registration Number:	4302521	VQM
Registration Number:	4405626	PRECISIVE
Registration Number:	2472686	VI PROBE
Serial Number:	90479959	ETRAC
Serial Number:	90479968	EDGE
Registration Number:	1759090	TSUNAMI
Registration Number:	1200245	WAFERMARK
Registration Number:	3007832	CHIPTRIM
Serial Number:	97424180	OPTIMIZE THE INTERCONNECT
Serial Number:	97463375	MKS
Serial Number:	97463381	MKS

CORRESPONDENCE DATA

Fax Number:

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: 212.318.6000
Email: JeffreyNegron@PaulHastings.com
Correspondent Name: Jeffrey Negron
Address Line 1: Paul Hastings LLP
Address Line 2: 200 Park Avenue
Address Line 4: New York, NEW YORK 10166

NAME OF SUBMITTER:	Jeffrey M. Negron
SIGNATURE:	/s/ Jeffrey M. Negron
DATE SIGNED:	08/19/2022

Total Attachments: 81
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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This **INTELLECTUAL PROPERTY SECURITY AGREEMENT** (as amended, amended and restated, supplemented or otherwise modified from time to time, the "IP Security Agreement") dated August 17, 2022, is among the Persons listed on the signature pages hereof (collectively, the "Grantors") and JPMorgan Chase Bank, N.A., as collateral agent (the "Collateral Agent") for the Secured Parties (as defined in the Credit Agreement referred to below).

WHEREAS, MKS INSTRUMENTS, INC., a Massachusetts corporation (the "Parent Borrower") and certain Subsidiaries of the Parent Borrower from time to time party thereto have entered into the Credit Agreement dated as of August 17, 2022 (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Credit Agreement"), with the Lenders, the L/C Issuers and the Administrative Agent and the other parties thereto. Capitalized terms defined in the Credit Agreement or in the Security Agreement (as defined below) and not otherwise defined herein are used herein as defined in the Credit Agreement or the Security Agreement, as the case may be (and in the event of a conflict, the applicable definition shall be the one given to such term in the Security Agreement).

WHEREAS, as a condition precedent to the making of the Loans by the Lenders from time to time and the issuance of Letters of Credit by the L/C Issuers from time to time, the entry into Secured Hedge Agreements by the Hedge Banks from time to time and the entry into Secured Cash Management Agreements by the Cash Management Banks from time to time, each Grantor has executed and delivered that certain Security Agreement dated August 17, 2022 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement"), among the Grantors from time to time party thereto and the Collateral Agent.

WHEREAS, under the terms of the Security Agreement, the Grantors have granted to the Collateral Agent, for the benefit of the Secured Parties, a security interest in, among other property, certain intellectual property of the Grantors, and have agreed thereunder to execute this IP Security Agreement for recording with the USPTO and/or the USCO, as applicable.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Grantor agrees as follows:

Section 1. Grant of Security. Each Grantor hereby collaterally assigns and pledges to the Collateral Agent (and its permitted successors and permitted assigns), for the benefit of the Secured Parties, and each Grantor hereby grants to the Collateral Agent (and its permitted successors and permitted assigns), for the benefit of the Secured Parties, a security interest in all of such Grantor's right, title and interest in and to the following, whether now owned or hereafter acquired by the undersigned (the "Collateral"):

(i) all patents and patent applications, including, without limitation, those set forth in Schedule A hereto (the "Patents");

(ii) all trademark and service mark registrations and applications, including, without limitation, those set forth in Schedule B hereto (provided that no security interest shall be granted in United States intent-to-use trademark applications to the extent that, and so long as creation of a security interest therein or the assignment thereof would result in the loss of any material rights therein), together with the goodwill symbolized thereby (the "Trademarks");

(iii) all copyrights, whether registered or unregistered, including, without limitation, the copyright registrations and applications and exclusive copyright licenses set forth in Schedule C hereto (the "Copyrights");

(iv) all reissues, divisions, continuations, continuations-in-part, extensions, renewals and reexaminations of any of the foregoing, all rights in the foregoing provided by international treaties or conventions, all rights corresponding thereto throughout the world and all other rights of any kind whatsoever of such Grantor accruing thereunder or pertaining thereto;

(v) any and all claims for damages and injunctive relief for past, present and future infringement, dilution, misappropriation, violation, misuse or breach with respect to any of the foregoing, with the right, but not the obligation, to sue for and collect, or otherwise recover, such damages; and

(vi) any and all proceeds of, collateral for, income, royalties and other payments now or hereafter due and payable with respect to, and supporting obligations relating to, any and all of the Collateral of or arising from any of the foregoing;

provided that notwithstanding anything to the contrary contained in the foregoing clauses (i) through (vi), the security interest created hereby shall not extend to, and the term "Collateral" shall not include, any Excluded Assets.

Section 2. Security for Obligations. The grant of a security interest in, the Collateral by each Grantor under this IP Security Agreement secures the payment of all Secured Obligations of such Grantor now or hereafter existing under or in respect of the Secured Documents (as such Secured Documents may be amended, amended and restated, supplemented, replaced, refinanced or otherwise modified from time to time (including any increases of the principal amount outstanding thereunder)), whether direct or indirect, absolute or contingent, and whether for principal, reimbursement obligations, interest, premiums, penalties, fees, indemnifications, contract causes of action, costs, expenses or otherwise. Without limiting the generality of the foregoing, this IP Security Agreement secures, as to each Grantor, the payment of all amounts that constitute part of the Secured Obligations that would be owed by such Grantor to any Secured Party under the Secured Documents but for the fact that they are unenforceable or not allowable due to the existence of a bankruptcy, or reorganization or similar proceeding involving a Loan Party.

Section 3. Recordation. Each Grantor authorizes and requests that the Register of Copyrights, the Commissioner for Patents and the Commissioner for Trademarks record this IP Security Agreement.

Section 4. Execution in Counterparts. This IP Security Agreement may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. Delivery of an executed counterpart of a signature page to this IP Security Agreement by telecopier or in .pdf or similar format by electronic mail shall be effective as delivery of an original executed counterpart of this IP Security Agreement.

Section 5. Grants, Rights and Remedies. This IP Security Agreement has been entered into in conjunction with the provisions of the Security Agreement. Each Grantor does hereby acknowledge and confirm that the grant of the security interest hereunder to, and the rights and remedies of, the Collateral Agent with respect to the Collateral are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this IP Security Agreement and the terms of the Security Agreement, the terms of the Security Agreement shall govern.

Section 6. Governing Law; Jurisdiction; Etc.

(a) THIS IP SECURITY AGREEMENT AND ANY CLAIMS, CONTROVERSY, DISPUTE OR CAUSE OF ACTION (WHETHER IN CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS IP SECURITY AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

(b) EACH PARTY HERETO IRREVOCABLY AND UNCONDITIONALLY SUBMITS, FOR ITSELF AND ITS PROPERTY, TO THE EXCLUSIVE JURISDICTION OF THE COURTS OF THE STATE OF NEW YORK SITTING IN NEW YORK CITY IN THE BOROUGH OF MANHATTAN AND OF THE UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF NEW YORK SITTING IN THE BOROUGH OF MANHATTAN, AND ANY APPELLATE COURT FROM ANY THEREOF, IN ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS IP SECURITY AGREEMENT, OR FOR RECOGNITION OR ENFORCEMENT OF ANY JUDGMENT, AND EACH OF THE PARTIES HERETO IRREVOCABLY AND UNCONDITIONALLY AGREES THAT ALL CLAIMS IN RESPECT OF ANY SUCH ACTION OR PROCEEDING MAY BE HEARD AND DETERMINED IN SUCH NEW YORK STATE COURT OR, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, IN SUCH FEDERAL COURT. EACH OF THE PARTIES HERETO AGREES THAT A FINAL JUDGMENT IN ANY SUCH ACTION OR PROCEEDING SHALL BE CONCLUSIVE AND MAY BE ENFORCED IN OTHER JURISDICTIONS BY SUIT ON THE JUDGMENT OR IN ANY OTHER MANNER PROVIDED BY LAW. NOTHING IN THIS IP SECURITY AGREEMENT SHALL AFFECT ANY RIGHT THAT ANY AGENT, ANY LENDER OR ANY L/C ISSUER MAY OTHERWISE HAVE TO BRING ANY ACTION OR PROCEEDING RELATING TO THIS AGREEMENT OR THE RECOGNITION OR ENFORCEMENT OF ANY JUDGMENT AGAINST ANY LOAN PARTY OR ITS PROPERTIES IN THE COURTS OF ANY JURISDICTION.

(c) EACH PARTY HERETO IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF VENUE OF ANY ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THIS IP SECURITY AGREEMENT IN ANY COURT REFERRED TO IN PARAGRAPH (b) OF THIS SECTION. EACH OF THE PARTIES HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE DEFENSE OF AN INCONVENIENT FORUM TO THE MAINTENANCE OF SUCH ACTION OR PROCEEDING IN ANY SUCH COURT.

(d) EACH PARTY HERETO IRREVOCABLY CONSENTS TO SERVICE OF PROCESS IN THE MANNER PROVIDED FOR NOTICES IN SECTION 10.02 OF THE CREDIT AGREEMENT. NOTHING IN THIS IP SECURITY AGREEMENT WILL AFFECT THE RIGHT OF ANY PARTY HERETO TO SERVE PROCESS IN ANY OTHER MANNER PERMITTED BY APPLICABLE LAW.

(e) EACH PARTY TO THIS IP SECURITY AGREEMENT HEREBY EXPRESSLY WAIVES ANY RIGHT TO TRIAL BY JURY OF ANY CLAIM, DEMAND, ACTION OR CAUSE OF ACTION ARISING UNDER THIS IP SECURITY AGREEMENT OR IN ANY WAY CONNECTED WITH OR RELATED OR INCIDENTAL TO THE DEALINGS OF THE PARTIES HERETO OR ANY OF THEM WITH RESPECT TO THIS IP SECURITY AGREEMENT, OR THE TRANSACTIONS RELATED THERETO, IN EACH CASE

WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER FOUNDED IN CONTRACT OR TORT OR OTHERWISE; AND EACH PARTY HEREBY AGREES AND CONSENTS THAT ANY SUCH CLAIM, DEMAND, ACTION OR CAUSE OF ACTION SHALL BE DECIDED BY COURT TRIAL WITHOUT A JURY, AND THAT ANY PARTY TO THIS IP SECURITY AGREEMENT MAY FILE AN ORIGINAL COUNTERPART OR A COPY OF THIS SECTION 6(e) WITH ANY COURT AS WRITTEN EVIDENCE OF THE CONSENT OF THE SIGNATORIES HERETO TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY.

IN WITNESS WHEREOF, each Grantor and the Collateral Agent have caused this IP Security Agreement to be duly executed and delivered by its officer thereunto duly authorized as of the date first written above.

MKS INSTRUMENTS, INC.

By: _____

Name: Seth H. Bagshaw
Title: Senior Vice President, Chief Financial Officer and Treasurer

NEWPORT CORPORATION

By: _____

Name: Seth H. Bagshaw
Title: President and Treasurer

ELECTRO SCIENTIFIC INDUSTRIES, INC.

By: _____

Name: Seth H. Bagshaw

Title: President and Treasurer

[Signature Page to Intellectual Property Security Agreement]

JPMORGAN CHASE BANK, N.A.
as Collateral Agent

By: _____

Name: Timothy Lee
Title: Executive Director

Schedule A

Patents

Issued Patents and Patent Applications:

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
E301-P1	Electro Scientific Industries, Inc.	REDUCING POSITIONAL SENSITIVITY OF LASER BEAM ON PHOTODETECTOR USING LENS WITH PTFE DIFFUSER	Filed	63/245631	9/17/2021		
E248-US2	Electro Scientific Industries, Inc.	LASER PROCESSING APPARATUS, METHODS OF LASER-PROCESSING WORKPIECES AND RELATED ARRANGEMENTS	Published	17/354680	6/22/2021		
E295-P1	Electro Scientific Industries, Inc.	Profiling, characterization, and calibration of AOD "chirped" beams with the Beam-Characterization-Tool	Filed	63/213075	6/21/2021		
E181-US3	Electro Scientific Industries, Inc.	PHASED ARRAY STEERING FOR LASER BEAM POSITIONING SYSTEMS	Published	17/326664	5/21/2021		
E300-P1	Electro Scientific Industries, Inc.	Roller Contact with Reduced Contact Resistance Variation	Filed	63/178108	4/22/2021		
E299-P1	Electro Scientific Industries, Inc.	A Method For Direct From Roll Chuck Based Roll To Roll Processing	Filed	63/157229	3/5/2021		
E253-US2	Electro Scientific Industries, Inc.	LASER-SEEDING FOR ELECTRO-CONDUCTIVE PLATING	Filed	17/185259	2/25/2021		
E283-US1	Electro Scientific Industries, Inc.	LASER PROCESSING APPARATUS, METHODS OF OPERATING THE SAME, AND METHODS OF PROCESSING WORKPIECES USING THE SAME	Filed	17/599756	5/29/2020		
E238-US3	Electro Scientific Industries, Inc.	MULTI-AXIS MACHINE TOOL AND METHODS OF CONTROLLING THE SAME	Issued	16/854207	4/21/2020	11185957	11/30/2021
E268-US1	Electro Scientific Industries, Inc.	PHASED-ARRAY BEAM STEERING FOR MATERIALS PROCESSING	Filed	17/290198	2/4/2020		

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
E275-US1	Electro Scientific Industries, Inc.	LASER PROCESSING APPARATUS, METHODS OF OPERATING THE SAME, AND METHODS OF PROCESSING WORKPIECES USING THE SAME	Filed	17/276736	1/3/2020		
E282-US1	Electro Scientific Industries, Inc.	FRAME AND EXTERIOR SHROUDING FOR LASER PROCESSING SYSTEM	Published	17/272611	10/15/2019		
E279-US1	Electro Scientific Industries, Inc.	SYSTEMS AND METHODS FOR USE IN HANDLING COMPONENTS	Published	17/273695	10/14/2019		
E280-US1	Electro Scientific Industries, Inc.	SYSTEMS AND METHODS FOR DRILLING VIAS IN TRANSPARENT MATERIALS	Published	17/272155	10/2/2019		
SR-215-US7	Electro Scientific Industries, Inc.	LASER PROCESSING SYSTEMS AND METHODS FOR BEAM DITHERING AND SKIVING	Published	16/557189	8/30/2019		
SR-215-US6	Electro Scientific Industries, Inc.	ACOUSTO-OPTIC DEFLECTOR APPLICATIONS IN LASER PROCESSING OF DIELECTRIC OR OTHER MATERIALS	Published	16/505422	7/8/2019		
E273-US1	Electro Scientific Industries, Inc.	LASER PROCESSING APPARATUS INCORPORATING A WORKPIECE HANDLING APPARATUS AND METHODS OF OPERATING THE SAME	Filed	17/047254	6/4/2019		
E281-US1	Electro Scientific Industries, Inc.	LASER PROCESSING MACHINE	Issued	29/666312	10/11/2018	D868854	12/3/2019
E272-US1	Electro Scientific Industries, Inc.	ACOUSTO-OPTIC SYSTEM HAVING PHASE-SHIFTING REFLECTOR	Published	16/636605	9/20/2018		
E270-US1	Electro Scientific Industries, Inc.	NON-CONTACT HANDLER AND METHOD OF HANDLING WORKPIECES USING THE SAME	Published	16/621630	7/20/2018	11254014	2/22/2022
E271-US1	Electro Scientific Industries, Inc.	OPTICALLY CONTACTED ACOUSTO OPTIC DEVICE AND METHOD OF MAKING THE SAME	Published	16/619875	6/19/2018		

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
E238-US2	Electro Scientific Industries, Inc.	MULTI-AXIS MACHINE TOOL AND METHODS OF CONTROLLING THE SAME	Issued	15/966615	4/30/2018	10654141	5/19/2020
E265-US1	Electro Scientific Industries, Inc.	MULTI-AXIS MACHINE TOOL AND METHODS OF CONTROLLING THE SAME	Published	16/499511	4/30/2018		
E262-US1	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR EXTENDING OPTICS LIFETIME IN LASER PROCESSING APPARATUS	Published	16/464551	12/28/2017	11260472	3/1/2022
E181-US2	Electro Scientific Industries, Inc.	PHASED ARRAY STEERING FOR LASER BEAM POSITIONING SYSTEMS	Issued	15/691344	8/30/2017	11045899	6/29/2021
E253-US1	Electro Scientific Industries, Inc.	LASER-SEEDING FOR ELECTRO-CONDUCTIVE PLATING	Issued	16/067693	3/31/2017	10957615	3/23/2021
E252-US1	Electro Scientific Industries, Inc.	SYSTEM ISOLATION AND OPTICS BAY SEALING	Issued	15/780072	1/26/2017	11033982	6/15/2021
E248-US1	Electro Scientific Industries, Inc.	LASER PROCESSING APPARATUS, METHODS OF LASER-PROCESSING WORKPIECES AND RELATED ARRANGEMENTS	Issued	15/750140	9/8/2016	11077526	8/3/2021
E249-US1	Electro Scientific Industries, Inc.	LASER SCAN SEQUENCING AND DIRECTION WITH RESPECT TO GAS FLOW	Issued	15/233364	8/10/2016	10328529	6/25/2019
E238-US1	Electro Scientific Industries, Inc.	SYSTEMS AND METHODS FOR ENABLING AUTOMATED MOTION CONTROL OF A TOOL IN A MULTI-AXIS MACHINE TOOL	Issued	15/188496	6/21/2016	9981357	5/29/2018
E256-US1	Electro Scientific Industries, Inc.	COMPONENT CARRIER PLATE	Issued	29/564998	5/17/2016	D873782	1/28/2020
E246-US1	Electro Scientific Industries, Inc.	FAST BEAM MANIPULATION FOR CROSS-AXIS MICRO-MACHINING	Issued	15/055037	2/26/2016	10507544	12/17/2019
E242-US1	Electro Scientific Industries, Inc.	ADAPTIVE PART PROFILE CREATION VIA INDEPENDENT SIDE MEASUREMENT WITH ALIGNMENT FEATURES	Issued	14/962732	12/8/2015	9983562	5/29/2018
SR-176-US4	Electro Scientific Industries, Inc.	METHODS AND SYSTEMS FOR LASER PROCESSING	Issued	14/707950	5/8/2015	10118252	11/6/2018

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
		CONTINUOUSLY MOVING SHEET MATERIAL					
103764-US1	Electro Scientific Industries, Inc.	FIVE AXIS OPTICAL INSPECTION SYSTEM	Issued	14/705056	5/6/2015	9939624	4/10/2018
E208-US1	Electro Scientific Industries, Inc.	LASER EMISSION-BASED CONTROL OF BEAM POSITIONER	Issued	14/214787	3/15/2014	9527159	12/27/2016
E181-US1	Electro Scientific Industries, Inc.	PHASED ARRAY STEERING APPARATUS FOR LASER BEAM POSITIONING SYSTEMS	Issued	14/214649	3/14/2014	9776277	10/3/2017
E191-US1	Electro Scientific Industries, Inc.	LASER SYSTEMS AND METHODS FOR AOD ROUT PROCESSING	Issued	14/211115	3/14/2014	9931713	4/3/2018
E193-US1	Electro Scientific Industries, Inc.	LASER SYSTEMS AND METHODS FOR AOD TOOL SETTLING FOR AOD TRAVEL REDUCTION	Issued	14/211162	3/14/2014	9724782	8/8/2017
E166-US1	Electro Scientific Industries, Inc.	LASER PULSE ENERGY CONTROL SYSTEMS AND METHODS	Issued	14/151420	1/9/2014	9486877	11/8/2016
E174-US1	Electro Scientific Industries, Inc.	SYSTEMS AND METHODS FOR HANDLING COMPONENTS	Issued	14/147867	1/6/2014	9636713	5/2/2017
GSI-0030-US2	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR ADAPTIVELY CONTROLLING A LASER-BASED MATERIAL PROCESSING PROCESS AND METHOD AND SYSTEM FOR QUALIFYING SAME	Issued	14/093790	12/2/2013	9383732	7/5/2016
GSI-0046-US2	Electro Scientific Industries, Inc.	SYSTEMS AND METHODS FOR PROVIDING TEMPERATURE STABILITY OF ACOUSTO-OPTIC BEAM DEFLECTORS AND ACOUSTO-OPTIC MODULATORS DURING USE	Issued	14/056999	10/18/2013	9036247	5/19/2015
SR-215-US4	Electro Scientific Industries, Inc.	ACOUSTO-OPTIC DEFLECTOR APPLICATIONS IN LASER PROCESSING OF DIELECTRIC OR OTHER MATERIALS	Issued	13/850168	3/25/2013	10391585	8/27/2019

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
E116-US2	Electro Scientific Industries, Inc.	METHOD AND APPARATUS FOR LASER SINGULATION OF BRITTLE MATERIALS	Issued	13/774244	2/22/2013	8679948	3/25/2014
E147-US1	Electro Scientific Industries, Inc.	METHOD AND APPARATUS FOR COLLECTING MATERIAL PRODUCED BY PROCESSING WORKPIECES	Issued	13/558571	7/26/2012	9259802	2/16/2016
GSI-0046-US1	Electro Scientific Industries, Inc.	SYSTEMS AND METHODS FOR PROVIDING TEMPERATURE STABILITY OF ACOUSTO-OPTIC BEAM DEFLECTORS AND ACOUSTO-OPTIC MODULATORS DURING USE	Issued	13/542177	7/5/2012	8593722	11/26/2013
E142-US1	Electro Scientific Industries, Inc.	METHOD AND APPARATUS FOR PROCESSING WORKPIECES	Issued	13/482248	5/29/2012	9266192	2/23/2016
SR-191-US2	Electro Scientific Industries, Inc.	ON-THE-FLY MANIPULATION OF SPOT SIZE AND CUTTING SPEED FOR REAL-TIME CONTROL OF TRENCH DEPTH AND WIDTH IN LASER OPERATIONS	Issued	13/399856	2/17/2012	8723076	5/13/2014
YB-217-US1	Electro Scientific Industries, Inc.	DRILLING HOLES WITH MINIMAL TAPER IN CURED SILICONE	Issued	13/331472	12/20/2011	9289858	3/22/2016
SR-215-US3	Electro Scientific Industries, Inc.	LASER PROCESSING SYSTEMS AND METHODS FOR BEAM DITHERING AND SKIVING	Issued	13/279993	10/24/2011	8847113	9/30/2014
YB-215-US1	Electro Scientific Industries, Inc.	PROBE MODULE WITH INTERLEAVED SERPENTINE TEST CONTACTS FOR ELECTRONIC DEVICE TESTING	Issued	13/163516	6/17/2011	8970238	3/3/2015
E152-US1	Electro Scientific Industries, Inc.	METHOD AND APPARATUS FOR DRILLING USING A SERIES OF LASER PULSES	Issued	13/100995	5/4/2011	8816246	8/26/2014
SR-221-US1	Electro Scientific Industries, Inc.	LASER DIRECT ABLATION WITH PICOSECOND LASER PULSES AT HIGH PULSE REPETITION FREQUENCIES	Issued	13/076754	3/31/2011	8648277	2/11/2014

