

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.

Petitioner

v.

IMMERVISION, INC.

Patent Owner

Case IPR2023-00472

Patent No. 10,795,120

PATENT OWNER'S PRELIMINARY RESPONSE UNDER
37 C.F.R. § 42.107

TABLE OF CONTENTS

	page
I. INTRODUCTION	1
II. THE RELEVANT INVENTION OF THE ‘120 PATENT.....	3
III. THE ASSERTED PRIOR ART	6
A. Thibault.....	6
B. Matsusaka	8
C. Kim	9
IV. PERSON OF ORDINARY SKILL IN THE ART	10
V. CLAIM CONSTRUCTION	10
VI. PETITIONER CANNOT SHOW A LIKELIHOOD OF PREVAILING BECAUSE THE PETITION IS DEFICIENT WITH RESPECT TO AT LEAST ONE ELEMENT OF CLAIM 1	13
A. Petitioner Did Not Properly Show Thibault Includes a Magnification Zone Arranged as in Claim 1	13
1. Petitioner Cannot Rely on the “Being Used to Compensate” Clause Being Read Out of Claim 1	13
2. Petitioner Fails to Identify Any Magnification Zone in Thibault and Instead Relies on an Unsupported Theory	14
B. Petitioner Identifies Matsusaka’s Magnification Zones But Provides No Evidence of Relative Illumination or MTF	18
C. Petitioner Identifies Kim’s Magnification Zones But Provides No Evidence of Relative Illumination or MTF	20
VII. PETITIONER VIOLATED THE WORD COUNT FOR THE PETITION.....	22
VIII. CONCLUSION.....	24

TABLE OF AUTHORITIES**Page(s)****Cases**

<i>Baldwin Graphic Sys., Inc. v. Siebert, Inc.</i> , 512 F.3d 1338 (Fed. Cir. 2008)	12
<i>In re Danly</i> , 263 F.2d 844 (C.C.P.A. 1959)	12
<i>EMC Corp. v. Intellectual Ventures I LLC</i> , IPR2017-00429, Paper 11 (PTAB July 5, 2017)	23
<i>In re Hack</i> , 245 F.2d 246 (C.C.P.A. 1957)	13
<i>Hewlett-Packard Co. v. Bausch & Lomb, Inc.</i> , 909 F.2d 1464 (Fed. Cir. 1990)	12
<i>K-2 Corp. v. Salomon S.A.</i> , 191 F.3d 1356 (Fed. Cir. 1999)	12, 14
<i>In re Michlin</i> , 256 F.2d 317 (C.C.P.A. 1958)	12
<i>Nvidia Corp. v. Polaris Innovations Ltd.</i> , IPR2017-01781, Paper 9 (PTAB Jan. 9, 2018)	23
<i>In re Stencel</i> , 828 F.2d 751 (Fed. Cir. 1987)	12
<i>Xerox Corp. v. Bytemark, Inc.</i> , IPR2022-00624, Paper 9 (PTAB Aug. 24, 2022) (precedential)	17, 19, 21

Other Authorities

37 C.F.R. § 42.24(a)(1)	22
37 C.F.R. § 42.65(a)	18, 19, 21

I. INTRODUCTION

All three grounds asserted by Petitioner against U.S. Patent No. 10,795,120 (“the ‘120 Patent”) are deficient with respect to at least the same element of independent claim 1. The claim recites a miniature wide-angle optical apparatus with a non-linear targeted resolution that creates a zone in an image with a lower or higher magnification compared to linear targeted resolution. That zone is further described as “being used to compensate, at least in part, for a lower image quality due to at least one of a drop of relative illumination or a drop of MTF in a zone of the image.”

Petitioner attempts to evade this requirement altogether by arguing the “being used to compensate...” language is not entitled to patentable weight. Petitioner’s motive for this is entirely clear – Petitioner and its expert, Dr. David Kessler, have no evidence on relative illumination or MTF for the lenses in two of the three asserted prior art references. But Petitioner’s interpretation fails to account for the structural limitations this clause provides, such as designating the location of the magnification zone within the field of view of the lens – *e.g.*, positional correlation with respect to a drop in relative illumination or MTF. Petitioner cannot validly read the penultimate clause out of claim 1.

Petitioner’s fallback position on Ground 1 is a conclusory presumption based on a misreading of the ‘120 Patent specification describing Fig. 7.

According to Petitioner, the ‘120 Patent equates a downward slope in a resolution curve with a lower magnification ratio. Petitioner summarily declares the “being used to compensate” clause in claim 1 as met by Thibault since the reference’s resolution curve also exhibits a downward slope. Not only does this analysis contort the cited passage, it is contradicted by further disclosure in the ‘120 Patent and by Petitioner’s own arguments in Grounds 2 and 3, where Petitioner demonstrated a proper understanding of how to find magnification zones. Petitioner performs no similar analysis on Thibault. Its misguided application of Thibault to claim 1, and its expert’s conclusory repetition of the argument in his declaration, fail to supply the adequate evidence necessary for Petitioner to sustain its burden on Ground 1.

