Unified Patent Court
Einheitliches Patentgericht
Juridiction unifiée du brevet

Paris Local Division

UPC_CFI_440/2023

DECISION ON THE MERITS

of the Court of First Instance of the Unified Patent Court, delivered on *24 April 2025*

PLAINTIFF

Seoul Viosys Co., Ltd
65-16, Sandan-ro 163 beon-gil,
Danwon-gu - 15429 - Ansan-si,
Gyeonggi-do - Republic of Korea

Represented by
Pauline Debré
Laetitia Nicolazzi

DEFENDANT

Laser Components SAS
45B Route des Gardes
92190 Meudon, France

Represented by
Helge von Hirschhausen

INTERVENING PARTY

Photon Wave Co., Ltd.
52, Jugyang 1763 beon-gil,
Wonsam-myeon, Cheoin-gu,
Yongin, Gyeonggi Province, 17166
Republic of Korea

Represented by
Dorothea Hofer,
Andreas Oser
Peter Klein

CONTESTED PATENT

Patent number	*Patentee*
EP3404726	Seoul Viosys Co., Ltd

LANGUAGE OF THE PROCEEDINGS: French

COMPOSITION OF THE BOARD – BOARD SITTING IN PLENARY SESSION

President and Judge-Rapporteur	**Camille Lignières**
Legally qualified judge	**Peter Tochtermann**
Legally qualified judge Technically qualified judge	**Carine Gillet Anthony Soledade**

DECISION

THE PARTIES PRESENT

1. Seoul Viosys Co., Ltd. (hereinafter 'SEOUL VIOSYS'), the applicant in the main proceedings, is a South Korean company specialising in the manufacture and marketing of LED chips, i.e. light-emitting diodes, either on their own or integrated into electronic devices marketed under the 'VIOLEDS' brand. This company is part of the Seoul Semi Conductor group (hereinafter 'SSC'), which it describes as the world's second-largest LED manufacturer in 2023, with several manufacturing and development facilities in Korea. SEOUL VIOSYS is the holder of European patent EP 3 404 726 (hereinafter 'EP'726').
2. Laser Components SAS (hereinafter 'LASER COMPONENTS'), the main defendant, is a company specialising in the sale of optical, electronic and IT equipment for professional use. In France, it markets, in particular, UVC LED chips.
3. Photon Wave (hereinafter 'PHOTON WAVE'), a company incorporated under Korean law, is an intervener in the proceedings at the request of the main defendant, in its capacity as the manufacturer and supplier of the UVC LED chips marketed by LASER COMPONENTS.

FACTS AND PROCEEDINGS

4. On 5 December 2023, SEOUL VIOSYS brought an action for infringement of patent EP'726 against LASER COMPONENTS before the Paris Local Division of the Unified Patent Court (hereinafter "UPC"). This case is registered under number ACT_588685/2023.
5. No preliminary objections were raised by the defendant, in particular regarding the jurisdiction of the Unified Patent Court and the internal jurisdiction of the Paris Local Division.
6. On 17 January 2024, the defendant requested the intervention of PHOTON WAVE in its capacity as the manufacturer of the products alleged to be infringing.
7. On 18 March 2024, LASER COMPONENTS filed its statement of defence without a counterclaim seeking revocation of the patent in question. On the same date, PHOTON WAVE agreed to intervene in the case and requested a two-month extension to prepare a request for revocation of the patent in question, which was refused by the panel; it finally filed its statement on 13 June 2024 following the reply to SEOUL VIOSYS's statement of defence of 16 May 2023.

8. The requests to change the language of the proceedings on the basis of Rule 322 of the Rules of Procedure were not accepted due to a lack of agreement between the parties.

9. Finally, the intervener's request to be authorised to submit further pleadings pursuant to Rule 36 of the Rules of Procedure was also rejected.

10. An application for revocation of the patent in question was brought by PHOTON WAVE before the Central Division of Paris, which referred the application to this Division, which, by order of 24 January 2025, declared the application inadmissible.

The parties' submissions

11. SEOUL VIOSYS, in its statement of claim, requests the Court to grant the following:

I. Pursuant to Article 63 of the AJUB,
A) To issue a permanent injunction against the defendant, prohibiting it, directly or indirectly through any natural or legal person acting as an intermediary, within the territories of France, Germany and the Netherlands,
from manufacturing, offering, placing on the market, using, importing or holding for the aforementioned purposes the LED chips marketed under the reference numbers PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35, as well as any other product, regardless of its reference number, reproducing features 1, 2, 6, 7, 9, 10, 11, 12, 13 and 18 of European patent No. EP 3 404 726, of which Seoul Viosys is the proprietor.
B) Order the defendant to pay a penalty of €1,000 for each infringement of the injunction ordered in I.A (the infringement being established for each product bearing each reference number referred to in point I.A).

II. Pursuant to Article 64 of the AJUB,
A) Declare that patent EP 3 404 726 has been infringed by the LED chips PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35, which are offered, placed on the market, imported and held by the defendant,
B) order, subject to a penalty payment, the recall from the commercial channels of all infringing products referred to in point I A) in its possession or already distributed in France, Germany and the Netherlands
C) order the removal from circulation or destruction, subject to a penalty payment, of the infringing products referred to in point I A)
D) order the defendant to provide proof of compliance with the order concerning points II) B and C.

III. Pursuant to Article 67 of the AJUB and Regulation (EU) No 1215/2012 (Brussels I Recast)
A) order the defendant to provide Seoul Viosys, subject to a penalty payment of EUR 5,000 per day of delay, after a period of one (1) month from the service of the decision to be made, with all information concerning:
- The origin and distribution channels of the LED chips identified by the reference numbers PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35, as well as all other infringing products referred to in point I.A above;
- The quantities offered, placed on the market, imported and held by the defendant, as well as the turnover and profit margin realised by Laser Components as a result of the sale of the LED chips identified by the reference numbers PKB-H02-F35, PKC-H02-F35 and PKD-

H02-F35, as well as all other counterfeit products referred to in point I.A above, within the territories of France, Germany, the Netherlands and the United Kingdom,
- The names and addresses of the manufacturers, wholesalers, importers and other previous holders of the LED chips identified by the references PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35, as well as of all other counterfeit products referred to in point I.A above.

IV. Pursuant to Article 68 of the AJUB and Regulation (EU) No 1215/2012 (Brussels I Recast)
A) declare the defendant liable for all damages resulting from the patent infringement as described in point II.A.
B) Order the defendant to pay Seoul Viosys €150,000 on a provisional basis to compensate for the damage suffered as a result of the acts of infringement.
C) Order the defendant to pay Seoul Viosys €50,000 as provisional compensation for the non-pecuniary damage resulting from the acts of infringement.

V. Pursuant to Article 69 of the AJUB,
A) Order the defendant to bear the legal costs and other expenses incurred by Seoul Viosys.
B) Order the defendant to pay an advance on these costs in the amount of 50,000 euros.

VI. Pursuant to Article 82 of the AJUB,
A) Order that the decision to be made be enforceable immediately, notwithstanding any appeal and without the provision of security.

12. LASER COMPONENTS, the defendant in the main proceedings, filed its statement of defence on 18 March 2024, contesting the existence of infringement of the patent in question and opposing all the claims made by SEOUL VIOSYS in this regard. The representative of the defendant in the main proceedings was present at the oral hearing and referred to his written submissions.

13. The intervener, PHOTON WAVE, in its reply of 13 June 2024, also contests the existence of the infringement, essentially arguing that the TESCAN report was not suitable as evidence, that the allegedly infringing products did not reproduce feature 1.5, feature 1.14 (and consequently feature 1.16).

<u>Presentation of the patent in question</u>

Presentation of patent EP'726

14. Patent EP'726 (Exhibit 14 of SEOUL VIOSYS), owned by SEOUL VIOSYS, arose from an application filed on 11 January 2017 in English and was granted on 4 November 2020. It is entitled 'ultraviolet light-emitting device'.