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-176-US3	Electro Scientific Industries, Inc.	METHODS AND SYSTEMS FOR GENERATING PULSE TRAINS FOR MATERIAL PROCESSING	Issued	12/907768	10/19/2010	8208506	6/26/2012
SR-215-US1	Electro Scientific Industries, Inc.	ACOUSTO-OPTIC DEFLECTOR APPLICATIONS IN LASER PROCESSING OF DIELECTRIC OR OTHER MATERIALS	Issued	12/790082	5/28/2010	8404998	3/26/2013
SR-215-US2	Electro Scientific Industries, Inc.	LASER PROCESSING SYSTEMS USING THROUGH-THE-LENS ALIGNMENT OF A LASER BEAM WITH A TARGET FEATURE	Issued	12/790093	5/28/2010	8288679	10/16/2012
E116-US1	Electro Scientific Industries, Inc.	METHOD AND APPARATUS FOR LASER SINGULATION OF BRITTLE MATERIALS	Issued	12/753367	4/2/2010	8383984	2/26/2013
GSI-0016B-US10	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR HIGH-SPEED, PRECISE MICROMACHINING AN ARRAY OF DEVICES	Issued	12/644832	12/22/2009	7871903	1/18/2011
SR-120-US2	Electro Scientific Industries, Inc.	HIGH ENERGY PULSE SUPPRESSION METHOD	Issued	12/605989	10/26/2009	8081668	12/20/2011
102854-US2	Electro Scientific Industries, Inc.	SYSTEM AND METHOD TO ILLUMINATE AND IMAGE THE INSIDE DIAMETER OF A STENT	Issued	12/589063	10/16/2009	9261465	2/16/2016
SR-135-US2	Electro Scientific Industries, Inc.	METHOD FOR INCREASING THROUGHPUT OF SOLDER MASK REMOVAL BY MINIMIZING THE NUMBER OF CLEANING PULSES	Issued	12/581008	10/16/2009	8415586	4/9/2013
GSI-0016B-US9	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR HIGH-SPEED PRECISE LASER TRIMMING AND SCAN LENS FOR USE THEREIN	Issued	12/499123	7/8/2009	8329600	12/11/2012
YB-202-US1	Electro Scientific Industries, Inc.	ROTARY FLEXURE AND AIR BEARING SUPPORT FOR ROTARY INDEXING SYSTEM	Issued	12/477505	6/3/2009	8132966	3/13/2012
YB-181-US2	Electro Scientific Industries, Inc.	AUTOMATED CONTACT ALIGNMENT TOOL	Issued	12/465089	5/13/2009	7750653	7/6/2010
E105-US1	Electro Scientific Industries, Inc.	METHOD AND APPARATUS FOR LASER MACHINING	Issued	12/413531	3/28/2009	8350187	1/8/2013

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-214-US1	Electro Scientific Industries, Inc.	LASER MICROMACHINING WITH TAILORED BURSTS OF SHORT LASER PULSES	Issued	12/413350	3/27/2009	10307862	6/4/2019
YB-201-US1	Electro Scientific Industries, Inc.	MINIMIZING THERMAL EFFECT DURING MATERIAL REMOVAL USING A LASER	Issued	12/413084	3/27/2009	8729427	5/20/2014
YB-200-US1	Electro Scientific Industries, Inc.	MANUFACTURE OF HIGH STRENGTH, HIGH DENSITY CARRIER PLATE	Issued	12/389034	2/19/2009	8383029	2/26/2013
SR-087-US5	Electro Scientific Industries, Inc.	LASER SEGMENTED CUTTING, MULTI-STEP CUTTING, OR BOTH	Issued	12/351562	1/9/2009	R43605	8/28/2012
SR-087-US4	Electro Scientific Industries, Inc.	LASER SEGMENTED CUTTING	Issued	12/350767	1/8/2009	RE43487	6/26/2012
SR-204-US1	Electro Scientific Industries, Inc.	CONTROLLING DYNAMIC AND THERMAL LOADS ON LASER BEAM POSITIONING SYSTEM TO ACHIEVE HIGH-THROUGHPUT LASER PROCESSING OF WORKPIECE FEATURES	Issued	12/330418	12/8/2008	8680430	3/25/2014
E160-US1	Electro Scientific Industries, Inc.	LASER SYSTEMS WITH DOPED FIBER COMPONENTS	Issued	12/263378	10/31/2008	8508843	8/13/2013
GSI-0025-US1	Electro Scientific Industries, Inc.	LINK PROCESSING WITH HIGH SPEED BEAM DEFLECTION	Issued	12/233476	9/18/2008	8269137	9/18/2012
GSI-0042-US1	Electro Scientific Industries, Inc.	SYSTEM AND METHOD FOR AUTOMATIC LASER BEAM ALIGNMENT	Issued	12/192915	8/15/2008	8379204	2/19/2013
SR-203-US1	Electro Scientific Industries, Inc.	AUTOMATIC RECIPE MANAGEMENT FOR LASER PROCESSING A WORK PIECE	Issued	12/164698	6/30/2008	8173931	5/8/2012
YB-180-US1	Electro Scientific Industries, Inc.	LASER MICRO-MACHINING SYSTEM WITH POST-SCAN LENS DEFLECTION	Issued	12/111616	4/29/2008	8288684	10/16/2012
SR-142-US1	Electro Scientific Industries, Inc.	METHODS AND SYSTEMS FOR DYNAMICALLY GENERATING TAILORED LASER PULSES	Issued	12/060076	3/31/2008	8526473	9/3/2013

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-191-US1	Electro Scientific Industries, Inc.	ON-THE-FLY MANIPULATION OF SPOT SIZE AND CUTTING SPEED FOR REAL-TIME CONTROL OF TRENCH DEPTH AND WIDTH IN LASER OPERATIONS	Issued	12/060043	3/31/2008	8124911	2/28/2012
E134-US2	Electro Scientific Industries, Inc.	METHOD FOR DETECTING PARTICULATE CONTAMINATION UNDER A WORKPIECE	Issued	12/052475	3/20/2008	8515701	8/20/2013
SR-176-US1	Electro Scientific Industries, Inc.	METHODS AND SYSTEMS FOR GENERATING PULSE TRAINS FOR MATERIAL PROCESSING	Issued	11/949534	12/3/2007	7817685	10/19/2010
SR-176-US2	Electro Scientific Industries, Inc.	METHODS AND SYSTEMS FOR LASER PROCESSING CONTINUOUSLY MOVING SHEET MATERIAL	Issued	11/949582	12/3/2007	9029731	5/12/2015
GSI-0014-US7	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR MACHINE VISION-BASED FEATURE DETECTION AND MARK VERIFICATION IN A WORKPIECE OR WAFER MARKING SYSTEM	Issued	11/948425	11/30/2007	R41924	11/16/2010
YB-181-US1	Electro Scientific Industries, Inc.	AUTOMATED CONTACT ALIGNMENT TOOL	Issued	11/838706	8/14/2007	7557594	7/7/2009
SR-118-US2	Electro Scientific Industries, Inc.	METHODS AND SYSTEMS FOR DECREASING THE EFFECTIVE PULSE REPETITION OF A LASER	Issued	11/758497	6/5/2007	7608800	10/27/2009
SR-181-US1	Electro Scientific Industries, Inc.	SYSTEMS AND METHODS FOR PROCESSING SEMICONDUCTOR STRUCTURES USING LASER PULSES LATERALLY DISTRIBUTED IN A SCANNING WINDOW	Issued	11/757232	6/1/2007	8026158	9/27/2011
YB-161-US1	Electro Scientific Industries, Inc.	METHOD AND APPARATUS FOR AUTOMATICALLY PROCESSING MULTIPLE APPLICATIONS IN A PREDETERMINED ORDER TO AFFECT MULTI-APPLICATION SEQUENCING	Issued	11/754254	5/25/2007	7437207	10/14/2008

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
YB-171-US1	Electro Scientific Industries, Inc.	ADJUSTABLE FORCE ELECTRICAL CONTACTOR	Issued	11/740480	4/26/2007	7839138	11/23/2010
T200-US1	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR A HIGH POWER LOW-COHERENCE PULSED LIGHT SOURCE	Issued	11/737044	4/18/2007	7457329	11/25/2008
GSI-0012-US2	Electro Scientific Industries, Inc.	FLEXIBLE SCAN FIELD	Issued	11/695721	4/3/2007	7402774	7/22/2008
102854-US1	Electro Scientific Industries, Inc.	SYSTEM AND METHOD TO ILLUMINATE AND IMAGE THE INSIDE DIAMETER OF A STENT	Issued	11/714447	3/6/2007	7619646	11/17/2009
GSI-0016-US14	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR HIGH-SPEED PRECISE LASER TRIMMING AND SCAN LENS FOR USE THEREIN	Issued	11/657810	1/25/2007	7563695	7/21/2009
SR-084-US3	Electro Scientific Industries, Inc.	ON-THE-FLY LASER BEAM PATH ERROR CORRECTION FOR SPECIMEN TARGET LOCATION PROCESSING	Issued	11/616070	12/26/2006	8238007	8/7/2012
SR-151-US1	Electro Scientific Industries, Inc.	OPTICAL COMPONENT CLEANLINESS AND DEBRIS MANAGEMENT IN LASER MICROMACHINING APPLICATIONS	Issued	11/565356	11/30/2006	8320424	11/27/2012
YB-163-US1	Electro Scientific Industries, Inc.	ZERO MOTION CONTACT ACTUATION	Issued	11/565406	11/30/2006	7443179	10/28/2008
GSI-0024-US2	Electro Scientific Industries, Inc.	LASER-BASED METHOD AND SYSTEM FOR PROCESSING TARGETED SURFACE MATERIAL AND ARTICLE PRODUCED THEREBY	Issued	11/514660	10/27/2006	7469831	12/30/2008
GSI-0028-US1	Electro Scientific Industries, Inc.	METHODS AND APPARATUS FOR UTILIZING AN OPTICAL REFERENCE	Issued	11/582829	10/18/2006	7538564	5/26/2009
SR-164-US1	Electro Scientific Industries, Inc.	REDUCING COHERENT CROSSTALK IN DUAL-BEAM LASER PROCESSING SYSTEM	Issued	11/496871	7/31/2006	7888620	2/15/2011

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-135-US1	Electro Scientific Industries, Inc.	MICROMACHINING WITH SHORT-PULSED, SOLID-STATE UV LASER	Issued	11/440697	5/24/2006	7605343	10/20/2009
SR-144-US1	Electro Scientific Industries, Inc.	METHOD OF SUPPRESSING DISTORTION OF A WORKING LASER BEAM OF A LASER LINK PROCESSING SYSTEM	Issued	11/440696	5/24/2006	7423818	9/9/2008
YB-159-US1	Electro Scientific Industries, Inc.	ADJUSTING IMAGE QUALITY USING MULTI-WAVELENGTH LIGHT	Issued	11/414678	4/28/2006	7589869	9/15/2009
GSI-0038-US1	Electro Scientific Industries, Inc.	OPTICAL SCANNING METHOD AND SYSTEM AND METHOD FOR CORRECTING OPTICAL ABERRATIONS INTRODUCED INTO THE SYSTEM BY A BEAM DEFLECTOR	Issued	11/410684	4/25/2006	7466466	12/16/2008
SR-087-US2	Electro Scientific Industries, Inc.	LASER SEGMENTED CUTTING, MULTI-STEP CUTTING, OR BOTH	Issued	11/332815	1/13/2006	RE43400	5/22/2012
SR-133-US1	Electro Scientific Industries, Inc.	METHOD AND MACHINE FOR REPETITIVE TESTING OF AN ELECTRICAL COMPONENT	Issued	11/284789	11/21/2005	7173432	2/6/2007
SR-130-US1	Electro Scientific Industries, Inc.	TRACKING AND MARKING SPECIMENS HAVING DEFECTS FORMED DURING LASER VIA DRILLING	Issued	11/719390	11/14/2005	8694148	4/8/2014
GSI-0029-US1	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR LASER SOFT MARKING	Issued	11/270109	11/9/2005	7705268	4/27/2010
SR-138-US1	Electro Scientific Industries, Inc.	REAL TIME TARGET TOPOGRAPHY TRACKING DURING LASER PROCESSING	Issued	11/253778	10/18/2005	7638731	12/29/2009
GSI-0016B-US4	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR HIGH-SPEED PRECISE LASER TRIMMING, SCAN LENS SYSTEM FOR USE THEREIN AND ELECTRICAL DEVICE PRODUCED THEREBY	Issued	11/245282	10/6/2005	7358157	4/15/2008

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-126-US1	Electro Scientific Industries, Inc.	RESOLVING THERMOELECTRIC POTENTIALS DURING LASER TRIMMING OF RESISTORS	Issued	11/218283	8/31/2005	7667159	2/23/2010
SR-110-US1	Electro Scientific Industries, Inc.	AOM MODULATION TECHNIQUES EMPLOYING TRANSDUCERS TO MODULATE DIFFERENT AXES	Issued	11/138075	5/25/2005	7133186	11/7/2006
SR-110-US2	Electro Scientific Industries, Inc.	AOM MODULATION TECHNIQUES EMPLOYING PLURALITY OF TRANSDUCERS TO IMPROVE LASER SYSTEM PERFORMANCE	Issued	11/138076	5/25/2005	7133187	11/7/2006
SR-110-US3	Electro Scientific Industries, Inc.	AOM MODULATION TECHNIQUES FOR FACILITATING PULSE-TO-PULSE ENERGY STABILITY IN LASER SYSTEMS	Issued	11/138078	5/25/2005	7027199	4/11/2006
SR-110-US4	Electro Scientific Industries, Inc.	AOM MODULATION TECHNIQUES EMPLOYING AN UPSTREAM BRAGG ADJUSTMENT DEVICE	Issued	11/138659	5/25/2005	7133188	11/7/2006
SR-110-US5	Electro Scientific Industries, Inc.	AOM MODULATION TECHNIQUES EMPLOYING PLURALITY OF TILT-ANGLED TRANSDUCERS TO IMPROVE LASER SYSTEM PERFORMANCE	Issued	11/138662	5/25/2005	7019891	3/28/2006
SR-111-US1	Electro Scientific Industries, Inc.	AOM FREQUENCY AND AMPLITUDE MODULATION TECHNIQUES FOR FACILITATING FULL BEAM EXTINCTION IN LASER SYSTEMS	Issued	11/138657	5/25/2005	7133182	11/7/2006
GSI-0016-US7	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR HIGH-SPEED, PRECISE MICROMACHINING AN ARRAY OF DEVICES	Issued	11/131668	5/18/2005	7407861	8/5/2008
SR-116-US1	Electro Scientific Industries, Inc.	ADAPTIVE COMMAND FILTERING FOR SERVOMECHANISM CONTROL SYSTEMS	Issued	11/129059	5/12/2005	7345448	3/18/2008
GSI-0016B-US3	Electro Scientific Industries, Inc.	METHODS AND SYSTEMS FOR PROCESSING A DEVICE, METHODS AND SYSTEMS FOR MODELING SAME AND THE	Issued	11/125367	5/9/2005	7192846	3/20/2007

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
		DEVICE					
SR-121-US1	Electro Scientific Industries, Inc.	METHODS FOR SYNCHRONIZED PULSE SHAPE TAILORING	Issued	11/067319	2/25/2005	7301981	11/27/2007
SR-121-US2	Electro Scientific Industries, Inc.	LASERS FOR SYNCHRONIZED PULSE SHAPE TAILORING	Issued	11/067470	2/25/2005	7289549	10/30/2007
E134-US1	Electro Scientific Industries, Inc.	METHOD FOR CORRECTING SYSTEMATIC ERRORS IN A LASER PROCESSING SYSTEM	Issued	11/059025	2/15/2005	7363180	4/22/2008
SR-120-US1	Electro Scientific Industries, Inc.	HIGH ENERGY PULSE SUPPRESSION METHOD	Issued	10/997586	11/24/2004	7616669	11/10/2009
SR-084-US2	Electro Scientific Industries, Inc.	ON-THE-FLY LASER BEAM PATH ERROR CORRECTION FOR SPECIMEN TARGET LOCATION PROCESSING	Issued	10/985840	11/9/2004	7245412	7/17/2007
GSI-0012-US1	Electro Scientific Industries, Inc.	FLEXIBLE SCAN FIELD	Issued	10/967895	10/18/2004	7238913	7/3/2007
SR-118-US1	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR DECREASING THE EFFECTIVE PULSE REPETITION FREQUENCY OF A LASER	Issued	10/931461	8/31/2004	7227098	6/5/2007
SR-115-US1	Electro Scientific Industries, Inc.	SELF-CLEANING LOWER CONTACT	Issued	10/916063	8/9/2004	7402994	7/22/2008
SR-113-US1	Electro Scientific Industries, Inc.	METHODS FOR PROCESSING HOLES BY MOVING PRECISELY TIMED LASER PULSES IN CIRCULAR AND SPIRAL TRAJECTORIES	Issued	10/912525	8/4/2004	7259354	8/21/2007
GSI-0016-US6	Electro Scientific Industries, Inc.	HIGH-SPEED, PRECISION, LASER-BASED METHOD AND SYSTEM FOR PROCESSING MATERIAL OF ONE OR MORE TARGETS WITHIN A FIELD	Issued	10/903120	7/30/2004	6989508	1/24/2006

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-093-US1	Electro Scientific Industries, Inc.	METHOD OF FORMING DIMENSIONALLY PRECISE SLOTS IN RESILIENT MASK OF MINIATURE COMPONENT CARRIER	Issued	10/678951	10/3/2003	6919532	7/19/2005
SR-097-US1	Electro Scientific Industries, Inc.	METHOD OF FORMING A SCRIBE LINE ON A CERAMIC SUBSTRATE	Issued	10/618377	7/11/2003	6949449	9/27/2005
SR-103-US1	Electro Scientific Industries, Inc.	LASER PULSE PICKING EMPLOYING CONTROLLED AOM LOADING	Issued	10/611798	6/30/2003	6947454	9/20/2005
GSI-0014-US1	Electro Scientific Industries, Inc.	HIGH SPEED, LASER-BASED MARKING METHOD AND SYSTEM FOR PRODUCING MACHINE READABLE MARKS ON WORKPIECES AND SEMICONDUCTOR DEVICES WITH REDUCED SUBSURFACE DAMAGE PRODUCED THEREBY	Issued	10/438501	5/15/2003	7067763	6/27/2006
GSI-0014-US2	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR CALIBRATING A LASER PROCESSING SYSTEM AND LASER MARKING SYSTEM UTILIZING SAME	Issued	10/438533	5/15/2003	7015418	3/21/2006
GSI-0014-US3	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR MACHINE VISION-BASED FEATURE DETECTION AND MARK VERIFICATION IN A WORKPIECE OR WAFER MARKING SYSTEM	Issued	10/439069	5/15/2003	7119351	10/10/2006
SR-092-US1	Electro Scientific Industries, Inc.	TEST PROBE ALIGNMENT APPARATUS	Issued	10/393955	3/21/2003	7119566	10/10/2006
NWAV 1001-US3	Electro Scientific Industries, Inc.	SCRIBING SAPPHIRE SUBSTRATES WITH A SOLID STATE UV LASER	Issued	10/384439	3/6/2003	6960739	11/1/2005
SR-095-US1	Electro Scientific Industries, Inc.	LASER BEAM TERTIARY POSITIONER APPARATUS AND METHOD	Issued	10/373232	2/24/2003	6706999	3/16/2004
SR-060-US1	Electro Scientific Industries, Inc.	SIMULATED LASER SPOT ENLARGEMENT	Issued	10/339051	1/8/2003	6706998	3/16/2004

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-20043-US1	Electro Scientific Industries, Inc.	ROLLER CONTACT WITH CONDUCTIVE BRUSHES	Issued	10/282350	10/28/2002	6714028	3/30/2004
NWAV 1001-US1	Electro Scientific Industries, Inc.	SCRIBING SAPPHIRE SUBSTRATES WITH A SOLID STATE UV LASER	Issued	10/208484	7/30/2002	6580054	6/17/2003
GSI-0016-US1	Electro Scientific Industries, Inc.	HIGH-SPEED, PRECISION, LASER-BASED METHOD AND SYSTEM FOR PROCESSING MATERIAL OF ONE OR MORE TARGETS WITHIN A FIELD	Issued	10/107027	3/27/2002	6777645	8/17/2004
GSI-0016-US2	Electro Scientific Industries, Inc.	METHOD AND SYSTEM FOR PROCESSING ONE OR MORE MICROSTRUCTURES OF A MULTI-MATERIAL DEVICE	Issued	10/107028	3/27/2002	6639177	10/28/2003
GSI-0001-US1	Electro Scientific Industries, Inc.	DRIFT-SENSITIVE LASER TRIMMING OF CIRCUIT ELEMENTS	Issued	10/103317	3/22/2002	6875950	4/5/2005
SR-084-US1	Electro Scientific Industries, Inc.	ON-THE-FLY BEAM PATH ERROR CORRECTION FOR MEMORY LINK PROCESSING	Issued	10/077691	2/15/2002	6816294	11/9/2004
YB-117-US1	Electro Scientific Industries, Inc.	INTEGRATED ALIGNMENT AND CALIBRATION OF OPTICAL SYSTEM	Issued	10/039249	10/24/2001	6678058	1/13/2004
YB-123-US1	Electro Scientific Industries, Inc.	DIRECTIONAL LIGHTING AND METHOD TO DISTINGUISH THREE DIMENSIONAL INFORMATION	Issued	09/842436	4/26/2001	6901160	5/31/2005
0006-100IRV-04D2	Newport Corporation	Methods and Devices for Active Vibration Damping of an Optical Structure	Issued	14/147,400	1/3/2014	9,546,945	1/17/2017
0006-100IRV-04DV	Newport Corporation	Methods and Devices for Active Vibration Damping of an Optical Structure	Issued	13/535,745	6/28/2012	8,651,447	2/18/2014
0006-100IRV-04UT	Newport Corporation	Methods and Devices for Active Vibration Damping of an Optical Structure	Issued	11/293,439	12/2/2005	8,231,098	7/31/2012
0016-100IRV-06UT	Newport Corporation	Kinematic Optical Mount and Method of Use	Issued	11/655677	1/19/2007	7495849	2/24/2009