For Grounds 2 and 3, despite finding magnification zones in the references, Petitioner still relies on its baseless slope comparison theory to read Matsusaka and Kim onto the penultimate clause in claim 1. This is likely because, again, Petitioner has no evidence of the relative illumination or MTF of the chosen lenses to make the comparison necessary to satisfy the claim.

For at least these reasons, explained in further detail below, the Petition should be dismissed.

II. THE RELEVANT INVENTION OF THE ‘120 PATENT

In general, the ‘120 Patent is directed to miniaturized lenses with wide-angle fields of view, particularly for applications such as cameras in mobile devices. Ex. 1001 at 1:20-30. The claims specifically address challenges faced by conventional miniature wide-angle lenses that can degrade image quality, especially at an edge of the field of view (FOV). *Id.* at 1:53-2:3. Drops in relative illumination affect image quality due to increased diffraction effects and sensor noise. *Id.* Declines in modulation transfer function (MTF) can similarly reduce image quality. *Id.* The inventors of the ‘120 Patent determined that the negative image quality effects from decreased relative illumination and MTF could be compensated for by adjusting the image resolution accordingly. *See e.g., id.* at 2:45-55.

Fig. 6 (reproduced below) shows an example of an appropriately crafted, non-linear resolution curve. As Petitioner’s expert acknowledges, the number of pixels per degree for a lens with linear resolution will be constant across the entire FOV, which can be represented by a flat, straight line when plotting resolution over FOV. Ex. 1003 at ¶ 164. By contrast, Fig. 6 represents a lens

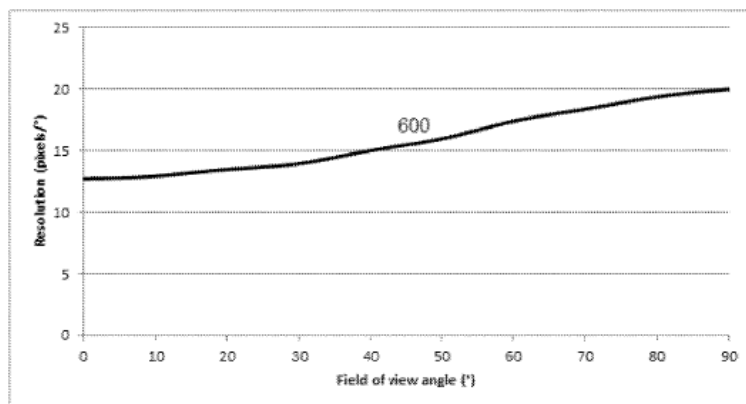


Figure 6

exhibiting a resolution of between 12-13 pixels per degree at the center but rising to a resolution of about 20 pixels per degree at the edge. Ex. 1001 at Fig. 6. This curve provides an example of a zone of higher image magnification (*i.e.*, more imaging pixels are available) near the edge (*id.* at 6:9-27), the significance of which is further explained below.

Fig. 4 (reproduced below) is an example relative illumination plot for a lens that can be aided by the resolution configuration shown in Fig. 6. The relative illumination in the center is at or near 100%, but slowly drops until taking a more

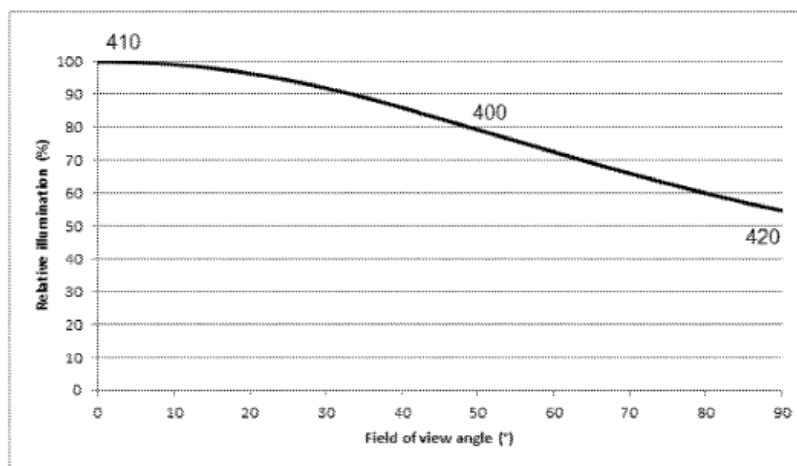


Figure 4

precipitous decline starting around 25° or 30°. *Id.* at Fig. 4. The relative illumination is at 80% by 50° and is well below 60% at the edge. *Id.* The

curves in Figs. 4 and 6 show a general relative inverse correlation – at the center where the relative illumination is highest, the magnification is lowest, and the higher resolution zone at the edge corresponds the lowest relative illumination. The slopes also correlate well, with the resolution curve showing a slow initial ascent generally matching the slow initial decline of the relative illumination at the center, with subsequent corresponding steeper slopes. As the relative illumination

drops, the magnification tends to increase to compensate for the effect on image quality – a higher number of pixels per degree is present as the relative illumination degrades, which gives more image space to this zone to enhance image quality lost due to the illumination problem. Ex. 1001 at 6:9-27.