15. This patent is in force at the time of SEOUL VIOSYS's infringement claim in the following contracting member states: France, Germany, the Netherlands, and the United Kingdom (Exhibits 15 to 19 of SEOUL).

16. EP'726 relates to an ultraviolet (UV) light-emitting device adapted to improve light extraction efficiency ([0001] of the Patent).

17. Regarding the technical field, the descriptive part of the Patent explains that in recent years, there has been growing interest in a flip-chip type light-emitting device in order to improve luminous efficiency whilst resolving problems related to heat dissipation ([0002] of the Patent).

18. However, the LED chips of the prior art had the following disadvantages:

    - Electrical conductivity that is much lower than that of metals due to current crowding, which can occur when an electric current passes through an n-type semiconductor layer, an active layer and a p-type semiconductor layer, thereby reducing luminous efficiency and reliability ([0004] and [0005] of the Patent)**.**

19. Patent EP'726 proposes to overcome these difficulties by disclosing a light-emitting device, in particular a UV light-emitting device, which can prevent current crowding within semiconductor layers by improving current distribution.

20. The patent in question comprises 18 claims, including the main claim and 17 dependent claims.

21. Claim 1 in English reads as follows:

    1. *A UV light-emitting device (300, 300a, 400, 500) comprising:*

    a substrate (310, 410, 510);
    a first-type semiconductor layer (321, 421, 521) disposed on the substrate (310, 410, 510);
    a mesa disposed on the first conductivity-type semiconductor layer (321, 421, 521), and comprising a second conductivity-type semiconductor layer (323) and an active layer (322) interposed between the first conductivity-type semiconductor layer (321, 421, 521) and the second conductivity-type semiconductor layer (323);
    a first contact electrode (341, 441, 541) contacting the first conductivity-type semiconductor layer (321, 421, 521) exposed around the mesa; a second contact electrode (342, 442, 542) disposed on the mesa and contacting the second conductivity-type semiconductor layer (323);
    a passivation layer (360, 460, 560) covering the first contact electrode (341, 441, 541), the mesa and the second contact electrode (342, 442, 542), and comprising openings disposed on the first contact electrode (341, 441, 541) and the second contact electrode (342, 442, 542); and a first bump electrode (351, 451, 551) and a second bump electrode (352, 452, 552) electrically connected to the first contact electrode (341, 441, 541) and the second contact electrode (342, 442, 542) through the openings of the passivation layer (360, 460, 560), respectively, wherein the mesa has a plurality of indentations in plan view and each of the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) covers the openings of the passivation layer (360, 460, 560), and
    wherein each of the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) covers a portion of the passivation layer (360, 460, 560), the UV light-emitting emitting device (300, 300a, 400, 500) further comprising:

a first pad electrode (331, 431, 531) dis- posed on the first contact electrode (341, 441, 541), a second pad electrode (332, 432, 532) disposed on the second contact electrode (342, 442, 542), and wherein the openings of the passivation layer (360, 460, 560) expose the first pad electrode (331, 431, 531) and the second pad elec- electrode (332, 432, 532), and the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) are connected to the first pad electrode (331, 431, 531) and the second pad electrode (332, 432, 532) through the openings, respectively, and characterised in that the openings of the passivation layer (360, 460, 560) exposing the first pad electrode (331, 431, 531) comprise openings disposed in the indentations.

22. Claim 1 in the French language reads, according to the breakdown of features proposed by the applicant and not contested by the defendants, as follows:

'Claim 1 describes the structure envisaged by the invention and reads as follows (numbering of features added):

1. *"An ultraviolet light-emitting device (300, 300a, 400, 500) comprising:*
2. *a substrate (310, 410, 510)*
3. *a semiconductor layer of a first conductivity type (321, 421, 521) on the substrate (310, 410, 510);*
4. *a mesa disposed on the semiconductor layer of the first conductivity type (321, 421, 521), and comprising a semiconductor layer of a second conductivity type (323) and an active layer (322) interposed between the semiconductor layer of the first conductivity type (321, 421, 521) and the semiconductor layer of the second conductivity type (323);*
5. *a first contact electrode (341, 441, 541) in contact with the semiconductor layer of the first conductivity type (321, 421, 521) exposed around the mesa;*
6. *a second contact electrode (342, 442, 542) disposed on the mesa and in contact with the semiconductor layer of the second conductivity type (323);*
7. *a passivation layer (360, 460, 560) covering the first contact electrode (341, 441, 541), the mesa and the second contact electrode (342, 442, 542), and comprising apertures disposed over the first contact electrode (341, 441, 541) and the second contact electrode (342, 442, 542); and*
8. *a first bump electrode (351, 451, 551) and a second bump electrode (352, 452, 552) electrically connected to the first contact electrode (341, 441, 541) and to the second contact electrode (342, 442, 542) through the openings in the passivation layer (360, 460, 560), respectively,*
9. *wherein the mesa has a plurality of indentations as viewed in plan view*
10. *and each of the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) covers the openings in the passivation layer (360, 460, 560),*

11. *and wherein each of the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) covers a portion of the passivation layer (360, 460, 560),*

12. *the ultraviolet light-emitting device (300, 300a, 400, 500) further comprising: a first pad electrode (331, 431, 531) disposed on the first contact electrode (341, 441, 541),*

13. *a second pad electrode (332, 432, 532) disposed on the second contact electrode (342, 442, 542),*

14. *and wherein the openings in the passivation layer (360, 460, 560) expose the first pad electrode (331, 431, 531) and the second pad electrode (332, 432, 532)*

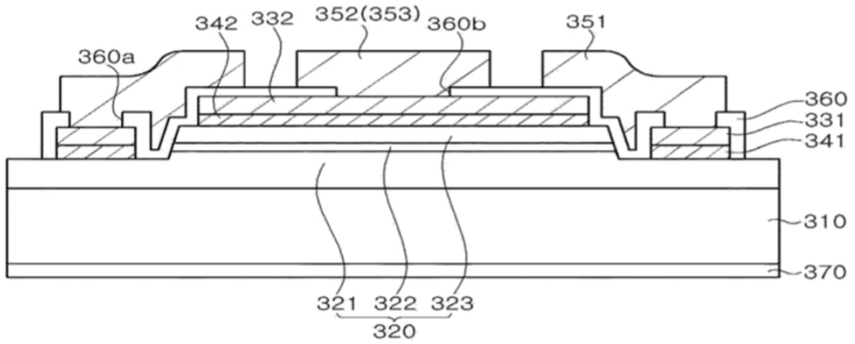
15. *and the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) are connected to the first pad electrode (331, 431, 531) and to the second pad electrode (332, 432, 532) through the respective openings,*

and characterised in that

16. ***the openings in the passivation layer (360, 460, 560) exposing the first pad electrode (331, 431, 531) comprise openings disposed in the indentations.***

23. Paragraph [0033] of the Patent describes Figure 14, which depicts an exemplary embodiment of the invention, with a cross-sectional view shown in Figure 15a) as follows:

【FIG. 15】



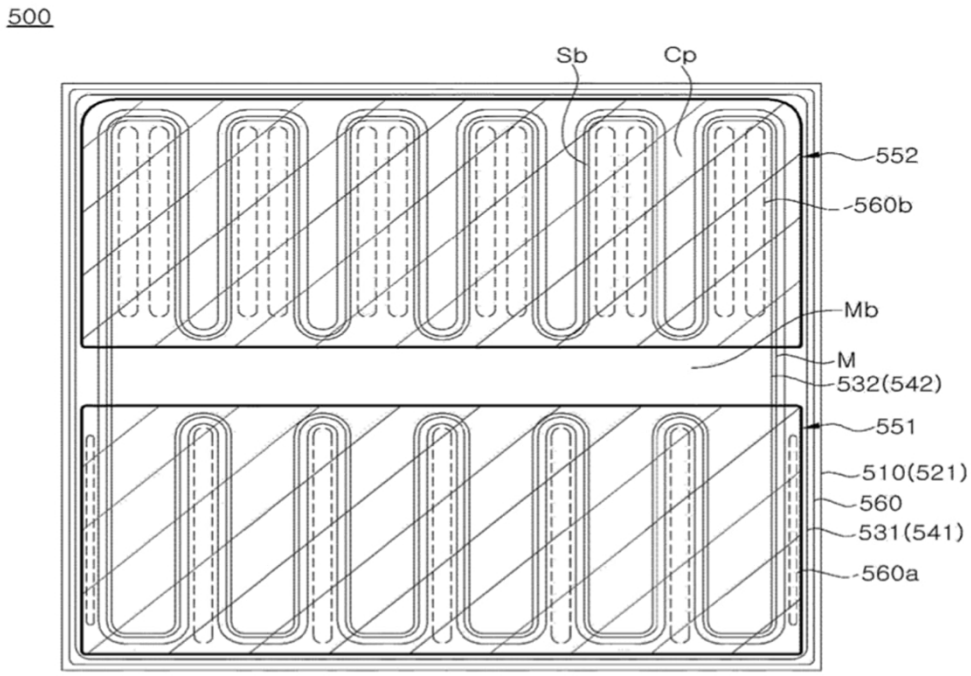
(a)

24. As explained by SEOUL VIOSYS (paragraphs 49 to 51 of the statement of claim), the invention lies in the presence of indentations in the mesa, but also in the fact that the openings of the passivation layer are located there. The patent in question does not specify a precise shape for the indentations found in the mesa. The description simply states that "*[0017] The indentations may have an elongated shape in the same direction*".

25. This is illustrated by Figure 22 of the Patent (one of the embodiments of the Patent), which shows that the openings formed in the passivation layer exposing the first pad electrode

pad are located within the indentations of the mesa, these openings allowing contact between this first pad electrode and the first bump electrode.

【FIG. 22】



The interpretation of disputed terms in the claims

Principles of interpretation

26. In accordance with Article 69 of the European Patent Convention (EPC) and the Protocol on its interpretation, this Court adopts the standard for the interpretation of patents established by the Court of Appeal of the Unified Patent Court in two orders (UPC_CoA_335/2023 and UPC_CoA_1/2024).

    1) The patent claim is not merely the starting point, but the basis for determining the scope of protection of the European patent.
    2) The interpretation of a patent claim does not depend solely on the strict and literal meaning of the terms used. On the contrary, the description and drawings must always be used to aid the interpretation of the patent claim and not merely to resolve ambiguities in the patent claim.
    3) However, this does not mean that the patent claim serves merely as a guideline and that its scope may extend to whatever the patent proprietor had envisaged, taking into account the description and drawings.
    4) The patent claim must be interpreted from the perspective of a person skilled in the art.
    5) In applying these principles, the aim is to combine adequate protection for the patent holder with sufficient legal certainty for third parties.

27. With regard to claim 1, certain terms are disputed between the parties as to the interpretation of the subject-matter claimed.

28. The first disputed term is that of ‘contact electrode’ (mentioned in particular in feature 1.5 of claim 1).

29. PHOTON WAVE thus asserts that 'a contact electrode (pages 6 and 7 of the statement of 13 June 2024) is a specific type of electrode characterised by features in addition to the property of allowing current to flow. PHOTON WAVE adds that 'the patent requires, by means of feature 1.5 and as interpreted by the description, that there be an ohmic connection between an electrode metal and the n-type semiconductor material.' (see col. 8, l. 57 to col. 9, l. 1 of patent EP 3404 726 B1). PHOTON WAVE concludes that the contact electrode in the context of the patent in question is a "contact electrode dedicated to providing an ohmic connection to the n-type semiconductor material". PHOTON WAVE relies on the testimony of [redacted], according to which a contact electrode is a specific type of electrode whose material must be selected according to its operational function in relation to that of the semiconductor (see PHOTON WAVE's exhibits I3 and I3a).

30. SEOUL VIOSYS, on the contrary, maintains that patent EP'726 defines the first contact electrode as a component 'in contact' with the semiconductor layer of the first conductivity type (the n-layer) in paragraph 27 of its supplementary statement of 12 July 2024.

31. The Court notes, as PHOTON WAVE did in its submissions, that the patent in question states in its descriptive section [0057]: 'the light-emitting device may also include the first contact electrode 141 and a second contact electrode 142 between theof the first conductivity type 121 and the stepped pad layer 133 and between the semiconductor layer of the second conductivity type 123 and the second pad electrode 132 in order to improve the ohmic contact characteristics (…)".

32. However, this is merely one of the embodiments mentioned in the patent. Furthermore, the following [0058] states: *'Here, the first contact electrode 141 is an electrode designed to form ohmic contact characteristics with the semiconductor layer of the first conductivity type*'. The term *'here'* clearly suggests that this property is specific to the embodiment in question (referred to as 100 in patent EP'726). The generic definition of the invention in patent EP'726 is silent on this point. This is also the case for the other embodiments (references 300, 400, 500 and 600) described in patent EP'726.

33. Last but not least, claim 1 of the patent makes no mention of the requirement for an ohmic contact. Although ohmic electrodes are the simplest, an ohmic contact is not the only option available, as an LED chip could also operate using a Schottky-type current. Furthermore, the term 'contact electrode' as used in the French text is merely the translation of the original English version 'contact electrode', which could also have been translated as 'electrode in contact' and does not imply that this electrode is dedicated to a specific type of contact such as ohmic contact.

34. The Court will therefore adopt the broad interpretation of the term as proposed by SEOUL VIOSYS, namely a 'contact electrode' (with the semiconductor layer) and not necessarily an 'ohmic contact'.

35. With regard to the terms 'bump electrode' and 'pad electrode', PHOTON WAVE and LA-SER COMPONENTS (in their respective statements of defence and intervention) criticise SEOUL VIOSYS for having arbitrarily chosen a particular definition in the questions put to the testing laboratory, even though these terms do not correspond to a known or generally accepted definition; however, the Court notes that the defendants do not propose any other definition for these terms.

36. The Court adopts the definition proposed by SEOUL VIOSYS for these terms, which corresponds to what is taught by the patent in question:

    - The 'bump electrode' (page 21 of the statement of claim) enables the chip to be attached to the circuit, thereby establishing an electrical current between the external circuit and the contact electrodes. This is supported by the description in [0009], [0011] and [0072] as well as by the figures of the patent, where they are shown in particular at numbers 351 and 352 (see Figure 15a *above*), which depict the two bump electrodes.

    - The 'pad electrodes' establish electrical contact between the bump electrodes and the contact electrodes (page 21 of the application), which is supported by the description in [0112] of the embodiment shown in Figure 15a (see paragraph 23 above) referring to the pad electrodes numbered 331 and 332.

37. Furthermore, the term 'expose' is disputed between the parties in the context of feature 1.14 of claim 1: 'the openings in the passivation layer (360, 460, 560) expose the first pad electrode and the second pad electrode'.

38. PHOTON WAVE and LASER COMPONENTS (in their respective statements of defence and intervention) conclude that it is apparent from patent EP'726 that the passivation layer was deposited on the electrodes and then etched to expose the electrodes. In their rejoinder of 14 June 2024, the defendants add that the wording of the claim requires that it is the openings in the passivation layer which enable the contact electrodes to be connected to the bump electrodes.

39. In its reply of 16 May 2024, SEOUL VIOSYS argues that claim 1 of patent EP 726 relates to a device and not to a method, and that the term *'expose'* does not refer to a specific manufacturing process but merely indicates that the openings in the passivation layer allow the contact electrodes to be connected to the bump electrodes. The applicant concludes that the choice of etching process should not limit the scope of the patent.