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
0020-100IRV-06UT	Newport Corporation	Adjustable Optical Mount with Locking Devices and Methods	Issued	11/654,946	1/17/2007	7,982,980	7/19/2011
0020-100IRV-11DV	Newport Corporation	Adjustable Optical Mount with Locking Device and Methods	Issued	13/161400	6/15/2011	8441748	5/14/2013
0027-100FRN-05UT	Newport Corporation	Method of Control of Synchronous Motors by Initial Phase Determination	Issued	11/431417	5/9/2006	7376525	5/20/2008
0037-100IRV-06DV	Newport Corporation	Optical Control System including Mount for Optical Component Having Independent Multi-Axial Control	Issued	12/748350	3/26/2010	7855845	12/21/2010
0037-100IRV-06UT	Newport Corporation	Optical Control System including Mount for Optical Component Having Independent Multi-Axial Control	Issued	11/828841	7/26/2007	7688528	3/30/2010
0040-300MTV-06UT	Newport Corporation	Automated Dispersion Compensation over a Broad Wavelength Range for Coherent Optical Pulses	Issued	11/983583	11/9/2007	7962046	6/14/2011
0050-100FRN-07UT	Newport Corporation	Optical Adjustment Mounts with Piezoelectric Inertia Driver	Issued	12/065083	1/18/2007	8520327	8/27/2013
0056-300MTV-05UT	Newport Corporation	Methods and Systems to Enhance Multiple Wave Mixing Process	Issued	11/332555	1/12/2006	7292387	11/6/2007
0061-100IRV-03UT	Newport Corporation	Instrumented Platform for Vibration Sensitive Equipment	Issued	10/693222	10/24/2003	7320455	1/22/2008
0067-100FRN-04UT	Newport Corporation	Cooling System for Linear Motors	Issued	11/186111	7/21/2005	7235902	6/26/2007
0069-100IRV-04UT	Newport Corporation	Instrumented Platform for Vibration Sensitive Equipment	Issued	10/971623	10/22/2004	8276873	10/2/2012
0090-100IRV-04C2	Newport Corporation	Instrumented Platform for Vibration Sensitive Equipment	Issued	13/479206	5/23/2012	8807515	8/19/2014
0090-100IRV-04C3	Newport Corporation	Instrumented Platform for Vibration Sensitive Equipment	Issued	14/328188	7/10/2014	9086112	7/21/2015
0090-100IRV-07C1	Newport Corporation	Instrumented Platform for Vibration Sensitive Equipment	Issued	11/986538	11/21/2007	8196891	6/12/2012

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
0108-300MTV-09UT	Newport Corporation	Automated Bandwidth/Wavelength Adjustment Systems and Methods for Short Pulse Lasers and Optical Amplifiers	Issued	12/790,653	5/28/2010	8,218,587	7/10/2012
0109-300MTV-09C1	Newport Corporation	Angular Beam Adjustment Systems and Methods for Laser Systems	Issued	14/559,829	12/3/2014	9,627,841	4/18/2017
0109-300MTV-09US	Newport Corporation	Angular Beam Adjustment Systems and Methods for Laser Systems	Issued	13/390,503	8/19/2010	8,942,266	1/27/2015
0110-100STR-09US	Newport Corporation	Quantum Efficiency Measurement System and Method of Use	Issued	13/234,951	9/16/2011	8,736,825	5/27/2014
0116-300MTV-10US	Newport Corporation	Broadly Tunable Optical Parametric Oscillator	Issued	13/011780	1/22/2011	8902939	12/2/2014
0116-300SAN-14C1	Newport Corporation	Broadly Tunable Optical Parametric Oscillator	Issued	14/501460	9/30/2014	10014652	7/3/2018
0123-100FKL-10C1	Newport Corporation	Optical Demultiplexing System	Issued	14/105,610	12/13/2013	9,040,914	5/26/2015
0123-100FKL-10C2	Newport Corporation	Optical Demultiplexing System	Issued	14/695,009	4/23/2015	9,435,958	9/6/2016
0123-100FKL-10UT	Newport Corporation	Optical Demultiplexing System	Issued	13/174516	6/30/2011	8633440	1/21/2014
0125-100FRN-10C1	Newport Corporation	Optical Adjustment Mounts with Absolute Position Feedback	Issued	13/914,182	6/10/2013	8,755,133	6/17/2014
0125-100FRN-10US	Newport Corporation	Optical Adjustment Mounts with Absolute Position Feedback	Issued	13/181,444	7/12/2011	8,482,868	7/9/2013
0129-100IRV-14D2	Newport Corporation	Tunable Vibration Dampers and Methods of Manufacture and Tuning	Issued	15/280,894	9/29/2016	10024380	7/17/2018
0129-100IRV-14DV	Newport Corporation	Tunable Vibration Dampers and Methods of Manufacture and Tuning	Issued	14/484,210	9/11/2014	9752642	9/5/2017
0129-100IRV-10UT	Newport Corporation	Tunable Vibration Dampers and Methods of Manufacture and Tuning	Issued	13/338164	12/27/2011	8857585	10/14/2014
0129-100IRV-14D3	Newport Corporation	Tunable Vibration Dampers and Methods of Manufacture and Tuning	Issued	15/280,904	9/29/2016	10024381	7/17/2018

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0142-100IRV-12C1	Newport Corporation	SYSTEM AND METHOD FOR DETECTING THE PRESENCE AND TYPE OF CAPACITIVE LOADS	Issued	15/850,349	12/21/2017	10139440	11/27/2018
0142-100IRV-12US	Newport Corporation	SYSTEM AND METHOD FOR DETECTING THE PRESENCE AND TYPE OF CAPACITIVE LOADS	Issued	14/440,783	5/5/2015	9857405	1/2/2018
0144-100IRV-13C1	Newport Corporation	Optical Post Mount System and Method of Use	Issued	15/601,971	5/22/2017	10,241,290	3/26/2019
0144-100IRV-13US	Newport Corporation	Optical Post Mount System and Method of Use	Issued	14/764,565	1/30/2014	9678300	6/13/2017
0145-300SAN-13US	Newport Corporation	Method and Apparatus for Laser Cutting Transparent and Semitransparent Substrates	Issued	14/765074	7/31/2015	10179374	1/15/2019
0149-100FRN-14D1	Newport Corporation	MULTI-AXIS POSITIONING DEVICE	Issued	16053711	8/2/2018	10481102	11/19/2019
0149-100FRN-14US	Newport Corporation	MULTI-AXIS POSITIONING DEVICE	Issued	15320718	7/3/2014	10073043	9/11/2018
0150-500NFO-13UT	Newport Corporation	Integral Preload Mechanism for Piezoelectric Actuator	Issued	14/253,087	4/15/2014	9,425,711	8/23/2016
0150-500NFO-16C1	Newport Corporation	Integral Preload Mechanism for Piezoelectric Actuator	Issued	15/209,639	7/13/2016	10,389,276	8/20/2019
0153-600BOZ-13C1	Newport Corporation	LED Solar Simulator and Method of Use	Issued	16/154669	10/8/2018	10458608B2	10/29/2019
0153-600BOZ-13US	Newport Corporation	LED-Based Solar Simulator and Method of Use	Issued	15/025261	9/27/2014	10094524B2	10/9/2018
0160-100STR-14US	Newport Corporation	COHERENTLY RECEIVING SIMULTANEOUS OPTICAL-BASED ELECTRICAL SIGNALS	Issued	15/328,871	1/24/2017	9,841,375	12/12/2017
0161-100IRV-14US	Newport Corporation	OPTICAL RAIL SYSTEM AND METHOD USING QUICK-DISCONNECT OPTICAL COMPONENT MOUNTS	Issued	15/315,325	11/30/2016	10,393,987	8/27/2019
0163-100IRV-14D1	Newport Corporation	SYSTEM AND METHOD FOR MOUNTING AND ALIGNING OPTICAL COMPONENTS WITH RESPECT TO JUNCTION OPTICAL COMPONENT	Issued	15/940,920	3/29/2018	10684439	6/16/2020

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
0163-100IRV-14D2	Newport Corporation	System and Method for Mounting and Aligning Optical Components Using Single Rail Mounting	Issued	15/940924	3/29/2018	10684440	6/16/2020
0163-100IRV-14UT	Newport Corporation	System and Method for Mounting and Aligning Optical Components Using Single Rail Mounting	Issued	14/582925	12/24/2014	9964728	5/8/2018
0165-500NFO-14US	Newport Corporation	Integrated Picomotor Mount	Issued	15/008,396	1/27/2016	10,161,560	12/25/2018
0170-300SAN-14US	Newport Corporation	Fiber Device and Method for Amplifying Pulses of Laser Light	Issued	15/537739	12/24/2015	10267985	4/23/2019
0172-300SAN-15US	Newport Corporation	Diode-Pumped High Peak Power Laser for Multi-Photon Applications	Issued	15/736280	6/20/2016	10297969	5/21/2019
0173-600BOZ-15US	Newport Corporation	APPARATUS AND METHOD FOR MEASURING ONE OR MORE CHARACTERISTICS OF ONE OR MORE PHOTOVOLTAIC CELLS	Issued	15/738844	12/21/2017	10965247	3/30/2021
0174-100GER-15C1	Newport Corporation	Component Shifting Apparatus with Shape Memory Alloy Actuators	Issued	16/360590	3/21/2019	10451954	10/22/2019
0174-100GER-15US	Newport Corporation	Component Shifting Apparatus With Shape Memory Alloy Actuators	Issued	16/066330	12/30/2015	10416531	9/17/2019
0180-100IRV-16UT	Newport Corporation	Optical Component Mount Device and Post System and Method of Use	Issued	15/429584	2/10/2017	10302893B2	5/28/2019
0182-100IRV-17UT	Newport Corporation	Thermal Compensating Optical Component Mount and Related Devices	Issued	15/713570	9/22/2017	10996419	5/4/2021
0183-600BOZ-16C1	Newport Corporation	Multi-Junction Detector Device and Method of Use	Issued	16/553921	8/28/2019	10998354	5/4/2021
0183-600BOZ-16UT	Newport Corporation	Multi-Junction Detector Device and Method of Use	Issued	15/661892	7/27/2017	10411050B2	9/10/2019
0184-100IRV-17US	Newport Corporation	Modular Broadband Light Source with Lamp Insert and Methods of Use	Issued	16/468557	1/15/2018	10746361	8/18/2020
0185-300SAN-16CON	Newport Corporation	Laser System Having Novel Multi-Stage Amplifier and Methods of Use	Published	16/992400	8/13/2020		

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
0185-300SAN-16UT	Newport Corporation	Laser System Having Novel Multi-Stage Amplifier and Methods of Use	Issued	15/833906	12/6/2017	10784646	9/22/2020
0186-300BRL-16US	Newport Corporation	Laser Oscillator System Having Optical Element For Injection Seeding and Method of Manufacture	Published	16/957812	12/20/2018		
0187-300SAN-16UT	Newport Corporation	High-Power Mode-Locked Laser System and Methods of Use	Issued	15/829875	12/2/2017	10541505	1/21/2020
0190-500NFO-17US	Newport Corporation	HIGH RESPONSIVITY HIGH BANDWIDTH PHOTODIODE AND METHOD OF MANUFACTURE	Filed	16/478625	2/20/2018	11195962	12/7/2021
0192-100FRN-17US	Newport Corporation	Process and Device for Generation of Pulse Signals at Particular Positions of a Movable Element.	Published	16/624498	6/28/2018		
0193-100IRV-17US	Newport Corporation	Lens System for use with High Laser Power Density Scanning System	Published	16/492919	4/25/2018		
0198-300SAN-18UT	Newport Corporation	OPTICAL COMPONENTS HAVING HYBRID NANO-TEXTURED ANTI-REFLECTIVE COATINGS AND METHODS OF MANUFACTURE	Published	16/289203	2/28/2019		
0204-700LOG-18US	Newport Corporation	Method and Apparatus for Focus Correction of Multi-Image Laser Beam Quality Measurements	Filed	17/058465	7/8/2019		
0211-300SAN-18UT	Newport Corporation	Low Repetition Rate Infrared Tunable Femtosecond Laser	Issued	16/778567	1/31/2020	11165218	11/2/2021
0217-100FRN-19US	Newport Corporation	Piezoelectric Actuator	Filed	17/604,603	4/15/2020		
0224-100IRV-19UT	Newport Corporation	Low Wavefront Distortion Optical Mount for thin Optical Components	Published	17/070039	10/14/2020		
0226-100FRN-20UT	Newport Corporation	Multi-Axis Motion System with Decoupled Wafer Chuck Support and Methods of Use and Manufacture	Filed	17/017402	9/10/2020		
0230-300SAN-21P	Newport Corporation	Multiple Wavelength Laser System for Extreme Ultraviolet Light	Filed	63/168028	3/30/2021		
0740-500NFO-02	Newport	External Cavity Laser with High	Issued	10/086137	2/26/2002	6788726	9/7/2004

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	Corporation	Spectral Purity Output					
0747-500NFO-03	Newport Corporation	Laser Coherence Control Using Homogenous Linewidth Broadening	Issued	10/652429	8/29/2003	7280568	10/9/2007
0751-500NFO-04	Newport Corporation	Tunable External Cavity Laser with Adjustable Cavity Length and Mode-Hop Suppression	Issued	10/808732	3/24/2004	7230960	6/12/2007
0752-500NFO-04	Newport Corporation	Piezoelectric-Tuned External Cavity Laser	Issued	11/011461	12/13/2004	7388890	6/17/2008
0755-500NFO-04UT	Newport Corporation	Sealed Mover Assembly	Issued	10/888028	7/9/2004	7423364	9/9/2008
0764-500NFO-04UT	Newport Corporation	Multiple Speed Mover Assembly	Issued	10/913267	8/5/2004	7122989	10/17/2006
9130-300MTV-02UT	Newport Corporation	Extended Life Harmonic Generator	Issued	10/061946	2/1/2002	6697390	2/24/2004
9135-300MTV-02UT	Newport Corporation	System For Improved Power Control	Issued	10/301801	11/20/2002	6853655	2/8/2005
9136-300MTV-02UT	Newport Corporation	Algorithm For Increasing the Lifetime of Critical Components in a Laser System	Issued	10/142273	5/8/2002	6890474	5/10/2005
9137-300MTV-02UT	Newport Corporation	Method and Application for Polarization and Wavelength Insensitive Pumping of Solid State Lasers	Issued	10/233138	8/30/2002	6891876	5/10/2005
9139-300MTV-02UT	Newport Corporation	Wavelength Locker	Issued	10/301503	11/20/2002	6930822	8/16/2005
9143-300MTV-03UT	Newport Corporation	Diode Pumped Laser with Intracavity Harmonics	Issued	10/351467	1/24/2003	7016389	3/21/2006
9144-300MTV-04UT	Newport Corporation	Low Gain Regenerative Amplifier System	Issued	10/762216	1/20/2004	7016107	3/21/2006
9243-100IRV-01UT	Newport Corporation	Multi-Rate Commutation of Motors	Issued	10/101675	3/18/2002	6642680	11/4/2003
9248-100FRN-04UT	Newport Corporation	High Resolution, Dynamic Positioning Mechanism for Specimen Inspection and Processing	Issued	10/891719	7/14/2004	6891601	5/10/2005
9250-100IRV-02UT	Newport Corporation	Snubber for Pnuematic Isolation Platforms	Issued	10/142444	5/4/2002	6966535	11/22/2005
9270-600BOZ-01UT	Newport Corporation	Integrating Cavity for Optical Measurements	Issued	10/324519	12/19/2002	6810161	10/26/2004

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
E157-US3	Electro Scientific Industries, Inc.	FIBER AMPLIFIERS AND FIBER LASERS WITH REDUCED OUT-OF-BAND GAIN	Issued	14/151457	1/9/2014	8842362	9/23/2014
SR-214-US2-2019	Electro Scientific Industries, Inc.	LASER MICROMACHINING WITH TAILORED BURSTS OF SHORT LASER PULSES	Published	16/400792	5/1/2019		
T500-US1	Electro Scientific Industries, Inc.	FIBER AMPLIFIER WITH INTEGRATED FIBER LASER PUMP	Issued	11/942984	11/20/2007	7738166	6/15/2010
0100.2050-001	MKS Instruments, Inc.	IONIZATION GAUGE	Issued	10/799,446	3/12/2004	7030619	4/18/2006
0100.2050-004	MKS Instruments, Inc.	AN IONIZATION GAUGE	Issued	11/354,278	2/14/2006	7295015	11/13/2007
0100.2067-001	MKS Instruments, Inc.	WIDE RANGE COMBINATION VACUUM GAUGE	Issued	11/439,875	5/24/2006	7418869	9/2/2008
0100.2093-000	MKS Instruments, Inc.	METHOD AND APPARATUS FOR STORING VACUUM GAUGE CALIBRATION PARAMETERS AND MEASUREMENT DATA ON A VACUUM GAUGE STRUCTURE	Issued	11/012,871	12/14/2004	7313966	1/1/2008
0100.2093-008	MKS Instruments, Inc.	METHOD AND APPARATUS FOR STORING VACUUM GAUGE CALIBRATION PARAMETERS AND MEASUREMENT DATA ON A VACUUM GAUGE STRUCTURE	Issued	11/820,629	6/20/2007	7921719	4/12/2011
0100.2143-000	MKS Instruments, Inc.	AN IONIZATION GAUGE WITH A COLD ELECTRON SOURCE	Issued	11/827,370	7/11/2007	7768267	8/3/2010
0100.2149-000	MKS Instruments, Inc.	METHOD AND APPARATUS FOR MAINTAINING EMISSION CAPABILITIES OF HOT CATHODES IN HARSH ENVIRONMENTS	Issued	11/488,457	7/18/2006	7429863	9/30/2008
0100.2149-004	MKS Instruments, Inc.	METHOD AND APPARATUS FOR MAINTAINING EMISSION CAPABILITIES OF HOT CATHODES IN HARSH ENVIRONMENTS	Issued	12/229,271	8/21/2008	7656165	2/2/2010

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
0100.2150-000	MKS Instruments, Inc.	HIGH-SENSITIVITY PRESSURE ACTUATED SWITCH BASED ON MEMS-FABRICATED SILICON DIAPHRAM AND HAVING ELECTRICALLY ADJUSTABLE SWITCH POINT	Issued	11/700,303	1/31/2007	7360429	4/22/2008
0100.2153-003	MKS Instruments, Inc.	METHOD AND APPARATUS FOR SHIELDING FEEDTHROUGH PIN INSULATORS IN AN IONIZATION GAUGE OPERATING IN HARSH ENVIRONMENTS	Issued	12/313,778	11/24/2008	7847559	12/7/2010
0100.2156-001	MKS Instruments, Inc.	IONIZATION GAUGE HAVING ELECTRON MULTIPLIER COLD EMISSION SOURCE	Issued	12/808983	12/17/2008	8686733	4/1/2014
0100.2174-002	MKS Instruments, Inc.	IONIZATION GAUGE WITH OPERATIONAL PARAMETERS AND GEOMETRY DESIGNED FOR HIGH PRESSURE OPERATION	Issued	12/860,050	8/20/2010	8648604	2/11/2014
0100.2174-006	MKS Instruments, Inc.	IONIZATION GAUGE WITH OPERATIONAL PARAMETERS AND GEOMETRY DESIGNED FOR HIGH PRESSURE OPERATION	Issued	14/174386	2/6/2014	9404827	8/2/2016
0100.2188-002	MKS Instruments, Inc.	IONIZATION GAUGE WITH EMISSION CURRENT AND BIAS POTENTIAL CONTROL	Issued	13/051430	3/18/2011	8947098	2/3/2015
0100.2188-006	MKS Instruments, Inc.	IONIZATION GAUGE WITH EMISSION CURRENT AND BIAS POTENTIAL CONTROL	Issued	14/582750	12/24/2014	9383286	7/5/2016
0100.2234-002	MKS Instruments, Inc.	IONIZATION GAUGE FOR HIGH PRESSURE OPERATION	Issued	14/377449	8/7/2014	9593996	3/14/2017
0100.2234-008	MKS Instruments, Inc.	IONIZATION GAUGE FOR HIGH PRESSURE OPERATION	Issued	15/421805	2/1/2017	9952113	4/24/2018
0100.2236-008	MKS Instruments, Inc.	Electrostatic Ion Trap	Issued	12/514339	11/13/2007	9000364	4/7/2015
0100.2241-003	MKS Instruments, Inc.	ELECTROSTATIC ION TRAP	Issued	13/289,142	11/4/2011	8586918	11/19/2013
0100.2249-003	MKS Instruments, Inc.	VACUUM QUALITY MEASUREMENT SYSTEM	Issued	13/508644	11/8/2010	9322738	4/26/2016