Fig. 5 (reproduced below) similarly gives an example MTF plot that can be compensated by the magnification scheme of Fig. 6. The sagittal and tangential MTF curves are roughly 85% at the lens center but drop to 70% or below at the edge. *Id.* at Fig. 5. Starting at around 30°, both curves start to trend toward a more precipitous decline. *Id.*

Once again, the resolution curve in Fig. 6 exhibits a somewhat inverse relationship, with the minimum resolution at the center but the highest

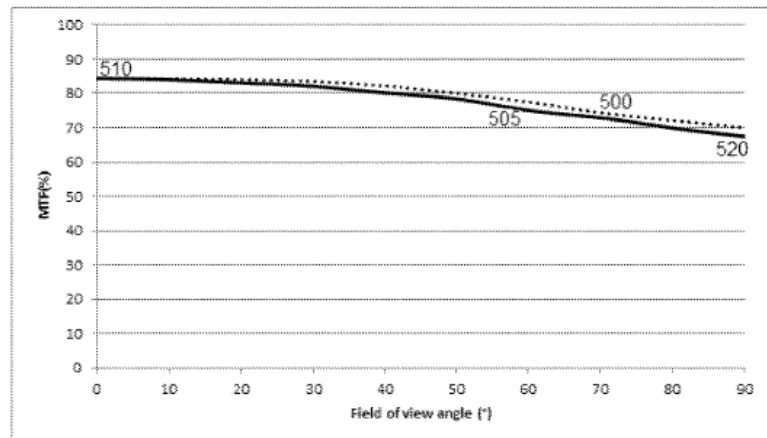


Figure 5

magnification at the edge, where the MTF is also at its lowest. As with the relative illumination, the placement of a zone of higher magnification at the edge in this example provides more sensor space to that portion of the image to fix image quality problems caused by the low MTF.

Fig. 7 shows a different example resolution curve having multiple changes of direction resulting in a maximum resolution value at point 712. *Id.* at 6:28-50; Fig. 7. This example plot shape is designed to optimize image quality for that particular lens by creating more balanced relative illumination and MTF. *Id.* at 6:51-61. However, the ‘120 Patent does not provide any relative illumination or MTF curve corresponding to the lens represented by Fig. 7.

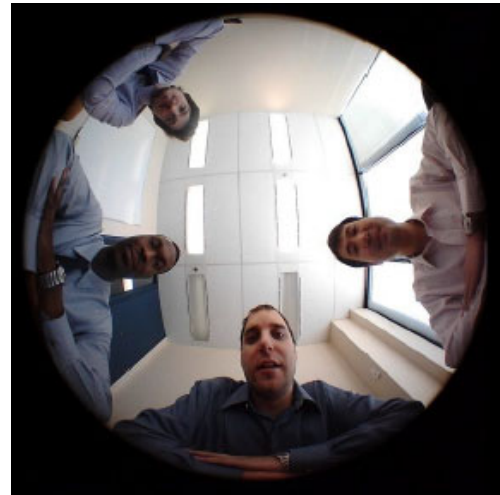
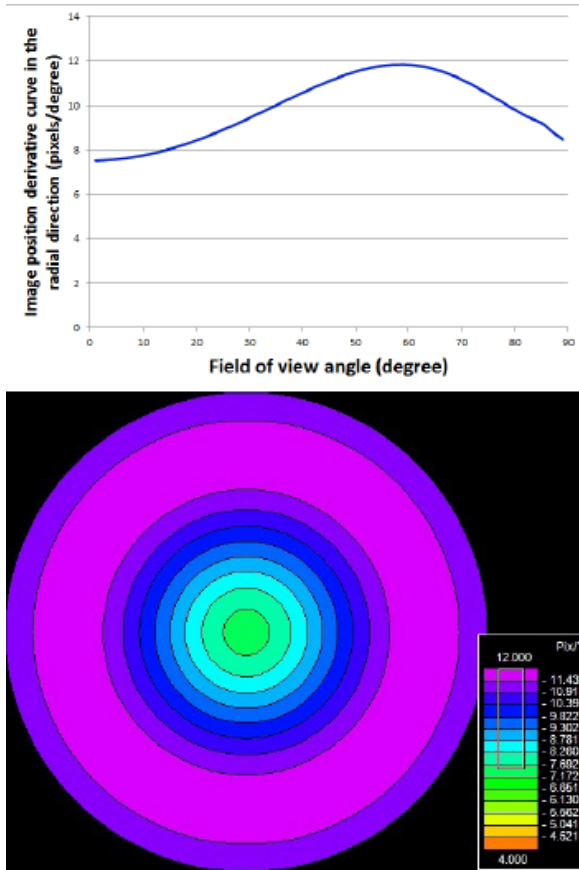
III. THE ASSERTED PRIOR ART