40. According to the Court, it should be noted that the patent in question discloses openings in the passivation layer, namely 360a and 360b, as explained in paragraph [0130] of the patent: *'Referring to FIG. 19A and FIG. 19B, a passivation layer 360 having openings 360a, 360b formed to expose the surfaces of the first and second pad electrodes 331, 332 is formed. The opening 360a exposes the first pad electrode 331 around the mesa M and the opening 360b exposes the second pad electrode 332 on the mesa M*." It follows that the term "expose" in the context of the patent means that the passivation layer has been removed in certain places.

Regarding the infringement alleged by SEOUL VIOSYS

41. SEOUL VIOSYS claims that the PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35 chips infringe its EP'726 patent.

42. To demonstrate the alleged infringement, SEOUL VIOSYS relies on internal analyses carried out by SSC showing optical microscope images of the PKC and PKD chips (Exhibit 10 of SEOUL VIOSYS) and on a report prepared at its request by the TESCAN laboratory following tests carried out on the PKB chip.

43. It is not disputed that the chips alleged to be infringing were manufactured by PHOTON WAVE, were purchased online from the Lasercomponents.com website, and were delivered to France by the distributor LASER COMPONENTS.

44. LASER COMPONENTS and PHOTON WAVE, however, dispute the existence of the alleged infringement, arguing that:

- As regards the probative value of SEOUL VIOSYS's Exhibit 11, the TESCAN report is an inappropriate piece of evidence,

- On the merits, the chips in question do not infringe the claims of SEOUL VIOSYS's patent, in light of the written statements by the PHOTON WAVE engineer involved in the design of the chips in question, [redacted] , explaining how these chips were designed (Exhibits I3 and I3a of PHOTON WAVE).

On the probative value of the TESCAN report

45. The Court notes that the TESCAN tests produced by SEOUL VIOSYS in Exhibit 12 constitute a private expert report prepared at the request of the representatives of the claimant in the infringement action, as provided for in Rule 170(b) of the Rules of Procedure, and that there is nothing in the file to cast doubt on the fact that TESCAN is an independent laboratory.

46. The methodology used by the laboratory is sufficiently explained on page 2 of the report as follows:

LES TECHNIQUES UTILISÉES :

- Profils de profondeur **D-SIMS** (positifs et négatifs) à travers toute la structure de la LED (Al, Ga) N jusqu'au substrat, sous-traités à PROBION (CAMECA IMS 4f). En effet, TESCAN ANALYTICS ne dispose pas de cette technique, et PROBION est reconnu pour son expertise dans les matériaux semi-conducteurs.
- **Tomographie FIB Xe/SEM** de la section de type n de la structure de la LED (TESCAN AMBER X, Xenon FIB à double faisceau).
- **Coupe transversale FIB Ga/SEM** des sections de type n et de type p de la structure de la LED (TESCAN AMBER, Gallium FIB à double faisceau).
- **Préparation des lamelles FIB Ga TEM** (TESCAN AMBER G).
- Analyse **(S)TEM/EDS** de la structure complète de la LED, depuis les électrodes de bosse jusqu'au substrat (THERMOFISHER TITAN).

47. The Court notes, first of all, that the defendants' challenge to the tests does not relate to the raw results but to the interpretation of those results.

48. The defendants criticise the TESCAN report on the grounds that the tests answer questions posed by SEOUL VIOSYS which are allegedly leading.

49. The questionnaire submitted by SEOUL VIOSYS was as follows (Appendix 2 – Instructions – of the TESCAN report, page 34 of Exhibit 12bis):

1) La puce LED comprend-elle un substrat ?
2) Existe-t-il une couche semi-conductrice d'un premier type de conductivité et comment est-elle placée par rapport au substrat ?
3) Une mesa est la combinaison d'une couche semi-conductrice d'un second type de conductivité et d'une couche active. La puce LED comporte-t-elle une mesa ? Dans l'affirmative, veuillez décrire l'emplacement de la mesa par rapport aux couches conductrices.
4) Existe-t-il une première électrode de contact en contact avec la couche semi-conductrice du premier type de conductivité et comment est-elle placée par rapport à la mesa ?
5) Y a-t-il une seconde électrode de contact disposée sur la mesa en contact avec la couche semi-conductrice du second type de conductivité ?
6) Existe-t-il une couche de passivation et quels éléments de la structure de la puce recouvre-t-elle ? Cette couche de passivation comporte-t-elle des ouvertures et, dans l'affirmative, où sont-elles placées ?
7) La puce LED comprend-elle une première électrode de plot disposée sur la première électrode de contact et une seconde électrode de plot disposée sur la seconde électrode de contact ?
8) Veuillez identifier les électrodes de bosse, comment elles sont placées par rapport aux électrodes de contact et comment elles sont connectées à ces dernières ?
9) En cas d'ouvertures dans la couche de passivation, veuillez indiquer comment elles sont placées par rapport aux électrodes de bosse et aux électrodes de plot ? Les ouvertures permettent-elles des contacts spécifiques entre les électrodes de bosse et de plot ?
10) Les électrodes de bosse couvrent-elles toutes les ouvertures des couches de passivation et une partie de la couche de passivation ?

11) Quelle est la forme de la mesa vue en plan de la surface de la puce ? La mesa présente-t-elle plusieurs indentations en vue du dessus ?
12) Quelle est la géométrie des ouvertures dans la couche de passivation par rapport aux indentations ? Les ouvertures sont-elles disposées dans les indentations ou s'étendent-elles au moins dans les indentations ?
13) Quelle est la géométrie des électrodes de bosse par rapport aux indentations ? Les électrodes de bosse se superposent-elles à la mesa ?

50. The points most strongly criticised by the defendants are those relating to the alleged existence of a 'mesa' and the identification of 'contact electrodes', 'pad electrodes' and 'bump electrodes', on the grounds that these concepts do not correspond to any standardised definition (see, in particular, the supplementary pleadings of LASER COMPONENTS and PHOTON WAVE).

51. However, it is not disputed that the concept of a 'mesa' is well known in the technical field of LED chips, and indeed the defendants do not dispute its definition. Therefore, question 3)

concerning the existence or otherwise of a mesa in the disputed chips could not have led to an erroneous interpretation of the tests.

52. Furthermore, the Court stated *above* (§36 in the section on the interpretation of the terms at issue between the parties) that the concepts of 'pad electrode' or 'bump electrode' could be readily understood in the context of SEOUL VIOSYS's patent, and that the concept of
The term 'contact electrode' should be understood in its broadest sense within the context of the patent, namely as 'the electrode in contact'. Nothing in the report suggests that the identification of these different types of electrode, as set out in the tests, does not correspond to the definition adopted by the Court and would have led to errors of interpretation.

53. Finally, PHOTON WAVE asserts that SEOUL VIOSYS's questions presuppose the existence of openings; however, the wording of question 6) includes a first part, 'does the passivation layer have openings?', to which the test operators could have answered in the negative.

54. It follows that, in general, the questions posed by SEOUL VIOSYS appear sufficiently objective not to have influenced the test results.

55. Furthermore, the defendants criticise the test operators for having added the chemical composition of the elements in the various layers to the ESD images (statement of defence, pp. 5–7). It is indeed evident that the chemical symbols were added manually by the authors of the TESCAN report. However, unless it can be demonstrated that the observed reality was falsified on this occasion, these annotations, added on the initiative of the laboratory test operators, are simply a matter of layout and aid comprehension. The Court further notes that the additional measurements carried out by [redacted], as described in the written witness statements produced by PHOTON WAVE, in no way contradict the presence of these materials in the disputed chips but, on the contrary, confirm their presence (page 11 of PHOTON WAVE's reply, and PHOTON WAVE exhibits No. I3 and its translation No. l3a).

56. Furthermore, the defendants object to the inclusion of arrows and captions on the images appearing in the report; however, the Court considers that any reader of the report is well aware that these captions are intended to aid understanding and that this does not call into question the probative value of the TESCAN report.