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0100.2336-004	MKS Instruments, Inc.	Method And Apparatus For Tuning An Electrostatic Ion Trap	Issued	14/354227	10/30/2012	9040907	5/26/2015
0100.2350-002	MKS Instruments, Inc.	Trace Gas Concentration In ART MS Traps	Issued	14/384782	3/13/2013	9714919	7/25/2017
0100.2367-001	MKS Instruments, Inc.	Cold Cathode Ionization Vacuum Gauge	Issued	14/500820	9/29/2014	9671302	6/6/2017
0100.2367-004	MKS Instruments, Inc.	Cold Cathode Ionization Vacuum Gauge	Issued	14/537593	11/10/2014	9797797	10/24/2017
0100.2367-005	MKS Instruments, Inc.	Cold Cathode Ionization Vacuum Gauge	Issued	15/712916	9/22/2017	10352811	7/16/2019
0195-800WIL-17UT	MKS Instruments, Inc.	Multi-Sensor Gas Sampling Detection System for Radial Gases and Short-Lived Molecules and Method of Use	Published	16/205064	11/29/2018		
0201-800WIL-18UT	MKS Instruments, Inc.	Radical Output Monitor for a Remote Plasma Source and Method of Use	Issued	16/438827	6/12/2019	11114287	9/7/2021
0207-800BRL-18UT	MKS Instruments, Inc.	Ozonated Water Delivery System and Method of Use	Published	16/553033	8/27/2019		
0212-800AND-19UT	MKS Instruments, Inc.	Heated Throttle Valve Apparatus and Methods of Use and Manufacture	Published	16/851644	4/17/2020		
0214-800BLD-19UT	MKS Instruments, Inc.	Low Profile Heater Apparatus and Method of Manufacture	Published	16/823715	3/19/2020		
0221-800AND-19UT	MKS Instruments, Inc.	Capacitance Manometer	Published	16/825994	3/20/2020		
0233-800BER-21P	MKS Instruments, Inc.	Light-Enhanced Ozone Wafer Processing System and Method of Use	Filed	63/194,472	6/3/2021		
0234-800BER-20UT	MKS Instruments, Inc.	Multi-Wavelength Ozone Concentration Sensor and Method of Use	Filed	17/486,139	9/27/2021		
0236-800ITA-21P	MKS Instruments, Inc.	Multi-Phase Power Supply with Power Factor Correction for Magnetrons	Filed	63/272,535	10/27/2021		
0237-800WIL-21P	MKS Instruments, Inc.	Methods and Systems for Feedback Control in Plasma Processing Using Radical Sensing	Filed	63/278,837	11/12/2021		

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
5089.3040-004	MKS Instruments, Inc.	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE M ASS FLOW CONTROL	Issued	10/178,721	6/24/2002	6712084	3/30/2004
5089.3040-010	MKS Instruments, Inc.	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE M ASS FLOW CONTROL	Issued	10/806,974	3/23/2004	6932098	8/23/2005
5089.3040-016	MKS Instruments, Inc.	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE M ASS FLOW CONTROL	Issued	11/304456	12/15/2005	7424346	9/9/2008
5089.3040-017	MKS Instruments, Inc.	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE M ASS FLOW CONTROL	Issued	11/950966	12/5/2007	7809473	10/5/2010
056231-0342-US	MKS Instruments, Inc.	APPARATUS AND METHOD FOR COMPENSATED SENSOR OUTPUT	Issued	10/170,861	6/13/2002	6687635	2/3/2004
056231-0349-US	MKS Instruments, Inc.	PENDULUM VALVE ASSEMBLY	Issued	10/334088	12/30/2002	6776394	8/17/2004
5089.3040-000	MKS Instruments, Inc.	APPARATUS AND METHOD FOR CALIBRATION OF MASS FLOW CONTROLLE R	Issued	10/178,119	6/24/2002	7136767	11/14/2006
5089.3040-002	MKS Instruments, Inc.	APPARATUS AND METHOD FOR SELF-CALIBRATION OF MASS FLOW CONT ROLLER	Issued	10/178,378	6/24/2002	6948508	9/27/2005
5089.3040-006	MKS Instruments, Inc.	APPARATUS AND METHOD FOR MASS FLOW CONTROLLER WITH NETWORK ACCESS TO DIAGNOSTICS	Issued	10/178,884	6/24/2002	6810308	10/26/2004
5089.3040-003	MKS Instruments, Inc.	APPARATUS AND METHOD FOR DISPLAYING MASS FLOW CONTROLLER PR ESSURE	Issued	10/178586	6/24/2002	7552015	6/23/2009
5089.3040-005	MKS Instruments, Inc.	APPARATUS AND METHOD FOR MASS FLOW CONTROLLER WITH EMBEDDED WEB SERVER	Issued	10/178,810	6/24/2002	7004191	2/28/2006

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
5089.3040-001	MKS Instruments, Inc.	APPARATUS AND METHOD FOR MASS FLOW CONTROLLER WITH A PLURAL ITY OF CLOSED LOOP CONTROL CODE SETS	Issued	10/178,261	6/24/2002	6868862	3/22/2005
056231-0389-US	MKS Instruments, Inc.	SEAL RING FOR PENDULUM VALVE ASSEMBLY	Issued	10/369952	2/20/2003	6863256	3/8/2005
5089.3044-000	MKS Instruments, Inc.	THERMAL MASS FLOW RATE SENSOR INCLUDING BYPASS PASSAGEWAYS AND A SENSOR PASSAGEWAY HAVING SIMILAR ENTRANCE EFFECTS	Issued	10/988,026	11/12/2004	7107834	9/19/2006
5089.3047-000	MKS Instruments, Inc.	SYSTEM AND METHOD FOR IN-SITU FLOW VERIFICATION AND CALIBRA TION	Issued	10/603,946	6/25/2003	6955072	10/18/2005
056231-0434-US	MKS Instruments, Inc.	VALVE ASSEMBLY HAVING IMPROVED CONDUCTANCE CONTROL	Issued	10/673,989	9/29/2003	7032882	4/25/2006
5089.3048-000	MKS Instruments, Inc.	SYSTEM AND METHOD FOR CONTROLLING PRESSURE IN REMOTE ZONES	Issued	10/796,723	3/9/2004	6986359	1/17/2006
5089.3050-000	MKS Instruments, Inc.	FLOW MONITORING SYSTEM	Issued	10/814,970	3/30/2004	7120542	10/10/2006
5089.3051-000	MKS Instruments, Inc.	ATTITUDE ERROR SELF-CORRECTION FOR THERMAL SENSORS OF MASS FLOW METERS AND CONTROLLERS	Issued	10/943,377	9/17/2004	7000465	2/21/2006
5089.3053-000	MKS Instruments, Inc.	PULSED MASS FLOW DELIVERY SYSTEM AND METHOD	Issued	10/822,358	4/12/2004	7628860	12/8/2009
5089.3053-006	MKS Instruments, Inc.	PULSED MASS FLOW DELIVERY SYSTEM AND METHOD	Issued	11/586,782	10/26/2006	7829353	11/9/2010
5089.3053-007	MKS Instruments, Inc.	PULSED MASS FLOW DELIVERY SYSTEM AND METHOD	Issued	11/588042	10/26/2006	7615120	11/10/2009
5089.3055-000	MKS Instruments, Inc.	THERMAL MASS FLOW RATE SENSOR HAVING FIXED BYPASS RATIO	Issued	10/987,718	11/12/2004	7121139	10/17/2006
5089.3056-000	MKS Instruments, Inc.	PULSED MASS FLOW DELIVERY SYSTEM AND METHOD	Issued	11/015,465	12/17/2004	7628861	12/8/2009

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5089.3057-000	MKS Instruments, Inc.	REYNOLDS NUMBER CORRECTION FUNCTION FOR MASS FLOW RATE SENSOR	Issued	10/987,719	11/12/2004	7000463	2/21/2006
056231-0485-US	MKS Instruments, Inc.	VAVLE ASSEMBLY HAVING IMPROVED PUMP-DOWN PERFORMANCE	Issued	11/063075	2/22/2005	7278444	10/9/2007
056231-0486-US	MKS Instruments, Inc.	VALVE ASSEMBLY HAVING RIGID SEATING SURFACES	Issued	11/021,912	12/23/2004	7387135	6/17/2008
056231-0491-US	MKS Instruments, Inc.	VALVE ASSEMBLY HAVING ARTICULATING RIGID SEATING SURFACE	Issued	11/114,388	4/26/2005	7428913	9/30/2008
056231-0509-US	MKS Instruments, Inc.	EXTERNAL VOLUME INSENSITIVE FLOW VERIFICATION	Issued	11/090,120	3/25/2005	7174263	2/6/2007
056231-0516-US	MKS Instruments, Inc.	HEATED PRESSURE TRANSDUCER	Issued	11/119604	5/2/2005	7000479	2/21/2006
5089.3059-000	MKS Instruments, Inc.	GAS DELIVERY METHOD AND SYSTEM INCLUDING A FLOW RATIO CONTR OLLER USING ANTISYMMETRIC OPTIMAL CONTROL	Issued	11/111,646	4/21/2005	7621290	11/24/2009
056231-0530-US	MKS Instruments, Inc.	THERMAL MOUNTING PLATE FOR HEATED PRESSURE TRANSDUCER	Issued	11/180370	7/13/2005	7124640	10/24/2006
056231-0531-US	MKS Instruments, Inc.	SYNCHRONOUS UNDERSAMPLING FOR HIGH-FREQUENCY VOLTAGE AND CU RRENT MEASUREMENTS	Issued	11/132,551	5/19/2005	7477711	1/13/2009
056231-0552-US	MKS Instruments, Inc.	CONSTANT POWER DISSIPATION IN CAPACITANCE PRESSURE TRANDUCE RS	Issued	11/891,167	8/9/2007	7451654	11/18/2008
5089.3061-000	MKS Instruments, Inc.	VERTICAL MOUNT MASS FLOW SENSOR	Issued	11/284,452	11/22/2005	7296465	11/20/2007
056231-0580-US	MKS Instruments, Inc.	HIGHLY RESPONSIVE MASTER-SLAVE VALVE POSITIONING	Issued	11/278,071	3/30/2006	7643909	1/5/2010
5089.3062-000	MKS Instruments, Inc.	COMPENSATION FOR THERMAL SIPHONING IN MASS FLOW CONTROLLERS	Issued	11/340,260	1/26/2006	7467027	12/16/2008

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5089.3063-000	MKS Instruments, Inc.	PRESSURE REGULATION IN REMOTE ZONES	Issued	11/333,142	1/17/2006	8037896	10/18/2011
5089.3064-000	MKS Instruments, Inc.	MULTIPLE-CHANNEL FLOW RATIO CONTROLLER	Issued	11/279786	4/14/2006	8997791	4/7/2015
5089.3058-008	MKS Instruments, Inc.	MASS FLOW VERIFIER WITH FLOW RESTRICTOR	Issued	11/367,641	3/3/2006	7463991	12/9/2008
056231-0664-US	MKS Instruments, Inc.	PRESSURE CONTROL SYSTEM WITH OPTIMIZED PERFORMANCE	Issued	11/387,042	3/21/2006	7369920	5/6/2008
5089.3066-000	MKS Instruments, Inc.	CRITICAL FLOW BASED MASS FLOW VERIFIER	Issued	11/479,092	6/30/2006	7474968	1/6/2009
5089.3067-000	MKS Instruments, Inc.	GAS DELIVERY METHOD AND SYSTEM INCLUDING A FLOW RATIO CONTROLLER USING A MULTIPLE ANTISYMMETRIC OPTIMAL CONTROL ARRANGEMENT	Issued	11/708,284	2/20/2007	7673645	3/9/2010
056231-0704-US	MKS Instruments, Inc.	CAPACITANCE MANOMETERS AND METHODS RELATING TO AUTO-DRIFT C ORRECTION	Issued	11/735,654	4/16/2007	7706995	4/27/2010
5089.3069-000	MKS Instruments, Inc.	CONTROLLER GAIN SCEDULING FOR MASS FLOW CONTROLLERS	Issued	11/635,726	12/7/2006	8079383	12/20/2011
5089.3070-000	MKS Instruments, Inc.	INTEGRATED PRESSURE AND FLOW RATIO CONTROL SYSTEM	Issued	11/651,908	1/10/2007	7706925	4/27/2010
056231-0750-US	MKS Instruments, Inc.	CAPACITANCE MANOMETERS AND METHODS OF MAKING SAME	Issued	12/100,634	4/10/2008	7757563	7/20/2010
5089.3073-000	MKS Instruments, Inc.	SYSTEMS AND METHODS FOR UPDATING VALVE CRACKING CURRENT IN MASS FLOW CONTROLLERS	Issued	12/139,633	6/16/2008	8386083	2/26/2013
056231-0855-US	MKS Instruments, Inc.	PREVENTIVE MAINTENANCE DIAGNOSTICS FOR VALVE SYSTEMS	Issued	12/143,106	6/20/2008	7950294	5/31/2011
5089.3074-000	MKS Instruments, Inc.	HIGH ACCURACY MASS FLOW VERIFIER WITH MULTIPLE INLETS	Issued	12/050,597	3/18/2008	7757554	7/20/2010

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5089.3075-000	MKS Instruments, Inc.	DUAL-MODE MASS FLOW VERIFICATION AND MASS FLOW DELIVERY SYSTEM AND METHOD	Issued	12/273,234	11/18/2008	7891228	2/22/2011
056231-0920-US	MKS Instruments, Inc.	FLUID CONTROL VALVES	Issued	13/753019	1/29/2013	9133960	9/15/2015
056231-0940-US	MKS Instruments, Inc.	BUTTERFLY VALVE AND SYSTEM EMPLOYING SAME AND METHOD FOR USING SAME FIELD	Issued	12/611,760	11/3/2009	8763987	7/1/2014
5089.3076-000	MKS Instruments, Inc.	UPSTREAM VOLUME MASS FLOW VERIFICATION SYSTEMS AND METHODS	Issued	12/508,799	7/24/2009	8793082	7/29/2014
5089.3077-000	MKS Instruments, Inc.	METHODS AND APPARATUS FOR MULTIPLE ZONE PRESSURE CONTROLLERS	Issued	12/632514	12/7/2009	9127361	9/8/2015
056231-0970-US	MKS Instruments, Inc.	IMPROVEMENTS IN CAPACITANCE SENSORS	Issued	12/828,518	7/1/2010	8704538	4/22/2014
5089.3078-000	MKS Instruments, Inc.	SYSTEM FOR AND METHOD OF FAST PULSE GAS DELIVERY	Issued	12/893554	9/29/2010	8997686	4/7/2015
5089.3079-000	MKS Instruments, Inc.	METHOD AND APPARATUS FOR MULTIPLE-CHANNEL PULSE GAS DELIVERY SYSTEM	Issued	13/035534	2/25/2011	9348339	5/24/2016
5089.3040-018	MKS Instruments, Inc.	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE M ASS FLOW CONTROL	Issued	12/873,089	8/31/2010	8150553	4/3/2012
5089.3040-019	MKS Instruments, Inc.	APPARATUS AND METHOD FOR PRESSURE FLUCTUATION INSENSITIVE M ASS FLOW CONTROL	Issued	13/425784	3/21/2012	8738187	5/27/2014
086400-0056-US	MKS Instruments, Inc.	CAPACITIVE PRESSURE SENSOR	Issued	13/018,941	2/1/2011	8333118	12/18/2012
086400-0061-US-CIP	MKS Instruments, Inc.	CAPACITIVE PRESSURE SENSOR	Issued	13/248,521	9/29/2011	8561471	10/22/2013
086400-0071-US	MKS Instruments, Inc.	SINGLE-SLOT BAFFLE FOR CAPACITANCE PRESSURE SENSOR	Issued	13/649476	10/11/2012	8887575	11/18/2014

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5089.3081-000	MKS Instruments, Inc.	Method of and Apparatus for Multiple Channel Flow Ratio Controller System	Issued	13/252363	10/4/2011	8849466	9/30/2014
5089.3063-006	MKS Instruments, Inc.	PRESSURE REGULATION IN REMOTE ZONES	Issued	13/271,447	10/12/2011	8689822	4/8/2014
5089.3082-000	MKS Instruments, Inc.	SYSTEM FOR AND METHOD OF FAST PULSE GAS DELIVERY	Issued	13/344387	1/5/2012	10353408	7/16/2019
5089.3083-000	MKS Instruments, Inc.	SYSTEM FOR AND METHOD OF MONITORING FLOW THROUGH MASS FLOW CONTROLLERS IN REAL TIME	Issued	13/354988	1/20/2012	9846074	12/19/2017
5089.3087-000	MKS Instruments, Inc.	SYSTEM FOR AND METHOD OF MONITORING FLOW THROUGH MASS FLOW CONTROLLERS IN REAL TIME	Issued	14/205030	3/11/2014	9557744	1/31/2017
5089.3087-007	MKS Instruments, Inc.	SYSTEM FOR AND METHOD OF MONITORING FLOW THROUGH MASS FLOW CONTROLLERS IN REAL TIME	Issued	15/419047	2/13/2015	10606285	3/31/2020
5089.3084-000	MKS Instruments, Inc.	Method and Apparatus for Self Verification of Pressured Based Mass Flow Controllers	Issued	13/626432	9/25/2012	10031005	7/24/2018
5089.3084-008	MKS Instruments, Inc.	Method and Apparatus for Self-Verification of Pressured Based Mass Flow Controllers	Issued	16/020415	6/27/2018	10801867	10/13/2020
086400-0170-US	MKS Instruments, Inc.	PRESSURE SENSOR WITH REAL TIME HEALTH MONITORING AND COMPENSATION	Issued	14/072188	11/5/2013	9562820	2/7/2017
086400-0170-US-CON	MKS Instruments, Inc.	PRESSURE SENSOR WITH REAL TIME HEALTH MONITORING AND COMPENSATION	Issued	15/343975	11/4/2016	10458870	10/29/2019
086400-0187-US	MKS Instruments, Inc.	MEMS PRESSURE SENSORS WITH INTEGRATED BAFFLES	Issued	14/101207	12/9/2013	10107315	10/23/2018
5089.3085-000	MKS Instruments, Inc.	SYSTEM FOR AND METHOD OF PROVIDING PRESSURE INSENSITIVE SELF VERIFYING MASS FLOW CONTROLLER	Issued	14/180063	2/13/2014	9471066	10/18/2016

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5089.3086-000	MKS Instruments, Inc.	SYSTEM FOR AND METHOD OF MULTIPLE CHANNEL FAST PULSE GAS DELIVERY	Issued	14/269778	5/5/2014	10031531	7/24/2018
086400-0200-US	MKS Instruments, Inc.	MICRO-PIRANI VACUUM GAUGES	Issued	14/224927	3/25/2014	9335231	5/10/2016
5089.3089-000	MKS Instruments, Inc.	SYSTEM FOR AND METHOD FOR FAST PULSE GAS DELIVERY	Issued	14/209216	3/13/2014	10126760	11/13/2018
5089.3076-009	MKS Instruments, Inc.	UPSTREAM VOLUME MASS FLOW VERIFICATION SYSTEMS AND METHODS	Issued	14/304463	6/13/2014	9952078	4/24/2018
105690.091-US	MKS Instruments, Inc.	SURFACE AREA DEPOSITION TRAP	Issued	10/095143	3/11/2002	7252011	8/7/2007
105690.095-US	MKS Instruments, Inc.	PRESSURE TRANSDUCER WITH COMPENSATION FOR THERMAL TRANSIENT S	Issued	10/127630	4/22/2002	6588280	7/8/2003
105690.155-US	MKS Instruments, Inc.	CONTAMINANT DEPOSITION CONTROL BAFFLE FOR A CAPACITIVE PRES SURE TRANSDUCER	Issued	10/440391	5/16/2003	6993973	2/7/2006
105690.159-US	MKS Instruments, Inc.	HIGH-TEMPERATURE REDUCED SIZE MANOMETER	Issued	10/954386	9/30/2004	7201057	4/10/2007
105690.160-US	MKS Instruments, Inc.	LOW OVERHEAD CLOSED LOOP CONTOL SYSTEM	Issued	11/120,396	5/3/2005	7890220	2/15/2011
105690.161-US	MKS Instruments, Inc.	METHOD OF FORMING A SEAL BETWEEN A HOUSING AND DIAPHRAGM OF A CAPACITANCE SENSOR	Issued	10/960158	10/7/2004	7141447	11/28/2006
105690.161-US-DIV	MKS Instruments, Inc.	METHOD OF FORMING A SEAL BETWEEN A HOUSING AND DIAPHRAGM OF A CAPACITANCE SENSOR	Issued	11/543606	10/5/2006	7316163	1/8/2008
105690.162-US	MKS Instruments, Inc.	METHODAND APPARATUS FOR FORMING A REFERENCE PRESSURE WITHIN A CHAMBER OF A CAPACITANCE SENSOR	Issued	10/960153	10/7/2004	7137301	11/21/2006

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
105690.162-US-DIV	MKS Instruments, Inc.	METHODAND APPARATUS FOR FORMING A REFERENCE PRESSURE WITHIN A CHAMBER OF A CAPACITANCE SENSOR	Issued	11/542,316	10/3/2006	7624643	12/1/2009
105690.163-US	MKS Instruments, Inc.	TURBO SUMP FOR USE WITH CAPACITIVE PRESSURE SENSOR	Issued	11/036775	1/14/2005	7204150	4/17/2007
3197-000028-US	MKS Instruments, Inc.	POWER HOLDUP CIRCUIT WITH INCREASED POWER FACTOR	Issued	10/255425	9/26/2002	6788040	9/7/2004
3197-000028-US-CIP	MKS Instruments, Inc.	POWER HOLDUP CIRCUIT WITH INCREASED POWER FACTOR	Issued	10/606206	6/25/2003	6879140	4/12/2005
3197-000047-US	MKS Instruments, Inc.	MULTIRATE PROCESSING FOR METROLOGY OF PLASMA RF SOURCE	Issued	10/192196	7/10/2002	6707255	3/16/2004
3197-000058-US	MKS Instruments, Inc.	RF METROLOGY CHARACTERIZATION FOR FIELD INSTALLATION AND SE RVICEABILITY FOR THE PLASMA PROCESSING INDUSTRY	Issued	10/727081	12/2/2003	6983215	1/3/2006
3197-000059-US	MKS Instruments, Inc.	BROADBAND TECHNIQUES TO REDUCE THE EFFECT OR IMPEDANCE MISM ATCH IN PLASMA CHAMBERS	Issued	11/164303	11/17/2005	9011633	4/21/2015
3197-000060-US	MKS Instruments, Inc.	POWER SUPPLIES HAVING PROTECTION CIRCUITS	Issued	11/108626	4/18/2005	7602127	10/13/2009
3197-000060-US-COA	MKS Instruments, Inc.	PHASE AND FREQUENCY CONTROL OF A RADIO FREQUENCY GENERATOR FROM AN EXTERNAL SOURCE	Issued	12/552603	9/2/2009	8110991	2/7/2012
3197-000060-US-COB	MKS Instruments, Inc.	POWER SUPPLIES HAVING PROTECTION CIRCUITS	Issued	13/241650	9/23/2011	8395322	3/12/2013
3197-000060-US-COC	MKS Instruments, Inc.	PHASE AND FREQUENCY CONTROL OF A RADIO FREQUENCY GENERATOR FROM AN EXTERNAL SOURCE	Issued	13/764285	2/11/2013	9041292	5/26/2015
3197-000061-US	MKS Instruments, Inc.	FREQUENCY INTERFERENCE DETECTION AND CORRECTION	Issued	11/115063	4/26/2005	8102954	1/24/2012