A. Thibault

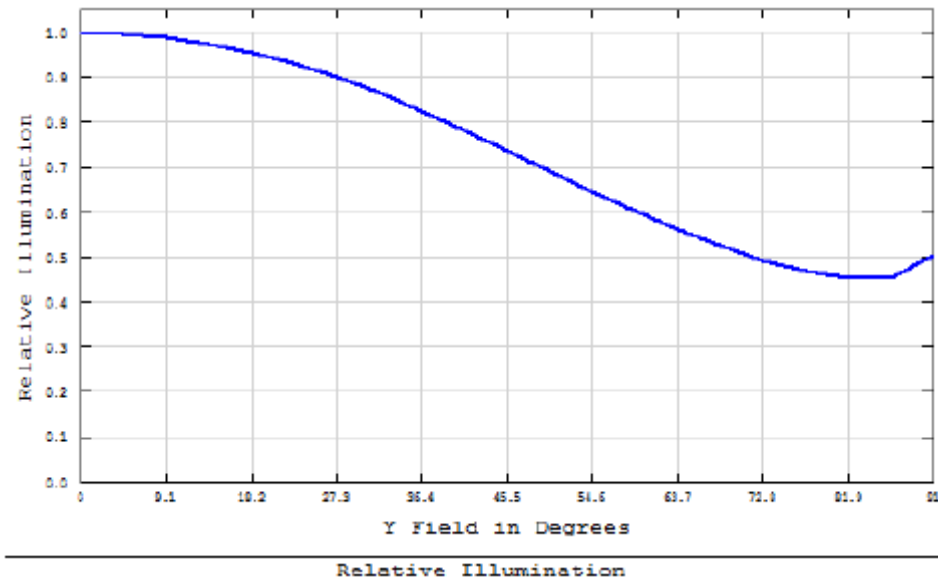
Thibault provides two designs for miniature 180° FOV lenses for use in consumer electronics. Ex. 1004 at 2. The designs address specific challenges in reducing a total track length of the lens, including, *inter alia*, constraints imposed by minimum thicknesses needed for the 5-6 lens elements required to give a 180° FOV, chromatic aberration balancing, and molding constraints. *Id.* at 2-3.

One of the lenses is designed for mobile device applications and has a total track length of 3.80 mm despite using six plastic lens elements. *Id.* at 6. The lens uses “targeted distortion to increase the number of pixels in the zone of interest for mobile video chat applications.” *Id.* This is shown in Figure 6 (reproduced below), wherein a maximum resolution is achieved around 60° in the FOV. *Id.* at 7. Shown side-by-side with the right image of Figure 9, the maximum resolution corresponds generally to the locations of individuals in the mobile video chat, as

opposed to the center (viewing the ceiling), which is of little interest in such an application. *See id.* at 8.



Thibault also provides a relative illumination curve for the 3.80 mm lens in Figure 7 (reproduced below). The relative illumination is 100% at center but drops markedly after about 20°, dropping below 50% around 70°, and only recovering slightly back to 50% at the edge of the FOV (~91°). *Id.* at 7. Thibault does not explicitly correlate the resolution distribution in Figure 6 with the relative illumination curve of Figure 7. Thibault also does not describe any impact of its resolution distribution to any MTF of the lens.

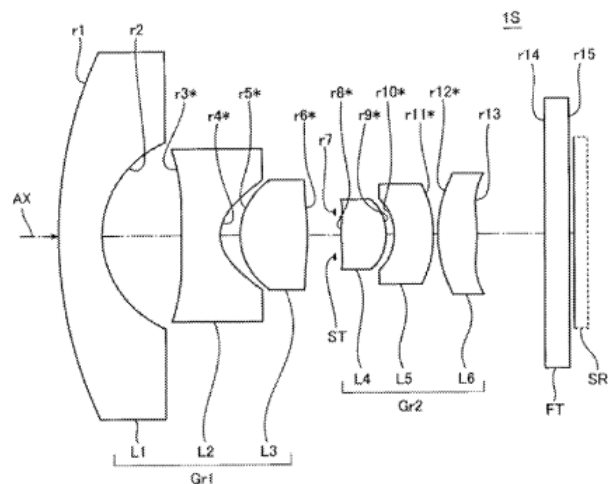


B. Matsusaka

Matsusaka is directed to a wide-angle optical system, primarily for use in a vehicle onboard rearview camera, with improved contrast due to the sufficient correction of chromatic aberrations in a compacted system. *See e.g.*, Ex. 1005 at [0002]-[0009]. Petitioner focuses on the lens system of Example 19, a sectional of which is shown in Fig. 23

FIG. 23

(reproduced at right). The Example 19 system includes a negative power front lens group Gr1 of three lenses L1-L3, an aperture stop ST, and a second

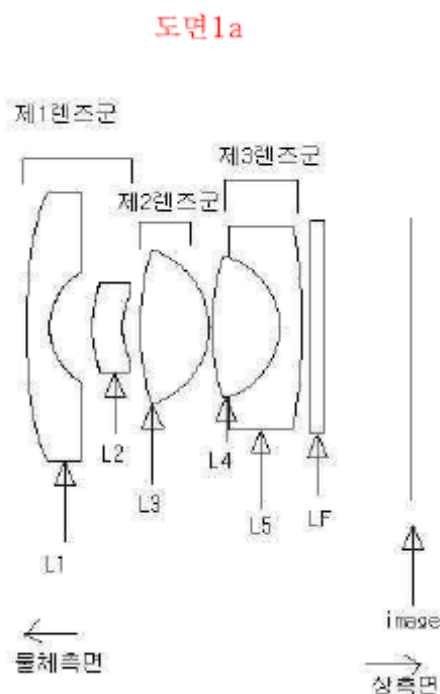


lens group Gr2 of three lenses L4-L6. *Id.* at [0405]-[0408]. A parallel flat plate FT, which can include a filter and cover glass, is positioned between the second

lens group Gr2 and an image pickup element SR. *Id.* at [0409]. Various characteristics of the Example 19 system are displayed in Figs. 43A-43B, including aberrations, astigmatism, and distortion. *Id.* at [0412]. Matsusaka does not describe or plot the relative illumination or the MTF of the Example 19 system (or any of its other wide-angle optical systems, for that matter).

