	Paper No
UNITED STATES PATENT AND TR	RADEMARK OFFICE
·	
BEFORE THE PATENT TRIAL AN	D APPEAL BOARD
APPLE INC., Petitioner,	
v.	
COREPHOTONICS, Patent Owner	LTD.,
IPR2019-00030 Patent No. 9,857,5	

PETITIONER'S REPLY



TABLE OF CONTENTS

I.	Intro	duction	1
II.	Level of Ordinary Skill in the Art		1
	A.	The level of ordinary skill in this case addresses additional disclosure in the '568 patent	1
	В.	Dr. Moore's deposition testimony contradicts his declaration testimony and should not be given any weight.	2
	C.	Beich (Ex. 1020) confirms that the knowledge of a POSITA would have included lens manufacturing issues	
	D.	Patent Owner's evidence confirms that a POSITA's experience would have included lens manufacturing	4
III.	Clair	n Construction: Total Track Length ("TTL")	6
	A.	Petitioner's construction of "TTL" is the broadest reasonable.	6
	B.	Patent Owner's construction of "TTL" is not supported by intrinsic evidence.	7
	C.	Patent Owner's reliance on Kingslake (Ex. 2024) to redefine "image plane" contradicts the specification of the '568 patent.	10
IV.		ns 1-5 are obvious in view of Ogino's Example 6 odiment.	14
	A.	Ogino discloses a TTL/EFL ratio of less than 1.0.	14
		1. Ogino's Example 6 embodiment has a TTL/EFL ratio of less than 1.0 when the optional cover glass is removed.	15
		2. Ogino explicitly discloses that the cover glass element the Example 6 embodiment is optional	19



	B. Ogino Discloses a Lens Assembly with L11/L1e < 4	21
V.	Claims 1-5 are obvious in view of Ogino's Example 6 embodiment and the teachings of Beich.	24
VI.	Conclusion	27
VII	Certificate of Word Count	28



PETITIONER'S EXHIBIT LIST

Updated: August 15, 2019

Ex. 1001	U.S. Patent No. 9,402,568
Ex. 1002	Prosecution History of U.S. Patent No. 9,402,568
Ex. 1003	Declaration of José Sasián, Ph.D., under 37 C.F.R. § 1.68
Ex. 1004	Curriculum Vitae of José Sasián
Ex. 1005	U.S. Patent No. 9,128,267 to Ogino et al. ("Ogino")
Ex. 1006	Warren J. Smith, Modern Lens Design (1992) ("Smith")
Ex. 1007	U.S. Patent No. 7,918,398 to Li et al. ("Li")
Ex. 1008	U.S. Patent No. 7,777,972 to Chen et al. ("Chen")
Ex. 1009	U.S. Patent No. 8,233,224 to Chen ("Chen II")
Ex. 1010	Max Born et al., PRINCIPLES OF OPTICS, 6 th Ed. (1980) ("Born")
Ex. 1011	Prosecution history of U.S. Patent No. 9,128,267 to Ogino
Ex. 1012	Jane Bareau et al., "The optics of miniature digital camera modules," SPIE Proceedings Volume 6342, <i>International Optical Design Conference 2006</i> ; 63421F (2006) https://doi.org/10.1117/12.692291 ("Bareau")
Ex. 1013	U.S Patent No. 3,388,956 to Eggert et al. ("Eggert")
Ex. 1014	Reserved
Ex. 1015	Reserved
Ex. 1016	Reserved
Ex. 1017	U.S. Patent App. Pub. No. 2013/0077183 to An et al. ("An")



Ex. 1018	Michael P. Schaub, THE DESIGN OF PLASTIC OPTICAL SYSTEMS (2009) ("Schaub")
Ex. 1019	Optical Society of America, HANDBOOK OF OPTICS, vol. II 2nd ed. (1995) ("Handbook of Optics")
Ex. 1020	William S. Beich et al., "Polymer Optics: A manufacturer's perspective on the factors that contribute to successful programs," SPIE Proceedings Volume 7788, <i>Polymer Optics Design</i> , <i>Fabrication, and Materials</i> ; (August 12, 2010); https://doi.org/10.1117/12.861364 ("Beich")
Ex. 1021	Reserved
Ex. 1022	Declaration of Ingrid Hsieh-Yee, Ph.D., under 37 C.F.R. § 1.68
Ex. 1023	Course description of OPT 214 from the University of Rochester web site
Ex. 1024	Course description of OPT 244 from the University of Rochester web site
Ex. 1025	Deposition transcript of Duncan Moore, Ph.D.
Ex. 1026	Declaration of Dr. José Sasián, Ph.D. in support of Petitioner's Reply
Ex. 1027	U.S. Patent No. 9,402,032 ("the '032 patent")



DOCKET A L A R M

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