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3197-000061-US-CON	MKS Instruments, Inc.	FREQUENCY INTERFERENCE DETECTION AND CORRECTION	Issued	13/332459	12/21/2011	9294136	3/22/2016
3197-000062-US	MKS Instruments, Inc.	TUNABLE MULTI-PHASE OFFSET DIRECT DIGITAL SYNTHESIZER	Issued	10/914,046	8/6/2004	7506014	3/17/2009
3197-000063-US	MKS Instruments, Inc.	RF POWER AMPLIFIER STABILITY NETWORK	Issued	11/627,002	1/25/2007	7777567	8/17/2010
3197-000065-US	MKS Instruments, Inc.	HIGH RELIABILITY RF GENERATOR ARCHITECTURE	Issued	11/460409	7/27/2006	9214909	12/15/2015
3197-000067-US	MKS Instruments, Inc.	DUAL LOGARITHMIC AMPLIFIER PHASE-MAGNITUDE DETECTOR	Issued	11/468119	8/29/2006	7548741	6/16/2009
3197-000068-US	MKS Instruments, Inc.	SPUTTERING SYSTEM AND METHOD INCLUDING AN ARC DETECTION SYSTEM	Issued	12/174893	7/17/2008	9613784	4/4/2017
3197-000068-US-DVB	MKS Instruments, Inc.	SPUTTERING SYSTEM AND METHOD INCLUDING AN ARC DETECTION SYSTEM	Issued	15/452896	3/8/2017	10607821	3/31/2020
3197-000069-US	MKS Instruments, Inc.	TUNE RANGE LIMITER	Issued	12/236716	9/24/2008	7863996	1/4/2011
3197-000070-US	MKS Instruments, Inc.	HARMONIC DERIVED ARC DETECTOR	Issued	11/675974	2/16/2007	7728602	6/1/2010
3197-000070-US-CON	MKS Instruments, Inc.	HARMONIC DERIVED ARC DETECTOR	Issued	12/764145	4/21/2010	8890537	11/18/2014
3197-000071-US	MKS Instruments, Inc.	MULTIPOINT VOLTAGE AND CURRENT PROBE SYSTEM	Issued	11/763298	1/14/2007	8055203	11/8/2011
3197-000071-US-DIV	MKS Instruments, Inc.	MULTIPOINT VOLTAGE AND CURRENT PROBE SYSTEM	Issued	13/241,633	9/23/2011	8190380	5/29/2012
3197-000072-US	MKS Instruments, Inc.	APPLICATION OF WIDEBAND SAMPLING FOR ARC DETECTION WITH A P ROBABILISTIC MODEL FOR QUANTITATIVELY MEASURING ARC EVENTS	Issued	12/031171	11/13/2008	8264237	9/11/2012
3197-000072-US-CIP	MKS Instruments, Inc.	APPLICATION OF WIDEBAND SAMPLING FOR ARC DETECTION WITH A P ROBABILISTIC MODEL FOR QUANTITATIVELY MEASURING ARC EVENTS	Issued	12/175867	7/18/2008	8289029	10/16/2012

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3197-000072-US-CIP-CPD	MKS Instruments, Inc.	APPLICATION OF WIDEBAND SAMPLING FOR ARC DETECTION WITH A P ROBABILISTIC MODEL FOR QUANTITATIVELY MEASURING ARC EVENTS	Issued	12/727715	3/19/2010	8334700	12/18/2012
3197-000072-US-CON	MKS Instruments, Inc.	APPLICATION OF WIDEBAND SAMPLING FOR ARC DETECTION WITH A P ROBABILISTIC MODEL FOR QUANTITATIVELY MEASURING ARC EVENTS	Issued	13/648,317	10/10/2012	8581597	11/12/2013
3197-000073-US	MKS Instruments, Inc.	RF ENVELOPE PULSING USING PHASE SWITCHING CONTROL OF SWITCH -MODE POWER AMPLIFIERS	Issued	12/166,160	7/1/2008	7872523	1/18/2011
3197-000074-US	MKS Instruments, Inc.	ORTHOGONAL RADIO FREQUENCY VOLTAGE/CURRENT SENSOR WITH HIGH DYNAMIC RANGE	Issued	12/421196	4/9/2009	8040141	10/18/2011
3197-000077-US	MKS Instruments, Inc.	Method for Calibrating a Broadband Voltage/Current Probe	Issued	12/483,717	6/12/2009	8264238	9/11/2012
3197-000097-US	MKS Instruments, Inc.	Radio Frequency Power Control System	Issued	12/366274	2/5/2009	8040068	10/18/2011
3197-000098-US	MKS Instruments, Inc.	VARIABLE CLASS CHARACTERISTIC AMPLIFIER	Issued	12/763640	4/20/2010	8344801	1/1/2013
3197-000099-US	MKS Instruments, Inc.	MULTI-CHANNEL RADIO FREQUENCY (RF) GENERATOR	Issued	12/760771	4/15/2010	8314561	11/20/2012
3197-000100-US	MKS Instruments, Inc.	LCL HIGH POWER COMBINER	Issued	13/222,014	8/31/2011	8791772	7/29/2014
3197-000100-US-CON	MKS Instruments, Inc.	LCL HIGH POWER COMBINER	Issued	14/444133	7/28/2014	9477851	10/25/2016
3197-000101-US	MKS Instruments, Inc.	POWER AMPLIFIER WITH TRANSISTOR INPUT MISMATCHING	Issued	13/222202	8/31/2011	8237501	8/7/2012
3197-000102-US	MKS Instruments, Inc.	POWER DISTORTION-BASED SERVO CONTROL SYSTEMS FOR FREQUENCY TUNING RF POWER	Issued	13/339494	12/29/2011	8576013	11/5/2013

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3197-000102-US-C1	MKS Instruments, Inc.	POWER DISTORTION-BASED SERVO CONTROL SYSTEMS FOR FREQUENCY TUNING RF POWER	Issued	14/044547	10/2/2013	9041471	5/26/2015
3197-000103-US	MKS Instruments, Inc.	Feedback Control and Coherency of Multiple Power Supplies in Radio Frequency Power Delivery Systems for Pulsed Mode Schemes in Thin Film Processing	Issued	13/403656	2/23/2012	8773019	7/8/2014
3197-000103-US-CON	MKS Instruments, Inc.	Feedback Control and Coherency of Multiple Power Supplies in Radio Frequency Power Delivery Systems for Pulsed Mode Schemes in Thin Film Processing	Issued	14/324540	7/7/2014	9509266	11/29/2016
3197-000104-US	MKS Instruments, Inc.	PULSE SYNCHRONIZATION BY MONITORING POWER IN ANOTHER FREQUENCY BAND	Issued	13/834786	3/15/2013	10821542	11/3/2020
3197-000105-US	MKS Instruments, Inc.	WIDEBAND AFT POWER AMPLIFIER SYSTEMS WITH FREQUENCY-BASED OUTPUT TRANSFORMER IMPEDANCE BALANCING	Issued	13/834965	3/15/2013	9214901	12/15/2015
3197-000106-US	MKS Instruments, Inc.	ON THE ENHANCEMENTS OF PLANAR BASED RF SENSOR TECHNOLOGY	Issued	13/828628	3/14/2013	9291649	3/22/2016
3197-000107-US	MKS Instruments, Inc.	System and Methods of Bimodal Automatic Power and Frequency Tuning of RF Generators	Issued	13/803170	3/14/2013	8952765	2/10/2015
3197-000108-US	MKS Instruments, Inc.	SECONDARD PLASMA DETECTION AND REACTION	Issued	13/826571	3/14/2013	9316675	4/19/2016
3197-000109-US	MKS Instruments, Inc.	RF PULSE EDGE SHAPING	Issued	13/663574	10/30/2012	8736377	5/27/2014
3197-000110-US	MKS Instruments, Inc.	VIRTUAL RF SENSOR	Issued	13/832901	3/15/2013	9041480	5/26/2015
3197-000111-US	MKS Instruments, Inc.	DISTORTION CORRECTION BASED FEEDFORWARD CONTROL SYSTEMS AND METHODS FOR RADIO FREQUENCY POWER SOURCES	Issued	13/761,679	2/7/2013	8781415	7/15/2014

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3197-000112-US	MKS Instruments, Inc.	SYNCHRONIZATION OF RF PULSING WITH RF METROLOGY, PROCESSING, AND CONTROL	Issued	13/761955	2/7/2013	9136093	9/15/2015
3197-000113-US	MKS Instruments, Inc.	MULTIPLE RADIO FREQUENCY POWER SUPPLY CONTROL OF FREQUENCY AND PHASE	Issued	14/249972	4/10/2014	9336995	5/10/2016
3197-000116-US	MKS Instruments, Inc.	POWER SUPPLY CIRCUITS INCORPORATING TRANSFORMERS FOR COMBINING OF POWER AMPLIFIER OUTPUTS AND ISOLATION OF LOAD VOLTAGE CLAMPING CIRCUITS	Issued	14/751586	6/26/2015	9748864	8/29/2017
3197-000117-US	MKS Instruments, Inc.	ADAPTIVE PERIODIC WAVEFORM CONTROLLER	Issued	14/953917	11/30/2015	10049857	8/14/2018
3197-000117-US-COC	MKS Instruments, Inc.	ADAPTIVE PERIODIC WAVEFORM CONTROLLER	Issued	16/273595	2/12/2019	10727027	7/28/2020
3197-000117-US-COD	MKS Instruments, Inc.	ADAPTIVE PERIODIC WAVEFORM CONTROLLER	Published	16/905377	6/18/2020		
3197-000117-US-DVB	MKS Instruments, Inc.	ADAPTIVE PERIODIC WAVEFORM CONTROLLER	Issued	16/005761	6/12/2018	10217609	2/26/2019
3197-000118-US	MKS Instruments, Inc.	UNIFIED RF POWER DELIVERY SINGLE INPUT, MULTIPLE OUTPUT CONTROL FOR CONTINUOUS AND PULSE MODE OPERATION	Issued	14/797347	7/13/2015	9721758	8/1/2017
3197-000119-US	MKS Instruments, Inc.	SUPERVISORY CONTROL OF RADIO FRQUENCY (RF) IMPEDANCE TUNING OPERATION	Issued	14/828597	8/18/2015	9876476	1/23/2018
3197-000119-US-DVB	MKS Instruments, Inc.	SUPERVISORY CONTROL OF RADIO FRQUENCY (RF) IMPEDANCE TUNING OPERATION	Issued	15/846922	12/19/2017	10666206	5/26/2020
3197-000120-US	MKS Instruments, Inc.	FEEDBACK CONTROL BY RF WAVEFORM TAILORING FOR ION ENERGY DISTRIBUTION	Issued	14/837512	8/27/2015	10395895	8/27/2019
3197-000120-US-DVB	MKS Instruments, Inc.	FEEDBACK CONTROL BY RF WAVEFORM TAILORING FOR ION ENERGY DISTRIBUTION	Issued	16/509088	7/11/2019	10692698	6/23/2020

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3197-000121-US	MKS Instruments, Inc.	PLASMA RF BIAS CANCELLATION SYSTEM	Issued	15/236661	8/15/2016	9947514	4/17/2018
3197-000122-US	MKS Instruments, Inc.	SOLID STATE IMPEDANCE MATCHING SYSTEM WITH A HYBRID COMBINATION OF A STAND ALONE VARACTOR WITH FET DEVICE SWITCHING	Issued	15/162960	5/24/2016	10229816	3/12/2019
3197-000123-US	MKS Instruments, Inc.	PIECEWISE RF POWER SYSTEMS AND METHODS FOR SUPPLYING PRE-DISTORTED RF BIAS VOLTAGE SIGNALS TO AN ELECTRODE IN A PROCESSING CHAMBER	Issued	15/605055	5/25/2017	10396601	8/27/2019
3197-000123-US-COB	MKS Instruments, Inc.	PIECEWISE RF POWER SYSTEMS AND METHODS FOR SUPPLYING PRE-DISTORTED RF BIAS VOLTAGE SIGNALS TO AN ELECTRODE IN A PROCESSING CHAMBER	Issued	16/506555	7/9/2019	11011940	5/18/2021
3197-000124-US	MKS Instruments, Inc.	PULSED, BIDIRECTIONAL RADIO FREQUENCY SOURCE/LOAD	Issued	15/974947	5/9/2018	10546724	1/28/2020
3197-000124-US-COB	MKS Instruments, Inc.	PULSED, BIDIRECTIONAL RADIO FREQUENCY SOURCE/LOAD	Issued	16/710412	12/11/2019	10930470	2/23/2021
3197-000125-US	MKS Instruments, Inc.	BALANCING RF CIRCUIT AND CONTROL FOR A CROSS-COUPLED SIMO DISTRIBUTION NETWORK	Issued	16/112055	8/24/2018	10536130	1/14/2020
3197-000126-US	MKS Instruments, Inc.	COOLING AND COMPRESSION CLAMP FOR SHORT LEAD POWER DEVICES	Issued	16/115,692	8/29/2018	11076477	7/27/2021
3197-000126-US-DVB	MKS Instruments, Inc.	COOLING AND COMPRESSION CLAMP FOR SHORT LEAD POWER DEVICES	Published	17/322,549	5/17/2021		
3197-000127-US	MKS Instruments, Inc.	ADAPTIVE COUNTER MEASURE CONTROL TWARTING IMD JAMMING IMPAIRMENTS FOR RF PLASMA SYSTEMS	Issued	15/876189	1/21/2018	10304669	5/28/2019

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3197-000128-US	MKS Instruments, Inc.	IMPEDANCE MATCHING NETWORK MODEL BASED CORRECTION SCHEME AND PERFORMANCE REPEATABILITY	Issued	16/164892	10/19/2018	10910197	2/2/2021
3197-000129-US	MKS Instruments, Inc.	ADAPTIVE CONTROL FOR A POWER GENERATOR	Issued	16/297799	3/11/2019	11042140	6/22/2021
3197-000129-US-DVB	MKS Instruments, Inc.	ADAPTIVE CONTROL FOR A POWER GENERATOR	Published	17/232950	4/16/2021		
3197-000130-US	MKS Instruments, Inc.	HIGH SPEED SYNCHRONIZATION OF PLASMA SOURCE / BIAS POWER DELIVERY	Issued	16/452716	6/26/2019	11158488	10/26/2021
3197-000130-US-COB	MKS Instruments, Inc.	HIGH SPEED SYNCHRONIZATION OF PLASMA SOURCE / BIAS POWER DELIVERY	Filed	17/480,993	9/21/2021		
3197-000131-US	MKS Instruments, Inc.	AN EXTREMUM SEEKING CONTROL APPARATUS AND METHOD FOR AUTOMATIC FREQUENCY TUNING FOR RF IMPEDANCE MATCHING	Issued	16/596138	10/8/2019	10741363	8/11/2020
3197-000132-US	MKS Instruments, Inc.	METHOD TO ENHANCE SHEATH FORMATION, EVOLUTION AND PULSE TO PULSE STABILITY IN RF POWERED PLASMA APPLICATIONS	Published	16/986680	8/6/2020		
3197-000133-US	MKS Instruments, Inc.	INTERMODULATION DISTORTION MITIGATION USING ELECTRONIC VARIABLE CAPACITOR	Published	17/073709	10/19/2020	11232931	1/25/2022
3197-000134-US	MKS Instruments, Inc.	Apparatus and Tuning Method for Mitigating RF Load Impedance Variations due to Periodic Disturbances	Filed	17/102598	11/24/2020		
3197-000135-US	MKS Instruments, Inc.	SYSTEM AND METHOD FOR ARC DETECTION USING A BIAS RF GENERATOR SIGNAL	Filed	16/887346	5/29/2020		
3197-000136-US	MKS Instruments, Inc.	Adaptive Pulse Shaping with Post Match Sensor	Filed	17/396,901	8/9/2021		
3197-000137-US	MKS Instruments, Inc.	Switched Capacitor Modulator	Filed	17/111700	12/4/2020		

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3197-000138-US	MKS Instruments, Inc.	GaN Clamp with Uniform Pressure	Filed	17/365,479	7/1/2021		
3197-000139-US	MKS Instruments, Inc.	Impedance Matching In A RF Power Generation System	Filed	17/502,666	10/15/2021		
3197-000141-US-PS1	MKS Instruments, Inc.	Hybrid High-Power & Broadband Variable Impedance Module	Filed	63/231861	8/11/2021		
5089.3003-000	MKS Instruments, Inc.	Feedthrough Leakage Current Detection And Decontamination In Hot Cathode Ionization Gauges	Issued	14/795706	7/9/2015	10132707	11/20/2018
5089.3005-001	MKS Instruments, Inc.	RADIAL SEALING BUTTERFLY VALVE	Issued	14/995727	1/14/2016	9945486	4/17/2018
5089.3007-002	MKS Instruments, Inc.	POLYMER COMPOSITE VACUUM COMPONENTS	Issued	14/994969	1/13/2016	10359332	7/23/2019
5089.3007-010	MKS Instruments, Inc.	POLYMER COMPOSITE VACUUM COMPONENTS	Issued	16/415313	5/17/2019	10876917	12/29/2020
5089.3007-013	MKS Instruments, Inc.	POLYMER COMPOSITE VACUUM COMPONENTS	Published	17/119804	12/11/2020		
5089.3008-000	MKS Instruments, Inc.	IONIZATION PRESSURE GAUGE WITH BIAS VOLTAGE AND EMISSION CURRENT CONTROL AND MEASUREMENT	Issued	14/795729	7/9/2015	9927317	3/27/2018
5089.3010-001	MKS Instruments, Inc.	COLD CATHODE IONIZATION VACUUM GAUGE WITH MULTIPLE CATHODES	Issued	15/499064	4/27/2017	10337940	7/2/2019
5089.3011-000	MKS Instruments, Inc.	TRANS-IMPEDANCE AMPLIFIER WITH INCREASED DYNAMIC RANGE	Issued	15/153915	5/13/2016	9806685	10/31/2017
5089.3012-000	MKS Instruments, Inc.	METHODS AND APPARATUS FOR WIDE RANGE MASS FLOW VERIFICATION	Issued	15/380682	12/15/2016	10031004	7/24/2018
5089.3013-001	MKS Instruments, Inc.	ANODE ELECTRODE SHIELD FOR INVERTED MAGNETRON COLD CATHODE IONIZATION GAUGE	Issued	15/834625	12/7/2017	10969290	4/6/2021
5089.3015-000	MKS Instruments, Inc.	ROBUST ION SOURCE	Issued	15/621241	6/13/2017	10541122	1/21/2020
5089.3015-008	MKS Instruments, Inc.	ROBUST ION SOURCE	Issued	16/713713	12/13/2019	10892153	1/12/2021

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5089.3017-000	MKS Instruments, Inc.	THERMAL CONDUCTIVITY GAUGE	Issued	15/955266	4/17/2018	10845263	11/24/2020
5089.3017-006	MKS Instruments, Inc.	THERMAL CONDUCTIVITY GAUGE	Published	16/953923	11/20/2020		
5089.3018-000	MKS Instruments, Inc.	Methods and Apparatus for Multiple Channel Mass Flow and Ratio Control Systems	Issued	15/973190	5/7/2018	10698426	6/30/2020
5089.3019-000	MKS Instruments, Inc.	METHODS AND APPARATUS FOR PULSE GAS DELIVERY WITH ISOLATION VALVES	Issued	15/887447	2/2/2018	10649471	5/12/2020
5089.3020-000	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PARTIAL PRESSURE DETECTION	Issued	15/975473	5/9/2018	10914717	2/9/2021
5089.3021-002	MKS Instruments, Inc.	GAS ANALYSIS WITH AN INVERTED MAGNETRON SOURCE	Issued	16/397436	4/29/2019	10928265	2/23/2021
5089.3022-000	MKS Instruments, Inc.	Method and Apparatus for Pulse Gas Delivery Using an External Pressure Trigger	Issued	16/124669	9/7/2018	10725484	7/28/2020
5089.3022-003	MKS Instruments, Inc.	Method and Apparatus for Pulse Gas Delivery Using an External Pressure Trigger	Published	16/898016	6/10/2020		
5089.3089-009	MKS Instruments, Inc.	SYSTEM FOR AND METHOD FOR FAST PULSE GAS DELIVERY	Issued	16/168812	10/23/2018	10969799	4/6/2021
5089.3090-000	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PRESSURE-BASED FLOW MEASUREMENT IN NON-CRITICAL FLOW CONDITIONS	Issued	15/244264	8/23/2016	10514712	12/24/2019
5089.3091-000	MKS Instruments, Inc.	Resonant Transmission Line To Deliver Precision RF Voltage	Issued	16/192223	11/15/2018	10600628	3/24/2020
5089.3093-000	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PULSE GAS DELIVERY	Published	16/376861	4/5/2019		
5089.3094-000	MKS Instruments, Inc.	Method and Apparatus for Pulse Gas Delivery with Concentration Measurement	Published	16/742172	1/14/2020		
5089.3095-000	MKS Instruments, Inc.	Methods and Apparatus of Pressure Based Flow Ratio Controller	Published	16/800363	2/25/2020	11187561	11/30/2021