C. Kim

Kim discloses a compact superwide angle optical system for mounting on a vehicle for surveillance. Ex. 1007 at 3-4. Petitioner focuses on the first system embodiment shown in Diagram 1a (reproduced below). The system includes a first lens group of a first lens L1 and a second lens L2, a second lens group with a third lens L3, and a third lens group having a fourth lens L4 and a fifth lens L5. *Id.* at 4.



The first lens group has a strong negative power in order to obtain a superwide angle of incoming light. *Id.* To increase lens brightness and resolution, a drawback of earlier systems, Kim constructs the object and image surfaces of the first and second lenses L1, L2 to be aspherical. *Id.* Various characteristics of the first embodiment are displayed in Diagram 1b, including

aberrations and astigmatism. *Id.* at 7. Kim does not describe or plot the relative illumination or the MTF of the first embodiment (or any of its other embodiments, for that matter).

IV. PERSON OF ORDINARY SKILL IN THE ART

Solely for purposes of this Preliminary Response, Patent Owner does not object to Petitioner’s definition of a POSA. Patent Owner reserves the right to assert an alternative definition for a POSA in this or another proceeding involving the ‘120 Patent, where appropriate.

V. CLAIM CONSTRUCTION

Petitioner contends no formal constructions are necessary, but advocates removing the phrase: “the lower or higher object to image magnification being used to compensate, at least in part, for a lower image quality due to at least one of a drop of relative illumination or a drop of MTF in a zone of the image” as not having patentable weight. Petition at 9-12. Petitioner characterizes the overall phrase as an intended use limitation by emphasizing the “being used to compensate” language as implying an intent. *Id.* Petitioner’s position ignores the surrounding claim language and the supporting specification.

Prior to the clause in question, claim 1 recites the apparatus includes “a non-linear targeted resolution to intentionally create a zone in an image captured by the miniature wide-angle optical apparatus with a lower or higher object to image

magnification compared to linear targeted resolution.” Ex. 1001 at cl. 1. This merely indicates the existence of the created zone. The subsequent “being used to compensate” language explains, *inter alia*, **where** the created zone is in the apparatus – *i.e.*, in a location within the field of view in regards to the relative illumination or MTF drop.

The example from Figs. 4-6 demonstrates this concept. As explained above in section II, Fig. 6 shows a resolution plot where a zone of higher magnification is provided in a location corresponding to drops in relative illumination and MTF exhibited in Figs. 4 and 5, respectively. *See also* Ex. 1001 at 6:9-27. Other portions of the specification also tie this “being used to compensate” language to zone location as well. For example:

In some embodiments of the current invention, the targeted resolution curve of the miniature wide-angle lens is configured to offset, at least in part, the drop of relative illumination from the miniature wide-angle lens ***by increasing the number of pixels imaged in the zone where the relative illumination is lower.***

In some other embodiments of the current invention, the targeted resolution curve of the miniature wide-angle lens is configured to offset, at least in part, the drop of MTF from the miniature wide-angle lens ***by increasing the number of pixels imaged in the zone where the MTF is lower.***

Id. at 2:45-55 (emphasis added). The language at issue results in a structural difference – it at least explains where the targeted zone is located in the apparatus. By Petitioner’s own argument, it must therefore be assigned patentable weight. *See* Petition at 10 (“to limit an apparatus claim, functional language must result in a structural difference in the claimed apparatus”) (citing *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1363-64 (Fed. Cir. 1999) (reading functional language as separate, structural limitation)).

The other cases cited by Petitioner for the proposition of reading out “descriptions of use” from apparatus claims all either afford patentable weight to the element at issue or present far different circumstances in claim drafting. *See e.g., Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1344 (Fed. Cir. 2008) (refusing to limit apparatus claim to process by which a certain element is manufactured); *Hewlett-Packard Co. v. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990) (patentee’s structural differences were enough to distinguish prior art – no need to rely on operational differences); *In re Stencel*, 828 F.2d 751, 754 (Fed. Cir. 1987) (applicant permitted to limit device claim with statement of purpose in preamble); *In re Danly*, 263 F.2d 844, 847-48 (C.C.P.A. 1959) (novelty was not in device capable of having alternating current passed through the tie rods, but in a method of actually performing the method); *In re Michlin*, 256 F.2d 317, 320 (C.C.P.A. 1958) (apparatus claim concluded with step of how apparatus may

be operated); *In re Hack*, 245 F.2d 246, 248-49 (C.C.P.A. 1957) (composition claims invalid because the composition was old and invention was merely a new use).

The “being used to compensate” clause in claim 1 is not reciting a new use for an old product, does not relate to a process of making the optical apparatus, nor does it provide a step for operation. Rather, it at least explains to the POSA how the created zone is arranged within the field of view of the optical apparatus. For at least these reasons, all elements in claim 1 should be considered to have patentable weight for purposes of evaluating the asserted prior art.