57. Finally, LASER COMPONENTS alleges that certain images in the report have been 'manipulated', arguing: 'The upper part of image 5 has been copied into image 4, meaning that image 4 is not an actual SEM image. Similarly, the upper part of image 8 has been copied into image 7, meaning that image 7 is not a genuine image obtained by SEM" (page 3 of the defence statement). This allegation is refuted by SEOUL VIOSYS in its reply, which makes available the original files that are the subject of the dispute. These allegations of 'manipulation' of the images in bad faith by the authors of the report are in no way justified.

58. Consequently, none of the criticisms regarding the probative value of the TESCAN report produced by SEOUL VIOSYS is relevant to demonstrating that it is inappropriate. The Court considers that the said report possesses the probative value appropriate to a private expert report as described in Rule 170 of the Rules of Procedure.

The challenge by the PKB chip to the reproduction of features 1.4, 1.5 and 1.14 of claim 1 of the SEOUL VIOSYS patent

59. LASER COMPONENTS and PHOTON WAVE, in challenging the substance of the alleged infringement by SEOUL VIOSYS concerning the PKB chip, maintain that claim 1 is not reproduced in its features 1.4, 1.5 and 1.14.

Regarding the reproduction of feature 1.4:

60. Feature 1.4 reads as follows*: 'a mesa disposed on the semiconductor layer of the first conductivity type, and comprising a semiconductor layer of a second conductivity type and an active layer interposed between the semiconductor layer of the first conductivity type and the semiconductor layer of the second conductivity type'*

61. In their initial submissions (statements of defence and intervention), LASER COMPONENTS and PHOTON WAVE argued that the TESCAN tests did not allow a conclusion to be drawn as to the position of the images identifying the mesa in relation to the images identifying the active layer.

62. In its response, (brief of 16 May 2024) SEOUL VIOSYS explained that the report indicates that the D-SIMS curves (showing the chemical composition of the active layer) were taken in the mesa region and that the STEM and SEM images (images 3, 4 and 5 of the TESCAN report) show the active layer in the mesa (pages 6–10).

63. In their rejoinder, the defendants did not address this point of contention but argued that the PKB chips reproduced the technology of US Patent '747, which clearly shows, in Figure 1 explained by lines 14 to 22 of column 6, a mesa disposed on a semiconductor layer of a first conductivity type (reference 120), and comprising a semiconductor layer of the second conductivity type (reference 140) and an active layer (reference 130) interposed between the semiconductor layer of the first conductivity type and the semiconductor layer of the second conductivity type.

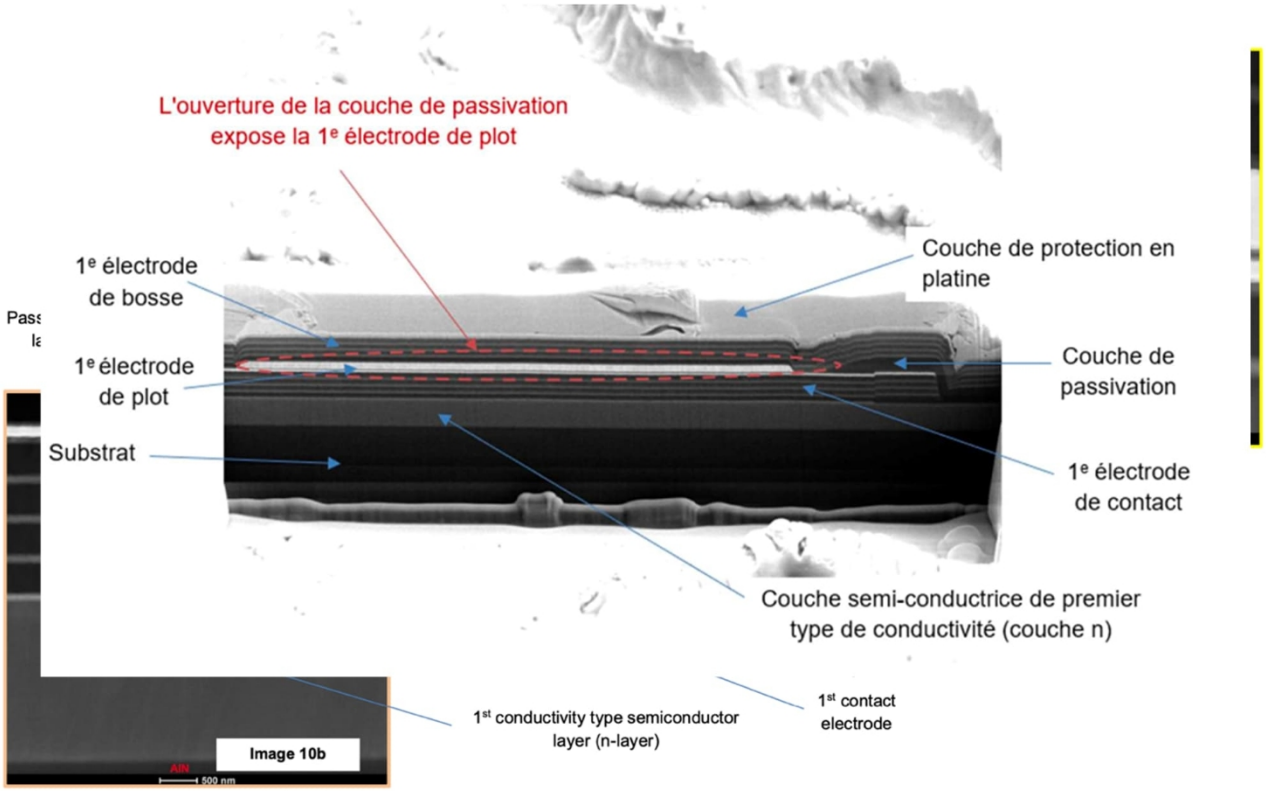
64. The reproduction by the PKB chip of feature 1.4 is therefore sufficiently demonstrated by SEOUL VIOSYS, the defendants' objections being unfounded.

On the reproduction of feature 1.5

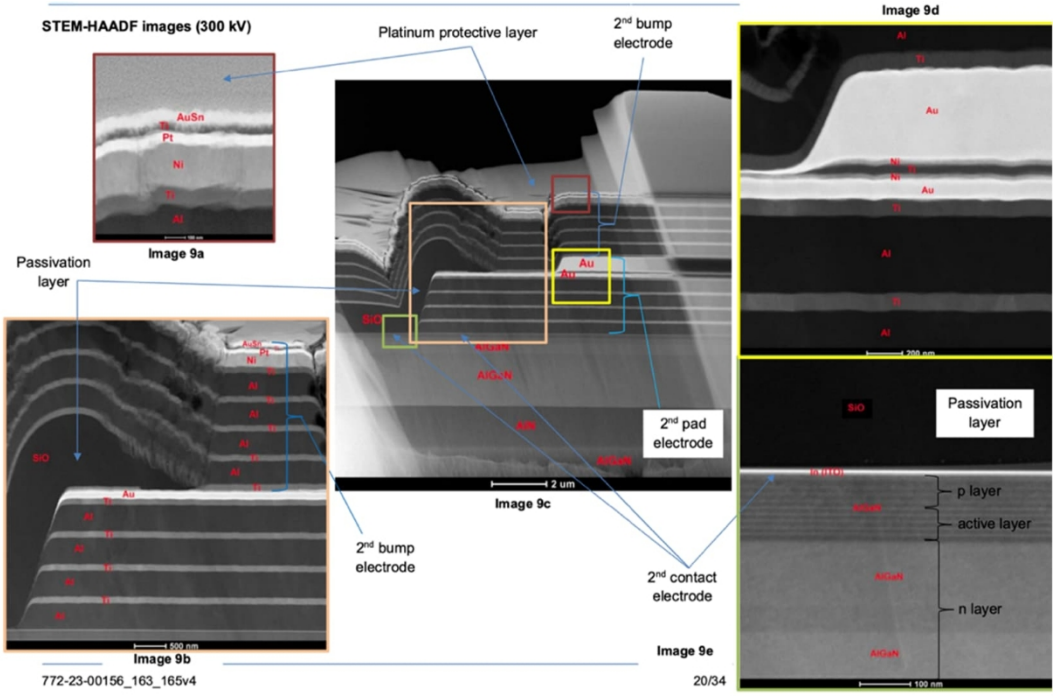
65. Claim 1.5 reads as follows*: 'a first contact electrode in contact with the semiconductor layer of the first conductivity type exposed around the mesa'.*

66. It has been explained above that the term 'contact electrode' must be interpreted in the context of the Patent as 'electrode in contact' and not as an electrode necessarily establishing ohmic contact with a semiconductor.