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5089.3096-000	MKS Instruments, Inc.	Gas Analyzer System with Ion Source	Issued	16/698178	11/27/2019	10948456	3/16/2021
5089.3097-001	MKS Instruments, Inc.	Thermal Conductivity Gauge	Filed	17/453,450	11/3/2021		
5089.3099-001	MKS Instruments, Inc.	Pressure Control Using an External Pressure Trigger	Filed	17/452,953	10/29/2021		
5089.3100-000	MKS Instruments, Inc.	New Technology Load-Lock Gauge	Filed	17/154698	1/21/2021		
5089.3102-000	MKS Instruments, Inc.	Methods and Apparatus for Pressure Based Mass Flow Ratio Control Using Differential Pressure Sensors	Filed	17/342341	6/8/2021		
5089.3104-000	MKS Instruments, Inc.	BINARY GAS PURITY ANALYZER	Filed	17/452,030	10/22/2021		
ASX-047-US-CP	MKS Instruments, Inc.	OZONATED WATER FLOW AND CONCENTRATION CONTROL APPARATUS AND METHOD	Issued	10/133237	4/26/2002	6805791	10/19/2004
ASX-059-US	MKS Instruments, Inc.	METHODS AND APPARATUS FOR CALIBRATION AND METROLOGY FOR AN INTEGRATED RF GENERATOR SYSTEM	Issued	10/373163	2/24/2003	6781317	8/24/2004
ASX-061-US	MKS Instruments, Inc.	TOROIDAL LOW-FIELD REACTIVE GAS AND PLASMA SOURCE HAVING A DIELECTRIC VACUUM VESSELT	Issued	10/417408	4/16/2003	6872909	3/29/2005
ASX-061-US-C1	MKS Instruments, Inc.	TOROIDAL LOW-FIELD REACTIVE GAS AND PLASMA SOURCE HAVING A DIELECTRIC VACUUM VESSELT	Issued	11/058620	2/15/2005	7501600	3/10/2009
ASX-061-US-C2	MKS Instruments, Inc.	TOROIDAL LOW-FIELD REACTIVE GAS AND PLASMA SOURCE HAVING A DIELECTRIC VACUUM VESSELT	Issued	11/684,916	3/12/2007	7,659,489	2/9/2010
ASX-062-US	MKS Instruments, Inc.	METHODS AND SYSTEMS FOR STABILIZING AN AMPLIFIER	Issued	10/623414	7/18/2003	7075366	7/11/2006
ASX-062-US-C1	MKS Instruments, Inc.	METHODS AND SYSTEMS FOR STABILIZING AN AMPLIFIER	Issued	11/443884	5/31/2006	7248113	7/24/2007

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ASX-062-US-C1CP	MKS Instruments, Inc.	METHODS AND SYSTEMS FOR STABILIZING AN AMPLIFIER	Issued	11/770,493	6/28/2007	7639015	12/29/2009
ASX-062-US-C1CP2	MKS Instruments, Inc.	METHODS AND SYSTEMS FOR STABILIZING AN AMPLIFIER	Issued	12/647,939	12/28/2009	8461842	6/11/2013
ASX-063-US	MKS Instruments, Inc.	CONTROL SYSTEM FOR A SPUTTERING SYSTEM	Issued	10/642505	8/18/2003	6995545	2/7/2006
ASX-064-US	MKS Instruments, Inc.	CONTROL OF PLASMA TRANSITIONS IN SPUTTER PROCESSING SYSTEMS	Issued	10/642509	8/18/2003	6967305	11/22/2005
ASX-064-US-C1	MKS Instruments, Inc.	CONTROL OF PLASMA TRANSITIONS IN SPUTTER PROCESSING SYSTEMS	Issued	11/216,424	8/30/2005	8,089,026	1/3/2012
ASX-065-US-CON	MKS Instruments, Inc.	POWER SUPPLY CONTROL LOOP WITH MULTIPLE LEVELING MODES	Issued	11/696569	4/4/2007	7336511	2/26/2008
ASX-066-US	MKS Instruments, Inc.	OZONE CONCENTRATION SENSOR	Issued	10/799331	3/12/2004	7502114	3/10/2009
ASX-066-US-C1	MKS Instruments, Inc.	OZONE CONCENTRATION SENSOR	Issued	12/397,155	3/3/2009	8,085,401	12/27/2011
ASX-066-US-CON	MKS Instruments, Inc.	OZONE CONCENTRATION SENSOR	Issued	13/117,831	5/27/2011	8339607	12/25/2012
ASX-067-US	MKS Instruments, Inc.	CONTROL CIRCUIT FOR SWITCHING POWER SUPPLY	Issued	11/077555	3/9/2005	7616462	11/10/2009
ASX-069-US	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PREVENTING INSTABILITIES IN RADIO- FREQUENCY PLASMA PROCESSING	Issued	10/947397	9/22/2004	7304438	12/4/2007
ASX-069-US-CIP	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PREVENTING INSTABILITIES IN RADIO- FREQUENCY PLASMA PROCESSING	Issued	11/554,996	10/31/2006	7755300	7/13/2010
ASX-071-US	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PROCESSING METAL BEARING GASES	Issued	11/269917	11/8/2005	7569790	8/5/2009
ASX-071-US-DIV	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PROCESSING METAL BEARING	Issued	12/511,785	7/29/2009	8124906	2/28/2012

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		GASES					
ASX-079-US	MKS Instruments, Inc.	METHOD AND APPARATUS OF SIGNAL PROCESSING FOR USE IN SPECTR OMETRY USING AN IMPROVED APODIZATION FUNCTION	Issued	11/074307	3/7/2005	7546208	6/9/2009
ASX-080-US	MKS Instruments, Inc.	METHOD AND APPARATUS OF PROVIDING POWER TO IGNITE AND SUSTA IN A PLASMA IN A REACTIVE GAS GENERATOR	Issued	11/268692	11/7/2005	7353771	4/8/2008
ASX-081-US	MKS Instruments, Inc.	POWER SUPPLY INCLUDING TRANSFORMER-LESS HIGH VOLTAGE POWER OSCILLATORS FOR OZONE GENERATION	Issued	11/503,662	8/14/2006	8226900	7/24/2012
ASX-081-US-CON	MKS Instruments, Inc.	POWER SUPPLY INCLUDING TRANSFORMER-LESS HIGH VOLTAGE POWER OSCILLATORS FOR OZONE GENERATION	Issued	13/528,580	6/20/2012	8641978	2/4/2014
ASX-083-US	MKS Instruments, Inc.	OZONE SYSTEM FOR MULTI-CHAMBER TOOLS	Issued	11/482,508	7/7/2006	7892502	2/22/2011
ASX-083-US-DIV	MKS Instruments, Inc.	OZONE SYSTEM FOR MULTI-CHAMBER TOOLS	Issued	13/008,641	1/18/2011	8480862	7/9/2013
ASX-084-US	MKS Instruments, Inc.	MULTIGAS MONITORING AND DETECTION SYSTEM	Issued	11/240799	9/30/2005	7372573	5/13/2008
ASX-084-US-CON	MKS Instruments, Inc.	MULTIGAS MONITORING AND DETECTION SYSTEM	Issued	12/119244	5/12/2008	7595887	9/29/2009
ASX-086-US	MKS Instruments, Inc.	RADIO FREQUENCY POWER DELIVERY SYSTEM	Issued	11/554979	10/31/2006	7764140	7/27/2010
ASX-086-US-C1	MKS Instruments, Inc.	RADIO FREQUENCY POWER DELIVERY SYSTEM	Issued	12/786763	5/25/2010	8633782	1/21/2014
ASX-086-US-CP-C1	MKS Instruments, Inc.	RADIO FREQUENCY POWER DELIVERY SYSTEM	Issued	13/368920	2/8/2012	8710926	4/29/2014
ASX-088-US	MKS Instruments, Inc.	MANUFACTURING PROCESS END POINT DETECTION	Issued	11/683,218	3/7/2007	7630786	12/8/2009
ASX-091-US	MKS Instruments, Inc.	INDUCTIVELY-COUPLED PLASMA SOURCE	Issued	11/639680	12/15/2006	7969096	6/28/2011

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ASX-092-US	MKS Instruments, Inc.	APPLICATORS AND COOLING SYSTEMS FOR A PLASMA DEVICE	Issued	11/541,388	9/29/2006	8053700	11/8/2011
ASX-092-US-CIP	MKS Instruments, Inc.	APPLICATORS AND COOLING SYSTEMS FOR A PLASMA DEVICE	Issued	11/541,388	9/29/2006	8053700	11/8/2011
ASX-117-US	MKS Instruments, Inc.	DEVICES, SYSTEMS, AND METHODS FOR CARBONATION OF DEIONIZED WATER	Issued	11/873,776	10/17/2007	7731161	6/8/2010
ASX-117-US-CP	MKS Instruments, Inc.	DEVICES, SYSTEMS, AND METHODS FOR CARBONATION OF DEIONIZED WATER	Issued	12/792,470	6/2/2010	8448925	5/28/2013
ASX-117-US-CPDV	MKS Instruments, Inc.	DEVICES, SYSTEMS, AND METHODS FOR CARBONATION OF DEIONIZED WATER	Issued	13/871,626	4/26/2013	8727323	5/20/2014
ASX-117-US-DIV	MKS Instruments, Inc.	DEVICES, SYSTEMS, AND METHODS FOR CARBONATION OF DEIONIZED WATER	Issued	13/871,626	4/26/2013	8727323	5/20/2014
ASX-123-US	MKS Instruments, Inc.	CORNER CUBE RETROREFLECTOR MOUNT	Issued	11/943,084	11/20/2007	8083359	12/27/2011
ASX-124-US	MKS Instruments, Inc.	TOROIDAL PLASMA CHAMBER FOR HIGH GAS FLOW RATE PROCESS	Issued	12/738314	4/16/2010	9275839	3/1/2016
ASX-129-US	MKS Instruments, Inc.	SIGNAL OVERSAMPLING FOR IMPROVED S:N REFLECTOR MOVEMENT SYS TEM	Issued	08/202300	2/25/1994	7436234	10/14/2008
ASX-134-US	MKS Instruments, Inc.	Method and System for Controlling Radio Frequency Power	Issued	12/491538	6/25/2009	8659335	2/25/2014
ASX-134-US-D1	MKS Instruments, Inc.	Method and System for Controlling Radio Frequency Power	Issued	14/151321	1/9/2014	8912835	12/16/2014
ASX-134-US-DIV	MKS Instruments, Inc.	Method and System for Controlling Radio Frequency Power	Issued	14/151321	1/9/2014	8912835	12/16/2014
ASX-140-US	MKS Instruments, Inc.	METHOD FOR CHEMICAL-MECHANICAL POLISH CONTROL IN SEMICONDUC TOR MANUFACTURING	Issued	10/401,336	3/28/2003	6884147	4/26/2005

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ASX-147-US	MKS Instruments, Inc.	Method and Apparatus of Providing Power To Ignite and Sustain a Plasma in a Reactive Gas Generator	Issued	12/394904	2/27/2009	8692466	4/8/2014
ASX-154-US	MKS Instruments, Inc.	A Wide-Dynamic Range Electrometer with a Fast Response	Issued	12/504652	7/16/2009	8278909	10/2/2012
ASX-154-US-C1	MKS Instruments, Inc.	A Wide-Dynamic Range Electrometer with a Fast Response	Issued	13/328765	12/16/2011	8415942	4/9/2013
ASX-155-US	MKS Instruments, Inc.	METHOD AND APPARATUS FOR SILOXANE MEASUREMENTS IN A BIOGAS	Issued	14/637094	3/3/2015	9372152	6/21/2016
ASX-155-US-add	MKS Instruments, Inc.	METHOD AND APPARATUS FOR SILOXANE MEASUREMENTS IN A BIOGAS	Issued	12/720542	3/9/2010	8462347	6/11/2013
ASX-155-US-CP	MKS Instruments, Inc.	METHOD AND APPARATUS FOR SILOXANE MEASUREMENTS IN A BIOGAS	Issued	13/743671	1/17/2013	9001335	4/7/2015
ASX-155-US-CPC1	MKS Instruments, Inc.	METHOD AND APPARATUS FOR SILOXANE MEASUREMENTS IN A BIOGAS	Issued	14/637094	3/3/2015	9372152	6/21/2016
ASX-157-US	MKS Instruments, Inc.	Reduction of Copper or Trace Metal Contaminants in Plasma Electrolytic Oxidation Coatings	Issued	12/794470	6/4/2010	8888982	11/18/2014
ASX-158-US	MKS Instruments, Inc.	MONITORING, DETECTING AND QUANTIFYING CHEMICAL COMPOUNDS IN A SAMPLE	Issued	12/880,903	9/13/2010	8645082	2/4/2014
ASX-159-US	MKS Instruments, Inc.	CONTROLLING A DISCRETE-TYPE MANUFACTURING PROCESS WITH A MULTIVARIATE MODEL	Issued	12/947651	11/16/2010	8855804	10/7/2014
ASX-160-US	MKS Instruments, Inc.	MEASURING AND CONTROLLING PARAMETERS OF A PLASMA GENERATOR	Issued	12/963,209	12/8/2010	8624501	1/7/2014

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ASX-161A-US	MKS Instruments, Inc.	MASS SPECTROMETRY FOR GAS ANALYSIS WITH A ONE-STAGE CHARGED PARTICLE DEFLECTOR LENS BETWEEN A CHARGED PARTICLE SOURCE AND A CHARGED PARTICLE ANALYZER BOTH OFFSET FROM A CENTRAL AXIS OF THE DEFLECTOR LENS	Issued	13/155,890	6/8/2011	8796620	8/5/2014
ASX-161B-US	MKS Instruments, Inc.	MASS SPECTROMETRY FOR A GAS ANALYSIS WITH A TWO-STAGE CHARGED PARTICLE DEFLECTOR LENS BETWEEN A CHARGED PARTICLE SOURCE AND A CHARGED PARTICLE ANALYZER BOTH OFFSET FROM A CENTRAL AXIS OF THE DEFLECTOR LENS	Issued	13/155,894	6/8/2011	8796638	8/5/2014
ASX-161C-US	MKS Instruments, Inc.	MASS SPECTROMETRY FOR GAS ANALYSIS IN WHICH BOTH A CHARGED PARTICLE SOURCE AND A CHARGED PARTICLE ANALYZER ARE OFFSET FROM AN AXIS OF A DEFLECTOR LENS, RESULTING IN REDUCED BASELINE SIGNAL OFFSETS	Issued	13/155,896	6/8/2011	8450681	5/28/2013
ASX-162-US	MKS Instruments, Inc.	System to Remove Dissolved Gases Selectively From Liquids	Issued	13/421346	3/15/2012	8882885	11/11/2014
ASX-166-US	MKS Instruments, Inc.	METHOD AND SYSTEM FOR SHOOT-THROUGH PROTECTION	Issued	13/106,920	5/13/2011	8749939	6/10/2014
ASX-167-US	MKS Instruments, Inc.	ADJUSTABLE RESONANT BUCK CONVERTER	Issued	13/211,892	8/17/2011	8520413	8/27/2013
ASX-169-US-D2	MKS Instruments, Inc.	TOROIDAL PLASMA CHANNEL WITH VARYING CROSS-SECTION AREAS ALONG THE CHANNEL	Issued	15/646017	11/14/2012	10930474	2/23/2021
ASX-172-US	MKS Instruments, Inc.	PRESSURE-LESS OZONIZED DI-WATER (DI03) RECIRCULATION RECLAIM SYSEM	Issued	13/836842	3/15/2013	9056262	6/16/2015

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
ASX-172-US-D1	MKS Instruments, Inc.	PRESSURE-LESS OZONIZED DI-WATER (DI03) RECIRCULATION RECLAIM SYSEM	Issued	14/710255	5/12/2015	9597613	3/21/2017
ASX-172-US-D2	MKS Instruments, Inc.	PRESSURE-LESS OZONIZED DI-WATER (DI03) RECIRCULATION RECLAIM SYSEM	Issued	15/423267	2/2/2017	9796603	10/24/2017
ASX-173-US	MKS Instruments, Inc.	Toroidal Plasma Abatement Apparatus	Issued	14/212398	3/14/2014	9630142	4/25/2017
ASX-173-US-D1	MKS Instruments, Inc.	Toroidal Plasma Abatement Apparatus	Issued	15/484072	4/10/2017	9991098	6/5/2018
ASX-173-US-DIV	MKS Instruments, Inc.	Toroidal Plasma Abatement Apparatus	Issued	15/484072	4/10/2017	9991098	6/5/2018
ASX-174-US	MKS Instruments, Inc.	USE OF A RETRO-REFLECTOR AS A QUANTUM CASCADE LASER (QCL) EXTERNAL CAVITY MIRROR	Issued	14/275309	5/12/2014	9310294	4/12/2016
ASX-179-US	MKS Instruments, Inc.	APPARATUS AND METHOD FOR PLASMA IGNITION WITH A SELF-RESONATING DEVICE	Issued	14/616089	2/6/2015	9736920	8/15/2017
ASX-179-US-C1	MKS Instruments, Inc.	APPARATUS AND METHOD FOR PLASMA IGNITION WITH A SELF-RESONATING DEVICE	Issued	15/643060	7/6/2017	10076020	9/11/2018
ASX-181-US	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PROCESSING DIELECTRIC MATERIALS	Issued	14/978091	12/22/2015	10071521	9/11/2018
ASX-181-US-D1	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PROCESSING DIELECTRIC MATERIALS	Issued	16/101370	8/10/2018	10940635	3/9/2021
ASX-182-US	MKS Instruments, Inc.	METHOD AND APPARATUS FOR VALVE DEPOSITION CLEANING AND PREVENTION BY PLASMA DISCHARGE	Issued	14/994668	1/13/2016	10337105	7/2/2019
ASX-182-US-CP	MKS Instruments, Inc.	METHOD AND APPARATUS FOR VALVE DEPOSITION CLEANING AND PREVENTION BY PLASMA DISCHARGE	Issued	15/404457	1/12/2017	10535506	1/14/2020

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
ASX-182-US-CP-DV	MKS Instruments, Inc.	METHOD AND APPARATUS FOR VALVE DEPOSITION CLEANING AND PREVENTION BY PLASMA DISCHARGE	Issued	16/679640	11/11/2019	11024489	6/1/2021
ASX-182-US-CP-DV-C1	MKS Instruments, Inc.	METHOD AND APPARATUS FOR VALVE DEPOSITION CLEANING AND PREVENTION BY PLASMA DISCHARGE	Published	17/107146	11/30/2020		
ASX-183-US	MKS Instruments, Inc.	PLASMA GENERATOR	Issued	11/490555	7/21/2006	7485827	2/3/2009
ASX-185-US	MKS Instruments, Inc.	SYSTEM TO DELIVER HIGHLY DILUTE NH4-OH FOR WAFER RINSING IN SEMICONDUCTOR MANUFACTURING	Issued	15/808471	11/9/2017	10773221	9/15/2020
ASX-185-US-C1	MKS Instruments, Inc.	SYSTEM TO DELIVER HIGHLY DILUTE NH4-OH FOR WAFER RINSING IN SEMICONDUCTOR MANUFACTURING	Filed	17/005560	8/28/2020		
ASX-187-US	MKS Instruments, Inc.	Dielectric Torus for Improved Plasma Resistance	Issued	16/035551	7/13/2018	11019715	5/25/2021
ASX-187-US-C1	MKS Instruments, Inc.	Dielectric Torus for Improved Plasma Resistance	Published	17/237913	4/22/2021		
ASX-188-US	MKS Instruments, Inc.	Polygonal Toroidal Plasma Source	Issued	16/406339	5/8/2019	10553403	2/4/2020
ASX-189-US	MKS Instruments, Inc.	Systems and Methods for Generating a Dissolved Ammonia Solution with Reduced Dissolved Carrier Gas and Oxygen Content	Published	16/842515	4/7/2020		
ASX-190-US	MKS Instruments, Inc.	Valve Apparatuses and Related Methods for Reactive Process Gas Isolation and Facilitating Purge During Isolation	Published	16/849871	4/15/2020		
ASX-191-US	MKS Instruments, Inc.	ENDPOINT DETECTION FOR COMBINED CHAMBER AND FORELINE CLEAN	Filed	16/990396	8/11/2020		
ASX-192-US	MKS Instruments, Inc.	Method and Apparatus for Plasma Generation	Filed	17/391,724	8/2/2021		

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ASX-193-US	MKS Instruments, Inc.	Method and Apparatus for Impedance Matching in a Power Delivery System for Remote Plasma Generation	Filed	17/406378	8/19/2021		
HPS-061USU1	MKS Instruments, Inc.	Vapor delivery system	Issued	10/196,572	7/16/2002	6895178	5/17/2005
HPS-064US01	MKS Instruments, Inc.	Pressure controlled degas system for hot cathode ionization pressure gauges	Issued	10/205,014	7/25/2002	6756785	6/29/2004
HPS-066US01	MKS Instruments, Inc.	Integrated absolute and differential pressure transducer	Issued	10/721,817	11/24/2003	6909975	6/21/2005
HPS-066USC2	MKS Instruments, Inc.	Integrated absolute and differential pressure transducer	Issued	11/759,202	6/6/2007	7477996	1/13/2009
HPS-066USC3	MKS Instruments, Inc.	Integrated absolute and differential pressure transducer	Issued	12/353201	1/13/2009	7962294	6/14/2011
HPS-067US01	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PREVENTING PRODUCTS OF TiCL4 and NH3 OR OTHER FEED GAS REACTIONS FROM DAMAGING VACUUM PUMPS IN TIN OR OTHER DEPOSITION SYSTEM	Issued	11/060,071	2/16/2005	7455720	11/25/2008
HPS-070US01	MKS Instruments, Inc.	METHOD AND APPARATUS FOR PREVENTING ALD REACTANTS FROM DAMAGING VACUUM PUMPS	Issued	11/136610	5/23/2005	8679287	3/25/2014
HPS-071US01	MKS Instruments, Inc.	FAST-ACTING PNEUMATIC DIAPHRAGM VALVE	Issued	11/456,044	7/6/2006	8172197	5/8/2012
HPS-073US01	MKS Instruments, Inc.	MULTIPLE HEATER CONTROL SYSTEM WITH EXPALDABLE MODULAR FUNCTIONALITY	Issued	11/278,800	4/5/2006	7932480	4/26/2011
HPS-073USG1	MKS Instruments, Inc.	MULTIPLE HEATER CONTROL SYSTEM WITH EXPANDABLE MODULAR FUNCTIONALITY	Issued	13/048,824	3/15/2011	8541716	9/24/2013
HPS-081USU1	MKS Instruments, Inc.	ISOLATION VALVE WITH CORROSION PROTECTED AND HEAT TRANSFER ENHANCED VALVE ACTUATOR AND CLOSURE APPARATUS AND METHOD	Issued	12/194,463	8/19/2008	8196893	6/12/2012