VI. PETITIONER CANNOT SHOW A LIKELIHOOD OF PREVAILING BECAUSE THE PETITION IS DEFICIENT WITH RESPECT TO AT LEAST ONE ELEMENT OF CLAIM 1 FOR EACH GROUND

A. Petitioner Did Not Properly Show Thibault Includes a Magnification Zone Arranged as in Claim 1

1. Petitioner Cannot Rely on the “Being Used to Compensate” Clause Being Read Out of Claim 1

Petitioner initially contends that Thibault need not meet claim 1’s “being used to compensate” clause because the phrase is allegedly not entitled to patentable weight. Petition at 30-31. As previously explained, this clause provides structural limitations to the optical apparatus. *See* § V, above. Specifically, this language at least informs the POSA of the created magnification zone’s location within the field of view. *Id.* The zone is positioned in relation to a drop in the relative illumination or MTF of the apparatus. *Id.* The “being used to

compensate” clause must be given patentable weight because it limits the structure of the optical apparatus. *See e.g., K-2*, 191 F.3d at 1363 (analyzing functional language as an additional limitation to an apparatus claim). Petitioner cannot demonstrate a likelihood of prevailing with Thibault by reading the “being used to compensate” language out of the claim.

2. Petitioner Fails to Identify Any Magnification Zone in Thibault and Instead Relies on an Unsupported Theory

When properly considered to have patentable weight, Petitioner contends the “being used to compensate” clause is met solely because “Thibault’s Figure 6 has a similar downward slope to Figure 7 of the ‘120 Patent,” which “would therefore have the same impact on relative illumination as described in the ‘120 Patent.” Petition at 31-32.

First, Petitioner’s argument incorrectly analyzes the words of the claim. Claim 1 of the ‘120 Patent recites that the magnification ratio of the created **zone** is made **relative to a linear targeted resolution**, and it is **this zone** that is “being used to compensate” for the lower image quality due to a drop in relative illumination or MTF. Ex. 1001 at cl. 1. Petitioner clearly recognizes in Grounds 2 and 3 how to identify such zones in a lens – areas of a resolution curve above a linear resolution represent increased magnification and areas below represent decreased magnification. Petition at 58, 79. Curiously, Petitioner managed to label these zones for Matsusaka and Kim by using arbitrary pixel counts (*id.* at 58-59, 78-80;

Ex. 1003 at ¶¶ 164, 195), but does not similarly examine Thibault, despite having actual pixel information (Ex. 1004 at 6). Petitioner provides **no** evidence regarding a location of any particular magnification zone in Thibault with respect to Thibault's relative illumination curve.

Instead, Petitioner relies on the mere presence of a "downward slope" in Thibault's resolution plot. Petition at 30-32. According to Petitioner, this is acceptable because the '120 Patent allegedly "conflated a negative or downward sloped resolution curve as having lower object to image magnification ratio," which leads a POSA to also understand "a positive or upward sloped resolution curve as having higher object to image magnification ratio." Petition at 26 (*citing* Ex. 1001 at 6:28-41). But this analysis misreads the cited passage of the '120 Patent, contradicts other portions thereof, and even conflicts with Petitioner's own review of other prior art.

Petitioner grossly mischaracterizes the quoted text from the '120 Patent description:

The targeted resolution curve is chosen to have an upward curve between the center resolution value 710 and a maximum 712 (number of pixels/degree), followed by a downward curve between the maximum 712 and ***a region near the edge of the field of view around position 714***. This downward curve between maximum value 712 and position 714 allows the lens system to have a higher relative illumination value toward the

edge of the field of view by having a lower object to image magnification ratio *in that region* and hence redirecting the same quantity of light from an object to a smaller region in the image with more illumination.

Ex. 1001 at 6:30-41 (emphasis added). The plain reading of this passage is that the downward slope between the maximum point 712 and position 714 in the curve enables provision of a *zone with a lower magnification in the region* near point 714. Nothing above remotely suggests that a downward slope itself provides a lower magnification (or the corollary that an upward slope automatically means a higher magnification).

This is confirmed by the earlier example in Fig. 6. The specification describes that only part (“zone”) of the image includes “a higher number of pixels per degree” or “higher resolution.” *Id.* at 6:9-27. Fig. 6 exhibits a generally upward slope over the entire plot. Thus, slope alone cannot equate to the claimed magnification zones.

Petitioner’s analysis of Matsusaka further belies Petitioner’s slope conflation theory. To read Matsusaka on certain aspects of claim 1, Petitioner plotted the resolution curve for Example 19, and its expert identified the magnification zones:

Areas where the blue curve are above the red curve are areas of increased magnification with respect to the linear targeted resolution, and areas where the blue curve are below the red

curve are areas of decreased magnification with respect to the linear targeted resolution.

Ex. 1003 at ¶ 165; *see also* Petition at 58-59. As seen from the plot at page 58 of the Petition (reproduced below), the blue curve is below the red curve from the center until approximately 40° in the FOV, meaning it has ***decreased***

magnification in that area

despite exhibiting an

entirely upward trending

slope. Similarly, from

approximately 75° until

around 92-93°, the blue curve is above the red curve with a ***downward slope***, but

Petitioner's analysis confirms this area will have an ***increased magnification***.