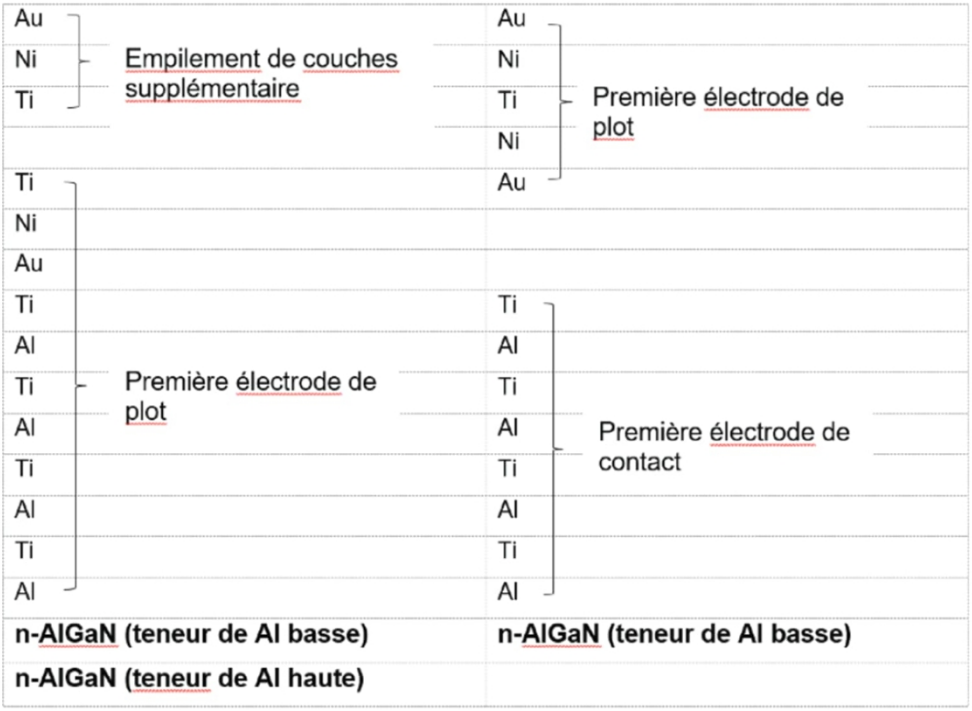
67. SEOUL VIOSYS relies on the STEM images on pages 19 and 22 of the TESCAN report to demonstrate that feature 1.5 is reproduced by the PKB chip:



68. LASER COMPONENTS claims in its defence brief that a first contact electrode is missing from the PKB product and that, consequently, feature 1.5 is missing (page 8 of its defence brief). PHOTON WAVE echoes the defence's argument by challenging the identification of the electrodes as proposed in the TESCAN report on the grounds that the first pad electrode and the second pad electrode cannot be made of different materials, and they propose a different interpretation of the TESCAN report as well as a different identification of the layers comprising the electrodes, relying on images 9a and 9e on page 20 of the report as follows:



69. PHOTON WAVE reads and interprets these images as follows in the left-hand section of the diagram below, in contrast to the claimant's interpretation in the right-hand section (page 7 of LASER COMPONENTS' supplementary statement):

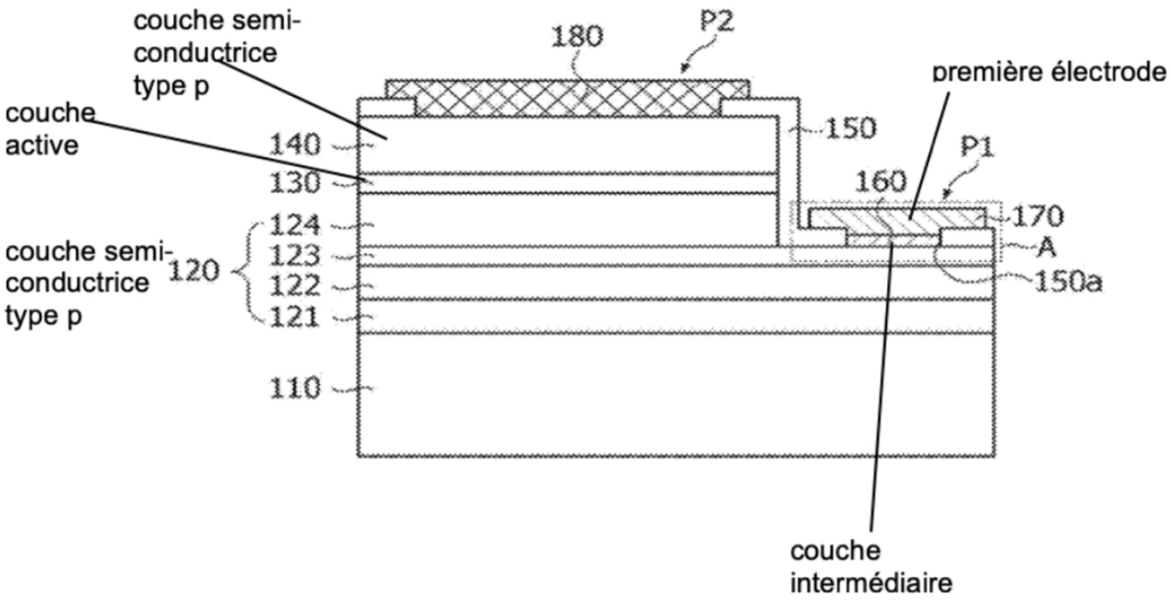


70. The Court considers that PHOTON WAVE's interpretation of the STEM images—which posits the existence of an intermediate layer in place of the first pad electrode and thus excludes the existence of a first contact electrode in the n-layer—is not convincing for two reasons:

- The first reason is that in patent EP'726, there is nothing to suggest that symmetry is required for the two pad electrodes,

- The second reason is that US'747, cited by PHOTON WAVE to argue that PKB implemented the said patent of which [redacted] is the inventor, clearly indicates that the intermediate layer 160 is an n-type semiconductor, (PHOTON WAVE's reply, page 9, lines 1 and 2); it is therefore part of the multilayer block forming the n-layer of the LED.

【Fig. 1】



(Figure 1 of US Patent No. 747, p. 8 of PHOTON WAVE's reply, extracted from Exhibit I3bis, page 3 of PHOTON WAVE)

71. It follows that PHOTON WAVE's argument regarding the presence of an 'intermediate layer' to rule out the presence of a first contact electrode in the n-layer, as provided for in claim 1.5 of the patent in question, is unfounded and will not be upheld.

