

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ASML NETHERLANDS B.V., EXCELITAS TECHNOLOGIES CORP.,
and QIOPTIQ PHOTONICS GMBH & CO. KG,
Petitioner,

v.

ENERGETIQ TECHNOLOGY, INC.,
Patent Owner.

Case IPR2015-01377
Patent 7,435,982 B2

Before SALLY C. MEDLEY, JONI Y. CHANG, and
BARBARA A. PARVIS, *Administrative Patent Judges*.

PARVIS, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

A. *Background*

Petitioner, ASML Netherlands B.V., Excelitas Technologies Corp., and Qioptiq Photonics GmbH & Co. KG, filed a Petition (Paper 4, “Pet.”) requesting that we institute an *inter partes* review of claims 23 and 60 of U.S. Patent No. 7,435,982 B2 (Ex. 1201, “the ’982 Patent”). Patent Owner,

Energetiq Technology, Inc., did not file a Preliminary Response. We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Petitioner asserts the following grounds of unpatentability (Pet. 20, 43):

References	Basis	Claims challenged
Gärtner ¹ and Beterov ²	§ 103(a)	23 and 60
Gärtner and Wolfram ³	§ 103(a)	23 and 60

For the reasons that follow, we institute an *inter partes* review of claims 23 and 60 of the '982 Patent.

B. Related Proceedings

Petitioner and Patent Owner identify, as related proceedings, a lawsuit in the United States District Court for the District of Massachusetts captioned *Energetiq Tech., Inc. v. ASML Netherlands B.V.*, Case Number 1:15-cv-10240-LTS. Pet. 1; Paper 7. Petitioner and Patent Owner also indicate that other *inter partes* review petitions have been filed for the '982 Patent or patents that relate to the '982 Patent as follows: IPR2015-01277, IPR2015-01279, IPR2015-01300, IPR2015-01303, IPR2015-01362,

¹ French Patent Publication No. FR 2554302 A1, published May 3, 1985 (Ex. 1204) (“Gärtner”). Unless otherwise noted, citations are to the certified English-language translation, submitted as part of Exhibit 1204.

² I.M. Beterov et al., *Resonance Radiation Plasma (Photoresonance Plasma)*, 31(6) Sov. Phys. Usp. 535 (1988) (Ex. 1216) (“Beterov”).

³ U.S. Patent No. 4,901,330, issued Feb. 13, 1990 (Ex. 1215) (“Wolfram”).

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IPR2015-01368, IPR2015-01375, IPR2016-00126, and IPR2016-00127.

Pet. 1; Papers 7, 10.

C. The '982 Patent

The '982 Patent relates to a laser-driven light source. Ex. 1201, 1:5–6. Figure 1 of the '982 Patent is reproduced below.

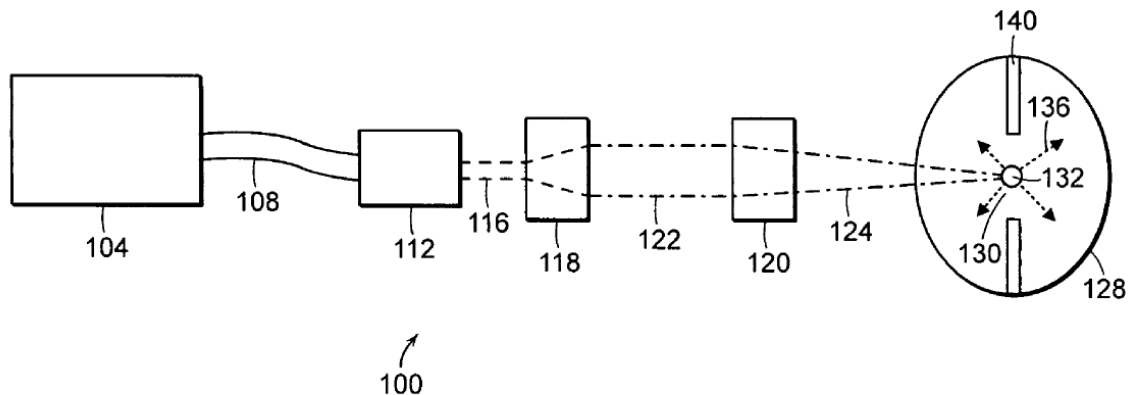


FIG. 1

Figure 1 illustrates a block diagram of a light source.

As shown in Figure 1, light source 100 includes laser 104 (*id.* at 4:36–37), chamber 128 that contains an ionizable medium (*id.* at 4:30–32), and ignition source 140 (*id.* at 5:28–29). Ignition source 140 generates an electrical discharge in region 130 of chamber 128 to ignite the ionizable medium (*id.* at 5:29–32), which creates plasma 132 (*id.* at 4:32–34). Laser 104 outputs laser beam 116 via fiber optic element 108. *Id.* at 5:15–16. Collimator 112 directs laser beam 116 to beam expander 118, which produces laser beam 122 and directs it to optical lens 120. *Id.* at 5:19–23. Optical lens 120 focuses the beam to produce smaller diameter laser beam 124 and directs it to region 130 (*id.* at 5:23–25) to emit high brightness light 136 (*id.* at 4:36–39).

D. Illustrative Claims

Claims 23 and 60 depend, directly, from claims 1 and 37, respectively. Independent claim 1 and dependent claim 23 are illustrative and are reproduced below.

1. A light source, comprising:
a chamber;
an ignition source for ionizing a gas within the chamber;
and
at least one laser for providing energy to the ionized gas within the chamber to produce a high brightness light.

Ex. 1001, 8:64–9:2.

23. The light source of claim 1, wherein the at least one laser emits at least one wavelength of electromagnetic energy that is strongly absorbed by the ionized medium.

Id. at 9:60–62.

E. Claim Construction

1. Legal Standard

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC.*, 793 F.3d 1268, 1277–1279 (Fed. Cir. 2015) (“Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA,”⁴ and “the standard was properly adopted by PTO regulation.”). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire

⁴ Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”).

disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

2. *Summary of the Petitioner’s Contentions*

Here, Petitioner proposes constructions for “light source” and “high brightness light.” Pet. 8–13. Upon review of the present record, we determine that Petitioner’s proposed constructions for “light source” and “high brightness light” are consistent with the broadest reasonable constructions of these terms. For purposes of this Decision, we adopt the following claim constructions:

Claim Term	Construction
“light source”	A source of electromagnetic radiation in the extreme ultraviolet (10 nm to 100 nm), vacuum ultraviolet (100 nm to 200 nm), ultraviolet (200 nm to 400 nm), visible (400 to 700 nm), near-infrared (700 nm to 1,000 nm (1 μ m)), middle infrared (1 μ m to 10 μ m), or far infrared (10 μ m to 1000 μ m) regions of the spectrum.
“high brightness light”	Light sufficiently bright to be useful for: inspection, testing or measuring properties associated with semiconductor wafers or materials used in the fabrication of wafers, or as a source of illumination in a lithography system used in the fabrication of wafers, a microscopy system, a photoresist curing system, or an endoscopic tool.

II. ANALYSIS

A. *Principles of Law*

The question of obviousness, under 35 U.S.C. § 103(a), is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject

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