All this demonstrates that Petitioner cannot rely on resolution slope direction alone to satisfy the “being used to compensate” clause in claim 1 – Petitioner must correlate the location of magnification zones *vis-à-vis* the relative illumination (or MTF) drops, which it has not done for Thibault. The Petition presents no such evidence, nor does Petitioner's expert, who merely parrots the relevant text of the petition with no further technical reasoning or supporting documentation.

Compare Petition at 30-32 with Ex. 1003 at ¶¶ 123-124. His testimony on this claim element is therefore entitled to little weight. *Xerox Corp. v. Bytemark, Inc.*,

IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential); *see also* 37 C.F.R. § 42.65(a). Without any evidence relating to the magnification zones in Thibault, Petitioner cannot meet its burden to show a reasonable likelihood of prevailing on claim 1 (or any other challenged claim) for Ground 1.

B. Petitioner Identifies Matsusaka’s Magnification Zones But Provides No Evidence of Relative Illumination or MTF

Similar to Ground 1, Petitioner first contends in Ground 2 that Matsusaka need not meet claim 1’s “being used to compensate” clause. Petition at 59. As explained above, this clause provides structural limitations (involving the location of the created zone in relation to drops in relative illumination or MTF) to the claim that must be considered in comparison to the prior art. *See* § V, above. To the extent Petitioner is relying on a claim feature not having patentable weight to prove invalidity, Ground 2 is deficient.

Petitioner’s backup position asserts the claim element is met “based on the fact that Matsusaka’s lens includes the claimed ‘zones.’” Petition at 59. But as explained above, the mere presence of the created zone is not enough – claim 1 also calls for the zone’s location to correlate with a drop in relative illumination or MTF. *See* § V, above. Neither Petitioner nor its expert provide *any* information regarding the relative illumination or MTF of Matsusaka’s lens. *See e.g.*, Petition at 43-46, 59-60; Ex. 1003 at ¶¶ 89-99, 146-168. Without such information, it is

impossible to tell whether any particular zone identified in Matsusaka's purported resolution curve is located according to the claim language.

Instead, much like Ground 1, Petitioner relies on its calculated resolution plot for Matsusaka and the '120 Patent's Fig. 7 both exhibiting "a similar downward slope." Petition at 60. As explained above in section VI.A.2, the slope of the resolution curve alone is insufficient to demonstrate the location of a magnification zone or its relationship to the lens' relative illumination or MTF. Again, Dr. Kessler's declaration merely repeats Petitioner's conclusory slope argument without providing supporting evidence or technical reasoning. *Compare* Petition at 59-60 *with* Ex. 1003 at ¶ 167. His testimony on this claim element is therefore entitled to little weight. *Xerox*, IPR2022-00624, Paper 9 at 15; *see also* 37 C.F.R. § 42.65(a).

The mere presence of a "downward slope" anywhere in the curve does not satisfy claim 1's "being used to compensate" clause. The '120 Patent makes clear that any magnification zones present in the Fig. 7 resolution curve are carefully located according to at least one of the relative illumination or the MTF of the subject lens. Ex. 1001 at 6:28-61. Petitioner and its expert offer no similar evidence from Matsusaka to correlate any portion of their calculated resolution plot to the lens' undisclosed relative illumination or MTF. Such bare allegations cannot

sustain Petitioner’s burden to establish a reasonable likelihood of prevailing with respect to at least one claim on Ground 2.

C. Petitioner Identifies Kim’s Magnification Zones But Provides No Evidence of Relative Illumination or MTF

Similar to Grounds 1 and 2, Petitioner first contends in Ground 3 that Kim need not meet claim 1’s “being used to compensate” clause. Petition at 80. As explained above, this clause provides structural limitations (involving the location of the created zone in relation to drops in relative illumination or MTF) to the claim that must be considered in comparison to the prior art. *See* § V, above. To the extent Petitioner is relying on a claim feature not having patentable weight to prove invalidity, Ground 3 is deficient.

Petitioner’s backup position asserts the claim element is met “based on the fact that Kim’s lens includes the claimed ‘zones.’” Petition at 80. But as explained above, the mere presence of the created zone is not enough – claim 1 also calls for the zone’s location to correlate with a drop in relative illumination or MTF. *See* § V, above. Neither Petitioner nor its expert provide *any* information regarding the relative illumination or MTF of Kim’s lens. *See e.g.*, Petition at 65-68, 80; Ex. 1003 at ¶¶ 100-105, 180-199. Without such information, it is impossible to tell whether any particular zone identified in Kim’s purported resolution curve is located according to the claim language.

Instead, much like Grounds 1 and 2, Petitioner relies on its calculated resolution plot for Kim and the ‘120 Patent’s Fig. 7 both exhibiting “a similar downward slope.” Petition at 80. As explained above in section VI.A.2, the slope of the resolution curve alone is insufficient to demonstrate the location of a magnification zone or its relationship to the lens’ relative illumination or MTF. Again, Dr. Kessler’s declaration merely repeats Petitioner’s conclusory slope argument without providing supporting evidence or technical reasoning. *Compare id. with* Ex. 1003 at ¶ 198. His testimony on this claim element is therefore entitled to little weight. *Xerox*, IPR2022-00624, Paper 9 at 15; *see also* 37 C.F.R. § 42.65(a).