72. SEOUL VIOSYS has therefore sufficiently demonstrated that the PKB chip embodies feature 1.5.

On the fulfilment of claim 1.14

73. Claim 1.14 reads as follows*: "the openings in the passivation layer expose the first pad electrode and the second pad electrode"*

74. To demonstrate that, in the PKB chip, the passivation layer is interrupted, allowing direct contact, SEOUL VIOSYS relies on the zoomed-in view of Figure 8 and Figure 10c (concerning the n-side, on pages 19 and 22 of the report) and on the zoomed-in view of Figure 5 and Figure 9c concerning the p-side (on pages 16 and 20 of the TESCAN report), which are as follows:

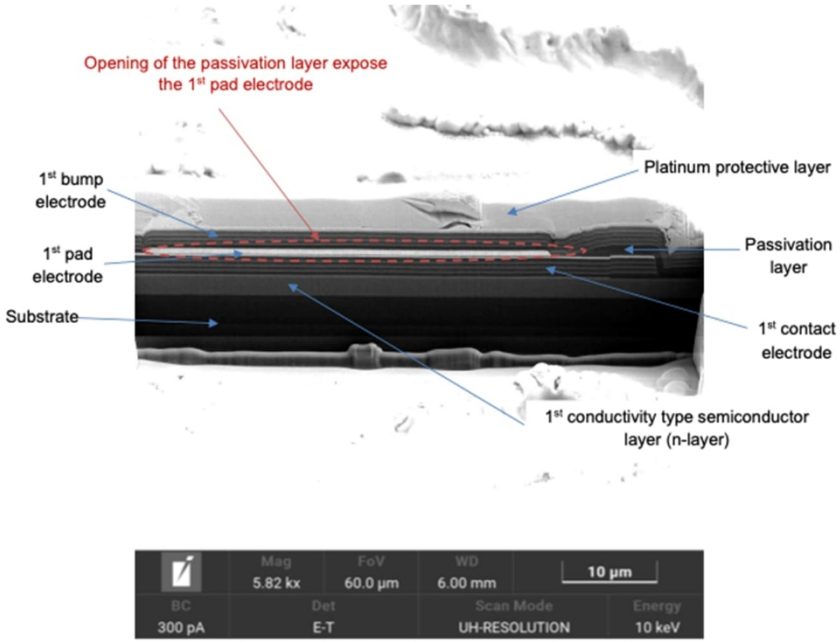
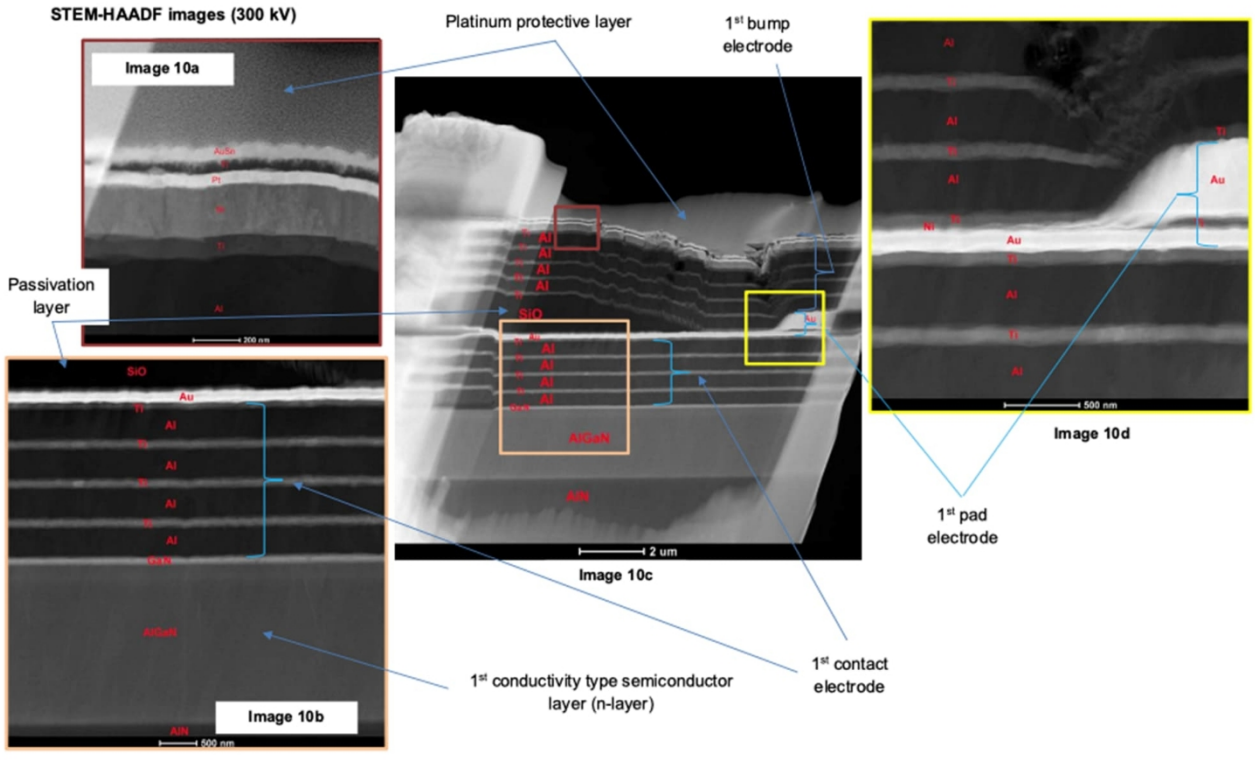


Image 8: SEM, 10 kV, chip 1 after FIB, cross section on n side



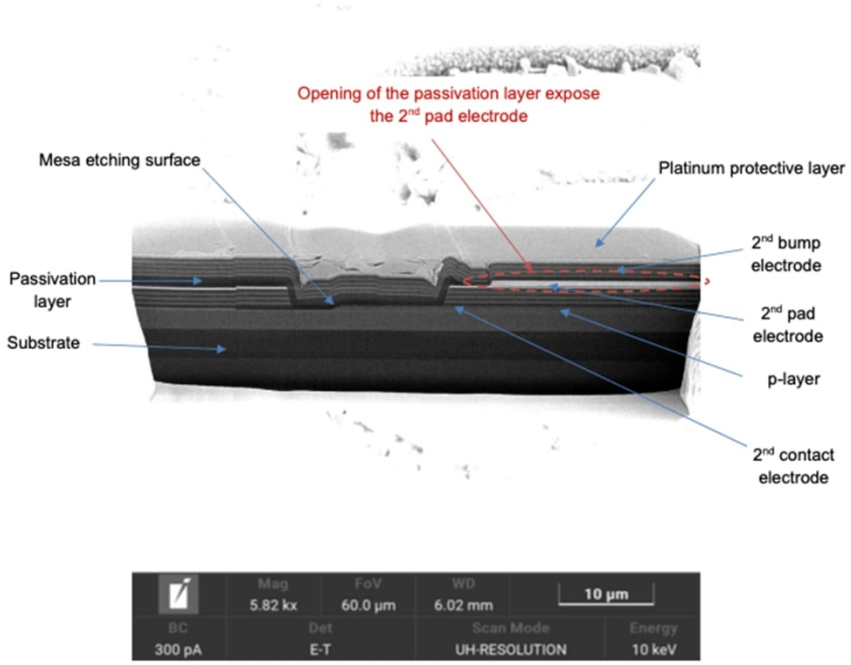
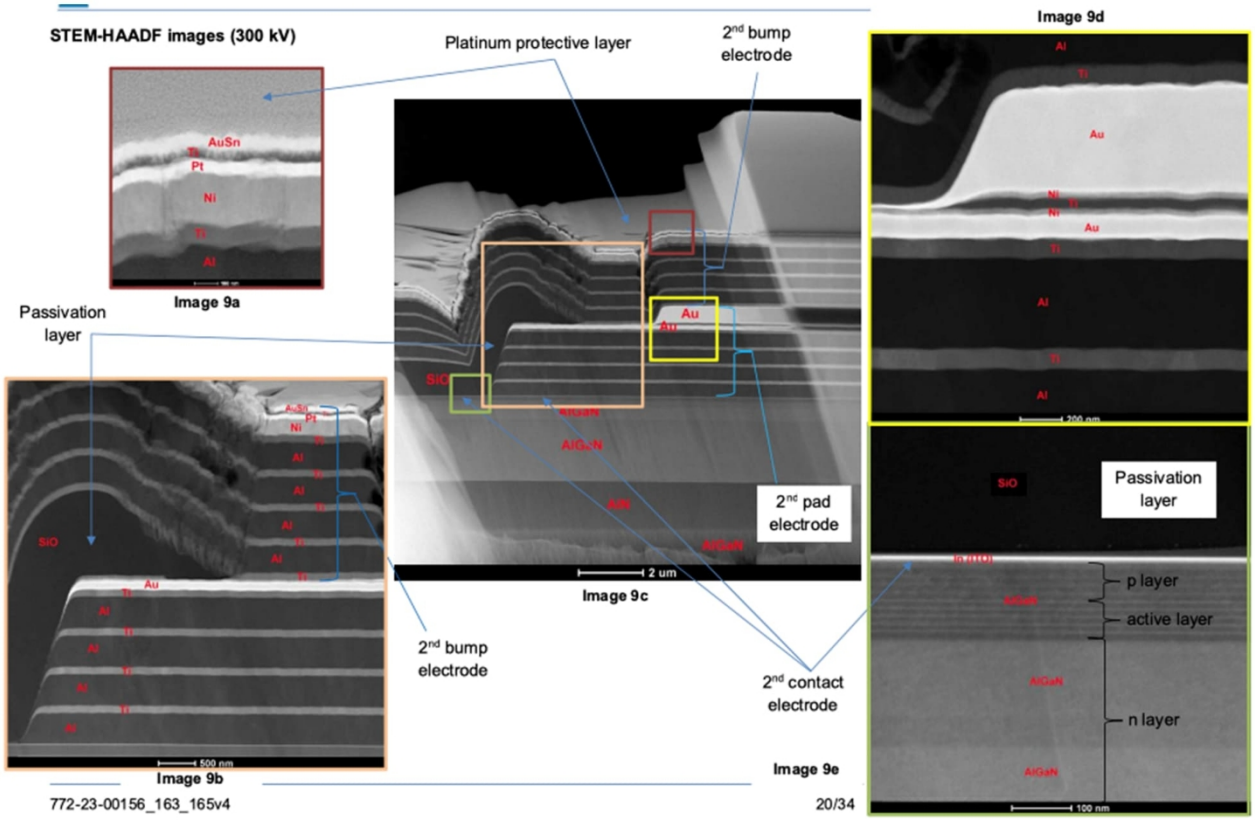