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
HPS-082USU1	MKS Instruments, Inc.	REACTIVE CHEMICAL CONTAINMENT SYSTEM (RCCS)	Issued	12/645,455	12/22/2009	7871587	1/18/2011
HPS-083US01	MKS Instruments, Inc.	TWO-STAGE, SLOW-START VALVE APPARATUS AND METHOD	Issued	12/968,551	12/15/2010	8671987	3/18/2014
HPS-083USG1	MKS Instruments, Inc.	METHOD OF TWO-STAGE FLOW CONTROL	Issued	14/162514	1/23/2014	9200711	12/1/2015
HPS-084US01	MKS Instruments, Inc.	HIGH-EFFICIENCY, HOT TRAP APPARATUS AND METHOD	Issued	12/983,162	12/31/2010	8241596	8/14/2012
HPS-086USU1	MKS Instruments, Inc.	COLD CATHODE GAUGE FAST RESPONSE SIGNAL CIRCUIT	Issued	13/559347	7/26/2012	8928329	1/6/2015
HPS-087US01	MKS Instruments, Inc.	POWDER AND DEPOSITION CONTROL IN THROTTLE VALVE	Issued	14/075163	11/8/2013	9314824	4/19/2016
HPS-088USU1	MKS Instruments, Inc.	CORROSION AND DEPOSITION PROTECTED VALVE APPARATUS AND METHOD	Issued	14/061553	10/23/2013	9206919	12/8/2015
HPS-090US01	MKS Instruments, Inc.	STREAMLINED HEATER ASSEMBLY WITH FRONT AND INTERMEDIATE DAISY CHAIN POWER INJECTION, SHIELDING, AND WATER RESISTANT FEATURES	Issued	14/263779	4/28/2014	9686821	6/20/2017
HPS-092US01	MKS Instruments, Inc.	CUT TO LENGTH/TRIMMABLE HEATERS	Issued	14/794550	7/8/2015	10021739	7/10/2018
MAC-001-US	MKS Instruments, Inc.	OZONE GENERATOR	Issued	13/153649	6/6/2011	9039985	5/26/2015
MAC-001-US-CON	MKS Instruments, Inc.	OZONE GENERATOR	Issued	14/705439	5/6/2015	9580318	2/28/2017
MAC-003-US	MKS Instruments, Inc.	COMPACT, CONFIGURABLE POWER SUPPLY FOR ENERGIZING OZONE-PRODUCING CELLS	Issued	13/432415	3/28/2012	9302912	4/5/2016
MAC-003-US-DIV	MKS Instruments, Inc.	COMPACT, CONFIGURABLE POWER SUPPLY FOR ENERGIZING OZONE-PRODUCING CELLS	Issued	15/056330	2/29/2016	9865426	1/9/2018
MAC-004-US-CIP	MKS Instruments, Inc.	MICROWAVE PLASMA APPLICATOR WITH IMPROVED POWER UNIFORMITY	Issued	14/645837	3/12/2015	9653266	5/16/2017

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MAC-006-US	MKS Instruments, Inc.	STRESS RELIEF STRUCTURES FOR SENSORS AND THEIR PACKAGING	Issued	14/616017	2/6/2015	9499393	11/22/2016
MAC-006-US-DIV	MKS Instruments, Inc.	STRESS RELIEF STRUCTURES FOR SENSORS AND THEIR PACKAGING	Issued	15/297661	10/19/2016	9850123	12/26/2017
MAC-008-US-DIV	MKS Instruments, Inc.	ACTIVELY COOLED VACUUM ISOLATION VALVE	Issued	16/408752	5/10/2019	11054058	7/6/2021
MAC-009-US	MKS Instruments, Inc.	COMPACT MICROWAVE PLASMA APPLICATOR UTILIZING CONJOINING ELECTRIC FIELDS	Issued	15/166777	5/27/2016	9831066	11/28/2017
MAC-010-US	MKS Instruments, Inc.	VALVE CONDUCTANCE CONTROL SYSTEM	Issued	15/581875	4/28/2017	10557736	2/11/2020
MAC-010-US-CON	MKS Instruments, Inc.	VALVE CONDUCTANCE CONTROL SYSTEM	Published	16/724844	12/23/2019		
MAC-012-US	MKS Instruments, Inc.	MICROWAVE APPLICATOR WITH SOLID-STATE GENERATOR POWER SOURCE	Issued	15/460611	3/16/2017	10790118	9/29/2020
MAC-012-US-CON	MKS Instruments, Inc.	MICROWAVE APPLICATOR WITH SOLID-STATE GENERATOR POWER SOURCE	Published	16/993775	8/14/2020	11222770	1/11/2022
MAC-013-US	MKS Instruments, Inc.	APPARATUS AND METHOD FOR IGNITION OF A PLASMA SYSTEM AND FOR MONITORING HEALTH OF THE PLASMA SYSTEM	Issued	15/705643	9/15/2017	10505348	12/10/2019
MAC-013-US-CON	MKS Instruments, Inc.	APPARATUS AND METHOD FOR IGNITION OF A PLASMA SYSTEM AND FOR MONITORING HEALTH OF THE PLASMA SYSTEM	Issued	16/682693	11/13/2019	10910798	2/2/2021
MAC-014-US	MKS Instruments, Inc.	Apparatus and Method for Thermal Insulation of High-Temperature Pressure Sensors	Issued	16/019832	6/27/2018	10782200	9/22/2020
MAC-015-US	MKS Instruments, Inc.	Converter Control Apparatus and Method for High Stability and Power Factor Improvement in the Presence of High Source Impedances	Issued	16/261900	1/30/2019	10547237	1/28/2020
MAC-016-US	MKS Instruments, Inc.	MICROWAVE MAGNETRON WITH CONSTANT ANODIC IMPEDANCE AND SYSTEMS USING THE SAME	Published	16/593942	10/4/2019	11255016	2/22/2022

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MAC-017-US01	MKS Instruments, Inc.	SYSTEM AND METHOD OF POWER GENERATION WITH PHASE LINKED SOLID-STATE GENERATOR MODULES	Published	16/881390	5/22/2020		
MAC-017-US02	MKS Instruments, Inc.	SYSTEM AND METHOD OF POWER GENERATION WITH PHASE LINKED SOLID-STATE GENERATOR MODULES	Published	16/881458	5/22/2020		
MAS-001-US	MKS Instruments, Inc.	SOLID STATE MICROWAVE GENERATOR AND POWER AMPLIFIER	Issued	14/732114	6/5/2015	9595930	3/14/2017
MKI-005-US	MKS Instruments, Inc.	METHOD AND APPARATUS FOR FLUORINE GENERATION AND RECIRCULAT ION	Issued	10/313,516	12/6/2002	7238266	7/3/2007
MKS 1000-US	MKS Instruments, Inc.	METHOD AND APPARATUS FOR TWO PHASE STRUCTURED MESSAGE TO TA GGED MESSAGE TRANSLATION	Issued	09/847937	5/2/2001	7072985	7/4/2006
MKS 1001-US-CIP	MKS Instruments, Inc.	METHOD AND APPARATUS FOR MONITORING HOST TO TOOL COMMUNICAT IONS	Issued	09/935213	8/22/2001	7200671	4/3/2007
MKS 1003-US	MKS Instruments, Inc.	GRAPHICAL USER INTERFACE WITH PROCESS QUALITY INDICATOR	Issued	10/617355	7/11/2003	6993404	1/31/2006
MKS 1005-2	MKS Instruments, Inc.	FAILSAFE SWITCHING OF INTELLIGENT CONTROLLER METHOD AND DEV ICE	Issued	10/948,085	9/23/2004	7219255	5/15/2007
MKS 1007-1	MKS Instruments, Inc.	ADDRESS-TRANSPARENT DEVICE AND METHOD	Issued	11/178626	7/11/2005	7787477	8/31/2010
PCV-002-US-CIP	MKS Instruments, Inc.	MULTIPLEX TUNABLE FILTER SPECTROMER	Issued	12/755980	4/7/2010	8896839	11/25/2014
PCV-002-US-CON	MKS Instruments, Inc.	MULTIPLEX TUNABLE FILTER SPECTROMER	Issued	14/518974	10/20/2014	9651422	5/16/2017
PCV-003-US	MKS Instruments, Inc.	SYSTEMS, METHODS, AND APPARATUS FOR OPTICAL HYDROCARBON GAS COMPOSITION MONITORING	Issued	14/753366	6/29/2015	9958380	5/1/2018

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PCV-004-US	MKS Instruments, Inc.	SYSTEMS AND METHODS FOR PRESSURE DIFFERENTIAL MOLECULAR SPECTROSCOPY OF COMPRESSIBLE FLUIDS	Issued	14/511842	10/10/2014	9488570	11/8/2016
PCV-004-US-DIV	MKS Instruments, Inc.	SYSTEMS AND METHODS FOR PRESSURE DIFFERENTIAL MOLECULAR SPECTROSCOPY OF COMPRESSIBLE FLUIDS	Issued	15/290684	10/11/2016	9739708	8/22/2017
PCV-006-US	MKS Instruments, Inc.	GAS MEASUREMENT SYSTEM	Issued	15/658470	7/25/2017	10228324	3/12/2019
SLE-001-US	MKS Instruments, Inc.	A VERSATILE ZERO-VOLTAGE SWITCH RESONANT INVERTER FOR INDUSTRIAL DIELECTRIC BARRIER DISCHARGE GENERATOR APPLICATIONS	Issued	13/431521	3/27/2012	8680777	3/25/2014
SLE-002-US	MKS Instruments, Inc.	DIRECT THREE PHASE PARALLEL RESONANT INVERTER FOR REACTIVE GAS GENERATOR APPLICATIONS	Issued	14/843412	9/2/2015	9648716	5/9/2017
TTCA-753US02	MKS Instruments, Inc.	METHOD FOR ION MASS SEPARATION AND ION ENERGY CONTROL IN PROCESS PLASMAS	Issued	16/377522	4/8/2019	10998170B2	5/4/2021
SR-082-US2	Electro Scientific Industries, Inc.	Quasi-CW diode-pumped, solid-state harmonic laser system and method employing same	Issued	10/242299	9/11/2002	6781090	8/24/2004
SR-086-US1	Electro Scientific Industries, Inc.	Micromachining with high-energy, intra-cavity Q-switched CO2 laser pulses	Issued	10/143040	5/9/2002	6784399	8/31/2004
YB-149-US1	Electro Scientific Industries, Inc.	Coaxial narrow angle dark field lighting	Issued	10/373934	2/26/2003	6870949	3/22/2005
SR-109-US1	Electro Scientific Industries, Inc.	Generating sets of tailored laser pulses	Issued	10/921765	8/18/2004	7126746	10/24/2006
SR-104-US1	Electro Scientific Industries, Inc.	Methods of and laser systems for link processing using laser pulses with specially tailored power profiles	Issued	10/921481	8/18/2004	7348516	3/25/2008

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-112-US6	Electro Scientific Industries, Inc.	Semiconductor structure processing using multiple laser beam spots spaced on-axis with cross-axis offset	Issued	11/051958	2/4/2005	7425471	9/16/2008
SR-112-US2	Electro Scientific Industries, Inc.	Semiconductor structure processing using multiple laterally spaced laser beam spots delivering multiple blows	Issued	11/051262	2/4/2005	7687740	3/30/2010
YB-158-US1	Electro Scientific Industries, Inc.	Long axis component loader	Issued	11/409112	4/21/2006	7704033	4/27/2010
SR-146-US1	Electro Scientific Industries, Inc.	Optimizing use and performance of optical systems implemented with telecentric on-axis dark field illumination	Issued	11/483133	7/7/2006	7725024	5/25/2010
SR-173-US1	Electro Scientific Industries, Inc.	Decoupled, multiple stage positioning system	Issued	11/676937	2/20/2007	7760331	7/20/2010
SR-145-US1	Electro Scientific Industries, Inc.	Achieving convergent light rays emitted by planar array of light sources	Issued	11/482539	7/72006	7787159	8/31/2010
SR-146-US2	Electro Scientific Industries, Inc.	Optimizing use and performance of optical systems implemented with telecentric on-axis dark field illumination	Issued	12/464320	5/12/2009	7862207	1/4/2011
SR-112-US7	Electro Scientific Industries, Inc.	Semiconductor structure processing using multiple laser beam spots	Issued	11/052000	2/4/2005	7923306	4/12/2011
SR-146-US3	Electro Scientific Industries, Inc.	Optimizing use and performance of optical systems implemented with telecentric on-axis dark field illumination	Issued	12/464475	5/12/2009	7929857	4/19/2011
SR-112-US3	Electro Scientific Industries, Inc.	Semiconductor structure processing using multiple laser beam spots spaced on-axis on non-adjacent structures	Issued	11/051263	2/4/2005	7935941	5/3/2011
E101-US1	Electro Scientific Industries, Inc.	Method and apparatus for optically transparent via filling	Issued	12/194886	8/20/2008	7943862	5/17/2011

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YB-168-US1	Electro Scientific Industries, Inc.	Method of producing a panel having an area with light transmissivity	Issued	11/742879	5/1/2007	7968820	6/28/2011
YB-156-US1	Electro Scientific Industries, Inc.	X and Y orthogonal cut direction processing with set beam separation using 45 degree beam split orientation apparatus and method	Issued	11/287842	11/28/2005	7977601	7/12/2011
SR-112-US9	Electro Scientific Industries, Inc.	Systems and methods for alignment of laser beam(s) for semiconductor link processing	Issued	11/481562	7/5/2006	8049135	11/1/2011
SR-189-US1	Electro Scientific Industries, Inc.	Laser machining of fired ceramic and other hard and/or thick materials	Issued	12/060023	3/31/2008	8093532	1/10/2012
SR-112-US10	Electro Scientific Industries, Inc.	Systems and methods for distinguishing reflections of multiple laser beams for calibration for semiconductor structure processing	Issued	11/499394	8/3/2006	8110775	2/7/2012
SR-145-US2	Electro Scientific Industries, Inc.	Achieving convergent light rays emitted by planar array of light sources	Issued	12/869358	8/26/2010	8134760	3/13/2012
SR-112-US5	Electro Scientific Industries, Inc.	Semiconductor structure processing using multiple laser beam spots spaced on-axis delivered simultaneously	Issued	11/051500	2/4/2005	8148211	4/3/2012
YB-158-US2	Electro Scientific Industries, Inc.	Long axis component loader	Issued	12/767495	4/26/2010	8235643	8/7/2012
E113-US1	Electro Scientific Industries, Inc.	Method and apparatus for laser drilling holes with Gaussian pulses	Issued	12/056824	3/27/2008	8237080	8/7/2012
SR-150-US1	Electro Scientific Industries, Inc.	Tandem photonic amplifier	Issued	12/374989	7/25/2007	8248688	8/21/2012
SR-112-US11	Electro Scientific Industries, Inc.	Methods and systems for semiconductor structure processing using multiple laser beam spots	Issued	11/980872	10/30/2007	8383982	2/26/2013

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
SR-189-US2	Electro Scientific Industries, Inc.	Laser machining of fired ceramic and other hard and/or thick materials	Issued	13/326133	12/14/2011	8723075	5/13/2014
E101-US2	Electro Scientific Industries, Inc.	Method and apparatus for optically transparent via filling	Issued	13/038,642	3/2/2011	8729404	5/20/2014
YB-214-US1	Electro Scientific Industries, Inc.	Shallow angle vertical rotary loader for electronic device testing	Issued	13/163504	6/17/2011	8733535	5/27/2014
E101-US3	Electro Scientific Industries, Inc.	Method and apparatus for optically transparent via filling	Issued	13/038,648	3/2/2011	8735740	5/27/2014
E110-US4	Electro Scientific Industries, Inc.	Method and apparatus for reliably laser marking articles	Issued	13/739,413	1/11/2013	8761216	6/24/2014
E113-US2	Electro Scientific Industries, Inc.	Method and apparatus for laser drilling holes with Gaussian pulses	Issued	13/539,991	7/2/2012	8866043	10/21/2014
E119-US1	Electro Scientific Industries, Inc.	Apparatus for optically laser marking articles	Issued	12/909759	10/21/2010	9023461	5/5/2015
SR-155-US2	Electro Scientific Industries, Inc.	Ultrashort laser pulse wafer scribing	Issued	14/098229	12/5/2013	9221124	12/29/2015
XSIL20-US1	Electro Scientific Industries, Inc.	Laser machining using a surfactant film	Issued	10/559442	6/3/2004	9242312	1/26/2016
E240-US1	Electro Scientific Industries, Inc.	Modified two-dimensional codes, and laser systems and methods for producing such codes	Issued	14/194,455	2/28/2014	9269035	2/23/2016
E110-US6	Electro Scientific Industries, Inc.	Method and apparatus for reliably laser marking articles	Issued	13/901,361	5/23/2013	9375946	6/28/2016
E236-US1	Electro Scientific Industries, Inc.	Laser systems and methods for internally marking thin layers, and articles produced thereby	Issued	14/461,171	8/15/2014	9463528	10/11/2016
E243-US1	Electro Scientific Industries, Inc.	Optical mark reader	Issued	14/630,436	2/24/2015	9594937	3/14/2017
E117-US2	Electro Scientific Industries, Inc.	Method and apparatus for reliably laser marking articles	Issued	13/756,212	1/31/2013	10112263	10/30/2018

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
E163-US1	Electro Scientific Industries, Inc.	Method and apparatus for marking an article	Issued	14/059,029	10/21/2013	10213871	2/26/2019
E162-US1	Electro Scientific Industries, Inc.	Method and apparatus for machining a workpiece	Issued	14/033,368	9/20/2013	10357850	7/23/2019
E254-US1	Electro Scientific Industries, Inc.	Location of image plane in a laser processing system	Issued	16/067,711	3/17/2017	10864599	12/15/2020
E257-US1	Electro Scientific Industries, Inc.	Laser processing apparatus and methods of laser-processing workpieces	Published	16/318092	7/21/2017		
056231-0348-US	MKS Instruments, Inc.	Flow pickup circuit	Issued	10/256,917	9/27/2002	6,725,166	4/20/2004
056231-0409-US	MKS Instruments, Inc.	Method and apparatus for conditioning a gas flow to improve a rate of pressure change measurement	Issued	10/391,829	3/19/2003	6,813,943	11/9/2004
056231-0417-US	MKS Instruments, Inc.	Two phase flow sensor using tomography techniques	Issued	10/669,065	9/23/2003	6,857,323	2/22/2005
056231-0386-US	MKS Instruments, Inc.	Thermal anemometry mass flow measurement apparatus and method	Issued	10/440,371	5/16/2003	6,868,723	3/22/2005
056231-0407-US	MKS Instruments, Inc.	Thermal mass flow rate sensor providing increased rate of heat transfer to gas	Issued	10/816,412	4/1/2004	6,918,295	7/19/2005
056231-0442-US	MKS Instruments, Inc.	Semiconductor manufacturing gas flow divider system and method	Issued	10/796,693	3/9/2004	7,072,743	7/4/2006
056231-0433-US	MKS Instruments, Inc.	Porous valve assembly	Issued	10/814,973	3/30/2004	7,073,771	7/11/2006
MKS 1006-US	MKS Instruments, Inc.	Versatile semiconductor manufacturing controller with statistically repeatable response times	Issued	11/411,005	4/25/2006	7,620,516	11/17/2009
MKS 1004-4	MKS Instruments, Inc.	CONTROLLER AND METHOD TO MEDIATE DATA COLLECTION FROM SMART SENSORS FOR FAB	Issued	11/566,632	4/7/2004	7,693,687	4/6/2010
HPS-080US01	MKS Instruments, Inc.	MINIMAL RESIDUAL LIQUID RETENTION FILTER HOUSING	Issued	12/016,838	1/18/2008	7,704,392	4/27/2010

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
MKS 1000-US-CON	MKS Instruments, Inc.	METHOD AND APPARATUS FOR TWO PHASE STRUCTURED MESSAGE TO TAGGED MESSAGE TRANSLATION	Issued	11/479,151	6/30/2006	7,725,606	5/25/2010
MKS 1006-US-CON	MKS Instruments, Inc.	VERSATILE SEMICONDUCTOR MANUFACTURING CONTROLLER WITH STATISTICALLY REPEATABLE RESPONSE TIMES	Issued	12/619,440	11/16/2009	8,108,174	1/31/2012
056231-0751-US	MKS Instruments, Inc.	Control for and method of pulsed gas delivery	Issued	12/689,961	1/19/2010	8,790,464	7/29/2014
MAC-011-US	MKS Instruments, Inc.	Micromachined bulk acoustic wave resonator pressure sensor	Issued	15/602,758	5/23/2017	10,352,800	7/16/2019
0068-100IRV-08C1	Newport Corporation	Methods and devices for low noise current source with dynamic power distribution	Issued	12/031,571	2/14/2008	7750608	7/6/2010
0091-100FKL-07US	Newport Corporation	Performance optically coated semiconductor devices and related methods of manufacture	Issued	12/741,580	12/11/2008	8445299	5/21/2013
0091-100FKL-07C1	Newport Corporation	Performance optically coated semiconductor devices and related methods of manufacture	Issued	13/861,875	4/12/2013	8928102	1/6/2015
0110-100STR-14D1	Newport Corporation	System and method for quantum efficiency measurement employing diffusive device	Issued	14/282999	5/20/2014	9,435,733	9/6/2016
0178-600BOZ-15UT	Newport Corporation	High power laser diode test system and method of manufacture	Issued	15/338,383	10/29/2016	9891270	2/13/2018
0178-600BOZ-18D1	Newport Corporation	High power laser diode test system and method of manufacture	Issued	15/880,842	1/26/2018	10,161,996	12/25/2018
5089.3101-001	MKS Instruments, Inc.	Method and Apparatus of Radical Detection Using RGA	Pending	17/644,704	12/16/2021		
3197-000139-US	MKS Instruments, Inc.	Impedance Matching In A RF Power Generation System	Pending	17/502,666	10/15/2021		