The mere presence of a “downward slope” anywhere in the curve does not satisfy claim 1’s “being used to compensate” clause. The ‘120 Patent makes clear that any magnification zones present in the Fig. 7 resolution curve are carefully located according to at least one of the relative illumination or the MTF of the subject lens. Ex. 1001 at 6:28-61. Petitioner and its expert offer no similar evidence from Kim to correlate any portion of their calculated resolution plot to the lens’ relative illumination or MTF. Such bare allegations cannot sustain Petitioner’s burden to establish a reasonable likelihood of prevailing with respect to at least one claim on Ground 3.

VII. PETITIONER VIOLATED THE WORD COUNT FOR THE PETITION

37 C.F.R. § 42.24(a)(1) limits a petition for *inter partes* review to 14,000 words. Petitioner certified to a word count of 13,994. However, Petitioner used improper formatting to obtain that word count, which in reality is approximately 550 words over the limit.

Petitioner adopted an irregular exhibit citation format such as “EX1001” instead of “Ex. 1001” or “Exhibit 1001,” thereby omitting a space to undercount each citation as one word instead of two. *See e.g.*, Petition at 1. Petitioner similarly omitted spaces between paragraph symbols and numbers – *e.g.*, “¶80” instead of “¶ 80” (*see e.g.*, Petition at 11). There are also at least six occasions where Petitioner omitted spaces between section symbols and numbers – *e.g.*, “§102” instead of “§ 102” (*see e.g.*, Petition at 12). Petitioner engaged in similar tactics in its co-pending Petition against Patent Owner’s U.S. Patent No. 6,844,990. *See* IPR2023-00471, Paper No. 7 at 21-23.

The following table estimates the number of words omitted by Petitioner’s improper formatting, demonstrating the Petition’s word count is nearly 550 words over the limit, at least:

Improper Formatting	Estimated Number of Omitted Words
Use of “EX” with no space instead of “Ex.” with a space or similar (excluding Exhibit List and Table of Contents)	352
No space between ¶ and numeral	195
No space between § and numeral	6
TOTAL (estimated)	553

Such formatting irregularities to reduce word count have previously been found improper. *See e.g., Nvidia Corp. v. Polaris Innovations Ltd.*, IPR2017-01781, Paper 9 at 6-7 (PTAB Jan. 9, 2018) (cautioning petitioner to use ordinary spacing in phrases and citations or risk sanctions); *EMC Corp. v. Intellectual Ventures I LLC*, IPR2017-00429, Paper 11 at 27-29 (PTAB July 5, 2017) (warning Petitioner against similar formatting tricks to reduce word count); *see also* Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019) at 40 (“deleting spacing between words, or using excessive acronyms or abbreviations for word phrases, in order to circumvent the rules on word count, may lead to a party’s brief not being considered”). Patent Owner therefore respectfully requests the PTAB grant Patent Owner any relief deemed appropriate for Petitioner’s rules violation.

VIII. CONCLUSION

For at least the reasons recited above, Patent Owner requests that the PTAB deny institution of the Petition.

Date: May 5, 2023

Respectfully submitted,

By: /Stephen E. Murray/
Stephen E. Murray, Reg. No. 63,206
Keith A. Jones, Reg. No. 67,781
PANITCH SCHWARZE BELISARIO & NADEL LLP
Two Commerce Square
2001 Market Street, Suite 2800
Philadelphia, Pennsylvania 19103
(215) 965-1330
(215) 965-1331 (Fax)
smurray@panitchlaw.com (E-Mail)
kjones@panitchlaw.com (E-Mail)

John D. Simmons, Reg. No. 52,225
Dennis J. Butler, Reg. No. 51,519
PANITCH SCHWARZE BELISARIO & NADEL LLP
Wells Fargo Tower
2200 Concord Pike, Suite 201
Wilmington, DE 19803
(302) 394-6030
(302) 394-6031 (Fax)
jimmmons@panitchlaw.com (E-mail)
dbutler@panitchlaw.com (E-mail)

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §§ 42.24(a)(1)(i), 42.24(b)(1), and 42.24(d), the undersigned certifies that, according to the “Word Count” tool in Microsoft Word, which was used to prepare this paper, the number of words in this Patent Owner’s Preliminary Response Under 37 C.F.R. § 42.107 is 4,838.

/Stephen E. Murray/
Stephen E. Murray
Registration No. 63,206
Attorney for ImmerVision, Inc.

CERTIFICATE OF SERVICE UNDER 37 CFR § 42.6(e)

I hereby certify that a true copy of the foregoing PATENT OWNER'S PRELIMINARY RESPONSE UNDER 37 CFR § 42.107 has been served in its entirety this 5th day of May 2023, by electronic mail on Petitioner's lead and back-up counsel, as follows:

W. Karl Renner
David L. Holt
Jennifer J. Huang
Karan Jhurani
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
IPR50095-0115IP1@fr.com

/Stephen E. Murray/
Stephen E. Murray
Registration No. 63,206
Attorney for ImmerVision, Inc.