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
5089.3104-000	MKS Instruments, Inc.	BINARY GAS PURITY ANALYZER	Pending	17/452,030	10/22/2021		
0236-800ITA-21P	MKS Instruments, Inc.	Multi-Phase Power Supply with Power Factor Correction for Magnetrons	Pending	63/272,535	10/27/2021		
5089.3098-001	MKS Instruments, Inc.	Method and Apparatus for Pulse Gas Delivery with Pressure Control	Pending	17/455,626	11/18/2021		
E304-P1	MKS Instruments, Inc.	DISSOLVED AMMONIA DELIVERY SYSTEM AND METHODS OF USE	Pending	63/289,438	12/14/2021		
3197-000142-US	MKS Instruments, Inc.	Real-Time, Non-Invasive IEDF Plasma Sensor	Pending	17/566,274	12/30/2021		
3197-000133-US-COB	MKS Instruments, Inc.	INTERMODULATION DISTORTION MITIGATION USING ELECTRONIC VARIABLE CAPACITOR	Pending	17/643,866	12/13/2021		
E286-US1	Electro Scientific Industries, Inc.	Reduced Impedance Variation in a Modular 2-Terminal Contacting Electrical Measurement System	Pending	17/633828	2/8/2022		
5089.3103-000	MKS Instruments, Inc.	Ion Source with Gas Delivery for High-Fidelity Analysis	Pending	17/647239	1/6/2022		
3197-000143-US-PS1	MKS Instruments, Inc.	Pulse and Bias Synchronization Methods and Systems	Pending	62/298825	1/12/2022		
E302-P1	Electro Scientific Industries, Inc.	High Accuracy, Illumination-agnostic, Auto Focus Algorithm for High Contrast Features	Pending	63/302887	1/25/2022		
0195-800WIL-17UT-CON	MKS Instruments, Inc.	Multi-Sensor Gas Sampling Detection System for Radial Gases and Short-Lived Molecules and Method of Use	Pending	17/583712	1/25/2022		
E308-P1	MKS Instruments, Inc.	Power Combiner Having Integrated Thermal Management System and Methods of Manufacture	Pending	63/302931	1/25/2022		
E307-P1	Electro Scientific Industries, Inc.	Germanium AOD system with parallel and perpendicular polarizations	Pending	63/304349	1/28/2022		
0229-800WIL-20UT	MKS Instruments, Inc.	Apparatus and Methods for Microwave-Assisted Surface Chemistry Annealing	Pending	17/590874	2/2/2022		

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued
		of ALD Processes Utilizing Microwave Radiation Energy					
5089.3105-000	MKS Instruments, Inc.	Method and Apparatus for Pressure Based Mass Flow Controller	Filed	17/651751	2/18/2022		
5089.3106-000	MKS Instruments, Inc.	Method and Apparatus for Improving Mass Flow Verification Accuracy	Filed	17/656177	3/23/2022		
E306-P1	Electro Scientific Industries, Inc.	Optical power equalization for thermal stability of AODs	Pending	63/314437	2/27/2022		
E306-P2	Electro Scientific Industries, Inc.	Optical power equalization for thermal stability of AODs	Pending	63/314438	2/27/2022		
3197-000140-US	MKS Instruments, Inc.	Real-Time, Non-Invasive IEDF Plasma Sensor	Filed	17/715672	4/7/2022		
E311-P1	MKS Instruments, Inc.	Coatings for Use in Remote Plasma Source Applications and Method of Manufacture	Filed	63/331735	4/15/2022		
0233-800BER-21UT	MKS Instruments, Inc.	Light-Enhanced Ozone Wafer Processing System and Method of Use	Filed	17/830232	6/1/2022		
ASX-196-US-P1	MKS Instruments, Inc.	Valve Apparatuses and Related Methods for Reactive Process Gas Isolation and Facilitating Purge During Isolation	Filed	63/347740	6/1/2022		
0241-100IRV-21UT	Newport Corporation	Pneumatic Vibration Isolator with Thermally Conductive Air Chamber	Filed	17/721834	4/15/2022		
E298-P1	Electro Scientific Industries, Inc.	LASER PROCESSING APPARATUS INCLUDING LASER SENSOR SYSTEM AND METHODS OF MEASUREMENT OF BEAM CHARACTERISTICS	Pending	63/348165	6/2/2022		
E306-P3	Electro Scientific Industries, Inc.	OPTICAL POWER EQUALIZATION FOR THERMAL STABILITY OF AODS	Pending	63/338876	5/5/2022		
3197-000141-US	MKS Instruments, Inc.	Hybrid High-Power & Broadband Variable Impedance Module	Filed	17/873624	7/26/2022		

Ref.:	Owner	Title	Status	Appl. No.	Filed	Patent No.	Issued

Schedule B

Trademarks

Registered Trademarks and Trademark Applications:

Ref.	Mark Name	Owner	Status	Appl. No.	Filed	Reg. No.	Reg. Date
T0100-US1	ESI	Electro Scientific Industries, Inc.	Registered	72/001,576	1/27/1956	635175	10/2/1956
T0100-US2	ESI	Electro Scientific Industries, Inc.	Registered	73/109,780	12/16/1976	1117590	5/8/1979
T0100-US3	ESI (Lowercase Stylized)	Electro Scientific Industries, Inc.	Registered	73/423,320	4/27/1983	1431737	3/10/1987
T0100-US4	ESI	Electro Scientific Industries, Inc.	Registered	75/621,991	1/15/1999	2405272	11/21/2000
T0102-US1	SIGMACLEAN	Electro Scientific Industries, Inc.	Registered	75/006,439	10/16/1995	2259707	7/6/1999
T0107-US1	VERSITRIM	Electro Scientific Industries, Inc.	Registered	78/284,839	8/8/2003	3187870	12/19/2006
T0500-US1	ICEFYRE	Newport Corporation	Registered	87/156527	8/31/2016	5347387	11/28/2017
T0501-US1	TALON	Newport Corporation	Registered	86/072,094	9/23/2013	4581802	8/5/2014
T0502-US1	ASCEND	Newport Corporation	Registered	86/072,113	9/23/2013	5100670	12/13/2016
T0506-US1	EMPOWER	Newport Corporation	Registered	78/343,715	12/19/2003	3058186	2/7/2006
T0507-US1	EXCELSIOR	Newport Corporation	Registered	78/616,535	4/25/2005	3370293	1/15/2008
T0507-US2	EXCELSIOR	Newport Corporation	Registered	85/570813	5/15/2012	4330521	5/7/2013
T0508-US1	EXPLORER	Newport Corporation	Registered	78/616,525	4/25/2005	3345264	11/27/2007
T0509-US1	INSIGHT	Newport Corporation	Registered	85/239,031	2/10/2011	4129651	4/17/2012
T0510-US1	LOK-TO-CLOCK	Newport Corporation	Registered	74/344,076	12/29/1992	1852963	9/6/1994
T0511-US1	MAI TAI	Newport Corporation	Registered	76/201,271	1/29/2001	2581563	6/18/2002

Ref.	Mark Name	Owner	Status	Appl. No.	Filed	Reg. No.	Reg. Date
T0512-US1	MATISSE	Newport Corporation	Registered	78/556,282	1/28/2005	3330829	11/6/2007
T0513-US1	MILLENNIA	Newport Corporation	Registered	75/185,628	10/22/1996	2191793	9/29/1998
T0514-US1	QUANTA-RAY & design	Newport Corporation	Registered	73/464,513	2/6/1984	1352510	8/6/1985
T0515-US1	QUASAR	Newport Corporation	Registered	85/132,068	9/17/2010	4309491	3/26/2013
T0516-US1	SOLSTICE	Newport Corporation	Registered	77/161,202	4/19/2007	3481639	8/5/2008
T0517-US1	SPIRIT	Newport Corporation	Registered	85/900,636	4/10/2013	4469370	1/21/2014
T0518-US1	SPIRIT-NOPA	Newport Corporation	Registered	86/173,566	1/23/2014	4756926	6/16/2015
T0519-US1	SPIRIT-OPA	Newport Corporation	Registered	86/173,562	1/23/2014	5114864	1/3/2017
T0520-US1	SPITFIRE	Newport Corporation	Registered	76/343,506	11/28/2001	2780305	11/4/2003
T0521-US1	VELOCITY	Newport Corporation	Registered	75/215,769	12/19/1996	2130320	1/20/1998
T0523-US1	OPTOFLASH	Newport Corporation	Registered	88/570,120	8/7/2019	6073157	6/9/2020
T0524-US1	GUARDIAN	Newport Corporation	Registered	86/619,809	5/5/2015	5125087	1/17/2017
T0525-US1	IQ DAMPING TECHNOLOGY	Newport Corporation	Registered	78/575,602	2/25/2005	3294809	9/18/2007
T0526-US1	SMARTTABLE	Newport Corporation	Registered	78/558,218	2/1/2005	3190279	12/26/2006
T0527-US1	ULTIMA	Newport Corporation	Registered	75/172,277	9/26/1996	2099353	9/23/1997
T0529-US1	STABILIFE	Newport Corporation	Registered	74/470,254	12/16/1993	1909809	8/8/1995
T0530-US1	[V] V in Brackets Design	Newport Corporation	Registered	74/077,107	7/9/1990	1685763	5/5/1992
T0531-US1	ILX LIGHTWAVE	Newport Corporation	Registered	75/092,699	4/19/1996	2078888	7/15/1997
T0532-US1	ORIEL	Newport Corporation	Registered	75/927,079	2/23/2000	2622866	9/24/2002

Ref.	Mark Name	Owner	Status	Appl. No.	Filed	Reg. No.	Reg. Date
T0533-US1	PICOLIS	Newport Corporation	Registered	86/671,327	6/23/2015	5387094	1/23/2018
T0534-US1	DATUM	Newport Corporation	Registered	85/477,605	11/21/2011	4263476	12/25/2012
T0535-US1	DYNAMYX	Newport Corporation	Registered	75/660,582	3/15/1999	2321689	2/22/2000
T0536-US1	HYBRYX	Newport Corporation	Registered	77/516,935	7/8/2008	3926012	3/1/2011
T0547-US1	NEW FOCUS	Newport Corporation	Registered	74/077,106	7/9/1990	1687057	5/12/1992
T0560-US1	Miscellaneous Design (Newport Logo)	Newport Corporation	Registered	75/708,068	5/18/1999	2733651	7/8/2003
T0562-US1	NEWPORT and Design (stacked)	Newport Corporation	Registered	73/775,574	1/19/1989	1558877	10/3/1989
T0564-US1	NEWPORT & Design (linear - plain font)	Newport Corporation	Published	88/533,577	7/24/2019		
T0566-US1	NEWPORT RESOURCE	Newport Corporation	Registered	76/387,729	3/26/2002	2904099	11/23/2004
T0580-US1	S Design	Newport Corporation	Registered	73/815,709	7/31/1989	1654202	8/20/1991
T0581-US1	S Design (blue)	Newport Corporation	Registered	86/983,486	11/21/2014	5397058	2/6/2018
T0582-US1	SPECTRA-PHYSICS & S Design (blue)	Newport Corporation	Registered	86/461,515	11/21/2014	5115053	1/3/2017
T0584-US1	SPECTRA-PHYSICS & S Design (linear)	Newport Corporation	Registered	85/570,808	3/5/2012	4330520	5/7/2013
T0586-US1	Spectra-Physics (word mark)	Newport Corporation	Registered	73/815,710	7/31/1989	1661478	10/22/1991
T0587-US1	SPECTRA-PHYSICS (word mark)	Newport Corporation	Registered	87/930,910	5/22/2018	5973693	1/28/2020
T0700-US1	AIRGARD	MKS Instruments, Inc.	Registered	78793063	1/17/2006	3341575	11/20/2007
T0701-US1	ASTEX	MKS Instruments, Inc.	Registered	73718856	3/28/1988	1524257	2/14/1989
T0702-US1	ASTRON	MKS Instruments, Inc.	Registered	75295047	5/20/1997	2237573	4/6/1999
T0703-US1	BARATRON	MKS Instruments, Inc.	Registered	73319899	7/20/1981	1197782	6/15/1982

Ref.	Mark Name	Owner	Status	Appl. No.	Filed	Reg. No.	Reg. Date
T0704-US1	CLEANLINE	MKS Instruments, Inc.	Allowed	90026379	6/29/2020		
T0706-US1	CONVECTRON	MKS Instruments, Inc.	Registered	74558972	8/9/1994	1954345	2/6/1996
T0707-US1	ENI	MKS Instruments, Inc.	Registered	74096557	9/13/1990	1686134	5/12/1992
T0708-US1	ENI (Stylized)	MKS Instruments, Inc.	Registered	74096491	9/13/1990	1686133	5/12/1992
T0710-US1	GRANVILLE-PHILLIPS	MKS Instruments, Inc.	Registered	76121929	9/5/2000	2542586	2/26/2002
T0711-US1	HPS	MKS Instruments, Inc.	Registered	75550234	9/9/1998	2378581	8/22/2000
T0712-US1	i-BARATRON	MKS Instruments, Inc.	Registered	76331799	10/31/2001	2759890	9/2/2003
T0713-US1	I-MAG	MKS Instruments, Inc.	Registered	74614232	12/22/1994	1992094	8/6/1996
T0714-US1	LIQUOZON	MKS Instruments, Inc.	Registered	75694345	4/30/1999	2403559	11/14/2000
T0716-US1	MICRO-ION	MKS Instruments, Inc.	Registered	75334855	8/4/1997	2293275	11/16/1999
T0717-US1	MINI-CONVECTRON	MKS Instruments, Inc.	Registered	76420707	6/12/2002	2709156	4/22/2003
T0718-US1	MKS	MKS Instruments, Inc.	Registered	78911394	6/19/2006	3229845	4/17/2007
T0718-US2	MKS	MKS Instruments, Inc.	Registered	78722681	9/28/2005	3336530	11/13/2007
T0719-US1	MKS (AND DESIGN)	MKS Instruments, Inc.	Registered	73460587	1/12/1984	1317863	2/5/1985
T0719-US2	MKS (AND DESIGN)	MKS Instruments, Inc.	Registered	76260293	5/21/2001	2697197	3/18/2003
T0721-US1	MKS (STYLIZED)	MKS Instruments, Inc.	Registered	73460592	1/12/1984	1309825	12/18/1984
T0724-US1	MKS and Design + Tag Line	MKS Instruments, Inc.	Registered	76271135	6/13/2001	2697220	3/18/2003
T0725-US1	MKS INSTRUMENTS and Design	MKS Instruments, Inc.	Registered	75060380	2/21/1996	2082429	7/22/1997
T0726-US1	MKS INSTRUMENTS, INC.	MKS Instruments, Inc.	Registered	73460591	1/12/1984	1372214	11/26/1985

Ref.	Mark Name	Owner	Status	Appl. No.	Filed	Reg. No.	Reg. Date
T0727-US1	MKSINST	MKS Instruments, Inc.	Registered	85684812	7/23/2012	5095640	12/6/2016
T0729-US1	NOVA	MKS Instruments, Inc.	Registered	76106380	8/8/2000	2477990	8/14/2001
T0730-US1	O3MEGA	MKS Instruments, Inc.	Registered	78562042	2/7/2005	3283554	8/21/2007
T0731-US1	OPTIMA	MKS Instruments, Inc.	Registered	75942803	3/13/2000	2562383	4/16/2002
T0732-US1	PARAGON	MKS Instruments, Inc.	Registered	86368162	8/15/2014	4734534	5/12/2015
T0733-US1	PR INDEX	MKS Instruments, Inc.	Registered	75830825	10/26/1999	2641184	10/22/2002
T0734-US1	R*EVOLUTION	MKS Instruments, Inc.	Registered	78613986	4/21/2005	3134363	8/22/2006
T0735-US1	RESIST-TORR	MKS Instruments, Inc.	Registered	75524214	7/23/1998	2309951	1/18/2000
T0737-US1	SEMOZON	MKS Instruments, Inc.	Registered	78173035	10/10/2002	2758997	9/2/2003
T0738-US1	SMARTMATCH	MKS Instruments, Inc.	Registered	75694344	4/30/1999	2399419	10/31/2000
T0739-US1	SMARTPOWER	MKS Instruments, Inc.	Registered	75694325	4/30/1999	2726193	6/17/2003
T0740-US1	SPECTRUM	MKS Instruments, Inc.	Registered	76050428	5/17/2000	2610410	8/20/2002
T0741-US1	STABIL-ION	MKS Instruments, Inc.	Registered	74250891	3/2/1992	1838365	5/31/1994
T0742-US1	SUREPOWER	MKS Instruments, Inc.	Registered	78562083	2/7/2005	3172300	11/14/2006
T0743-US1	SURROUND THE CHAMBER	MKS Instruments, Inc.	Registered	88569347	8/7/2019	6006625	3/10/2020
T0744-US1	SURROUND THE WORKPIECE	MKS Instruments, Inc.	Registered	87960632	6/13/2018	5858440	9/10/2019
T0745-US1	TOOLWEB	MKS Instruments, Inc.	Registered	78164487	9/16/2002	2902263	11/9/2004
T0746-US1	TRU-FLO	MKS Instruments, Inc.	Registered	76257907	5/16/2001	2759679	9/2/2003
T0747-US1	VACUUM SENTRY	MKS Instruments, Inc.	Registered	73776533	1/24/1989	1661469	10/22/1991

Ref.	Mark Name	Owner	Status	Appl. No.	Filed	Reg. No.	Reg. Date
T0749-US1	VQM	MKS Instruments, Inc.	Registered	85508144	1/4/2012	4302521	3/12/2013
T0751-US1	PRECISIVE	MKS Instruments, Inc.	Registered	85/676,756	7/13/2012	4405626	9/24/2013
T0752-US1	VI PROBE & DESIGN	MKS Instruments, Inc.	Registered	75565156	10/5/1998	2472686	7/31/2001
T0753-US1	eTRaC	MKS Instruments, Inc.	Filed	90479959	1/21/2021		
T0754-US1	EDGE	MKS Instruments, Inc.	Filed	90479968	1/21/2021		
T0806-US1	TSUNAMI	Newport Corporation	Registered	74138424	2/8/1991	1759090	3/16/1993
T0101-US1	WAFERMARK	Electro Scientific Industries, Inc.	Registered	73261435	5/9/1980	1200245	7/6/1982
T0106-US1	CHIPTRIM	Electro Scientific Industries, Inc.	Registered	78284837	8/8/2003	3007832	10/18/2005
T0776-US1	Optimize the Interconnect	MKS Instruments, Inc.	Pending	97/424180	5/23/2020		
T0810-US1	MKS	MKS Instruments, Inc.	Pending	97/463375	6/17/2022		
T0811-US1	MKS	MKS Instruments, Inc.	Pending	97/463381	6/17/2022		

Schedule C

Copyrights

Registered Copyrights and Copyright Applications:

Title	Type of Work	Registration No.	Registration Date	Registered Owner
Card reader option : model 296/model 410.	Text	TX0000276249	06/25/1979	Electro Scientific Industries, Inc.
Card reader option, model 296/model 410 : instruction manual.	Text	TX0000070909	07/20/1978	Electro Scientific Industries, Inc.
ESI Calcumeter 4100 : owners handbook, pt. no. 78082, Sept. 1978, May 1979.	Text	TX0000276248	06/25/1979	Electro Scientific Industries, Inc.
ESI systems software manual, assembly part number 45480.	Text	TX0000334260	09/24/1979	Electro Scientific Industries, Inc.
Integrated system support package (ISSP), version V09 for ESI laser trimming systems.	Computer File	TXu000587768	12/06/1993	Electro Scientific Industries, Inc.
Model 1262 DAC tester : instruction manual, June 1979, replaces October 1978.	Text	TX0000376992	08/20/1979	Electro Scientific Industries, Inc.
Model 1453, handler adapter : instruction manual.	Text	TX0000431815	03/04/1980	Electro Scientific Industries, Inc.
Model 1453, handler adapter : instruction manual.	Text	TX0000207977	11/22/1978	Electro Scientific Industries, Inc.
Model 1558, 4-position carousel parts handler : part no. 44735 : instruction manual, Jan. 1979.	Text	TX0000190756	02/12/1979	Electro Scientific Industries, Inc.
Model 1559, 2-position manual parts handler : instruction manual, pt. no. 44736.	Text	TX0000455196	04/18/1980	Electro Scientific Industries, Inc.

Title	Type of Work	Registration No.	Registration Date	Registered Owner
Model 1700 series digital resistance measuring system : pt. no. 21400 : instruction manual.	Text	TX0000377486	10/22/1979	Electro Scientific Industries, Inc.
Model 1950 dual flexible disk unit : instruction manual, Aug. 1978, replaces Nov. 1977.	Text	TX0000187255	01/11/1979	Electro Scientific Industries, Inc.
Model 252 digital impedance meter : instruction manual.	Text	TX0000240888	03/14/1979	Electro Scientific Industries, Inc.
Model 252 digital impedance meter : instruction manual, October 1979, replaces June 1979.	Text	TX0000406961	01/30/1980	Electro Scientific Industries, Inc.
Model 253 autoranging digital impedance meter : instruction manual.	Text	TX0000354853	10/22/1979	Electro Scientific Industries, Inc.
Model 253 autoranging digital impedance meter : instruction manual.	Text	TX0000434042	03/17/1980	Electro Scientific Industries, Inc.
Model 253 autoranging digital impedance meter : instruction manual.	Text	TX0000240890	03/14/1979	Electro Scientific Industries, Inc.
Model 254 digital impedance meter : instruction manual.	Text	TX0000240889	03/14/1979	Electro Scientific Industries, Inc.
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Turn-key 5 trimming program model 44 : instruction manual, September 1978.	Text	TX0000224489	10/13/1978	Electro Scientific Industries, Inc.
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Beam positioning subsystem service manual.	Text	TX0000878790	01/29/1982	Electro Scientific Industries, Inc.
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