Image 5: SEM, 10 kV, chip 1 after FIB, cross section on p side



75. According to the defendants, this feature is not reproduced by the PKB chip because there is a lateral gap between the passivation layer and the Ti/Ni/Au layer stack, and the term ‘expose’ implies that the passivation layer was removed by an etching process after the formation of the pad electrodes. However, according to the defendants, analysis of the

disputed chip leads to the conclusion that the pad electrodes were formed after the apertures were created.

76. It has already been stated *above* (paragraph 39 of this decision) that the etching process mentioned in the description of patent EP'726 is merely one embodiment of the invention and that it is sufficient to demonstrate that only part of the layers is exposed for feature 1.14 to be reproduced.

77. As has been stated in relation to feature 1.5 and acknowledged by PHOTON WAVE.

78. The pad electrodes consist not only of the stacked upper Ni/Au layers but also of the stacked underlying Au/Ni/Ti layers, which are clearly situated beneath the passivation layer. It is therefore sufficiently demonstrated, and particularly evident in Figures 9c and 10c on pages 20 and 22 of the TESCAN report, that the passivation layer ends above these layers and thus 'exposes' the first pad electrode and the second pad electrode. Furthermore, the additional measurements carried out by [redacted] confirm that these layers extend beneath the passivation layer and across the entire surface of the opening. It is therefore justified to state that the openings in the passivation layer expose the underlying Au-Ni-Ti layers which form part of the pad electrode. [redacted] acknowledges this on page 3 of his statement in Exhibit 14a of PHOTON WAVE: *'the measurement site is located beneath the SiO_2 passivation layer. At this location, there is no stack of Ti/Ni/Au layers, but only the stack of layers that I interpreted as* a "pad *electrode"'* (*or 'bump electrode'* in French)*.* It is therefore irrelevant that the upper Ni/Au layers were formed after the openings were made in the passivation layer. The Court also notes that these lower layers are in contact with the bump electrode layers at the level of the opening.

79. It follows that SEOUL VIOSYS has sufficiently demonstrated that the PKB chip reproduces feature 1.14 of EP 726.

Regarding the dependent claims (Nos. 2, 6, 7, 9, 10, 11 to 13 and 18)

80. Claim 2 reads as follows in English, the language of the patent: *'The UV light emitting device (300, 300a, 400, 500) of claim 1, wherein the first contact electrode (341, 441, 541) contacts the first conductivity-type semiconductor layer (321, 421, 521) at least in the indentations of the mesa*'. The French translation is as follows: *"Ultraviolet light-emitting device (300, 300a, 400, 500) according to claim 1, wherein the first contact electrode (341, 441, 541) is in contact with the first conductivity-type semiconductor layer (321, 421, 521) at least in the indentations of the* mesa" protects a UV LED chip in which the first contact electrode is in contact with the n-type layer at least in the indentations of the mesa. SEOUL VIOSYS relies on STEM image 10b on page 22 of the TESCAN report to show that claim 2 is reproduced by PKB (Exhibit No. 12 SEOUL VIOSYS).

81. Claim 6 reads as follows in English, the language of the patent: *'The UV light-emitting device (300, 300a, 400, 500) of claim 1, wherein the openings in the passivation layer (360, 460, 560) exposing the first contact electrode (341, 441, 541) are separated from the mesa and the openings of the passivation layer (360, 460, 560) exposing the second contact electrode (342, 442, 542) are disposed within an upper region of the mesa*". The French translation is as follows

: *"Ultraviolet light-emitting device (300, 300a, 400, 500) according to claim 1, wherein the openings in the passivation layer (360, 460, 560) exposing the first contact electrode (341, 441, 541) are separated from the mesa and the openings in the passivation layer (360, 460, 560) exposing the second contact electrode (342, 442, 542) are arranged in an upper region of the* mesa" covers the separation of the openings exposing the first contact electrode and the mesa. The applicant relies on the optical images on pp. 8, 15–16 of the TESCAN report (Exhibit 12) and on the 3D image in its Exhibit 22 to show that this claim is reproduced by PKB.

82. Claim 7 reads as follows in English, the language of the patent: 'The UV light emitting device (300, 300a, 400, 500) of claim 1, wherein the first contact electrode (321, 421, 521) surrounds the mesa'. The French translation is as follows: *"Ultraviolet light-emitting device (300, 300a, 400, 500) according to claim 1, wherein the first contact electrode (321, 421, 521) surrounds the* mesa" protects the fact that the first contact electrode surrounds the mesa. The applicant relies on the optical images on p. 8 of the TESCAN report and the 3D image in his Exhibit 22 to show that this claim is reproduced by PKB.

83. Claim 9 reads as follows in English, the language of the patent: 'The UV light-emitting device (300, 300a, 400, 500) of claim 1, wherein the substrate (310, 410, 510) is one of a silicon (Si) substrate, a zinc oxide (ZnO) substrate, a gallium nitride (GaN) substrate, a silicon carbide (SiC) substrate, an aluminium nitride (AlN) substrate, and a sapphire substrate". The French translation is as follows: *'Ultraviolet light-emitting device (300, 300a, 400, 500) according to claim 1, wherein the substrate (310, 410, 510) is one of a silicon (Si) substrate, a zinc oxide (ZnO) substrate, a gallium nitride (GaN) substrate, a silicon carbide (SiC) substrate, an aluminium nitride (AlN) substrate and a sapphire substrate*
» protects the substrate material, which, according to the TESCAN report, is most likely sapphire (see page 27 of the TESCAN report). SEOUL VYOSIS argues that this demonstrates that this claim is embodied by the PKB chip.

84. Claim 10 reads in English, the language of the patent: "The UV light emitting device (300, 300a, 400, 500) of claim 1, wherein the mesa has a mirror symmetry structure". The French translation is as follows: *'Ultraviolet light emitting device (300, 300a, 400, 500) according to claim 1, wherein the mesa has a mirror-symmetric structure*
' protects the symmetrical structure of the mesa. The applicant contends that the optical images on pages 8 and 14 of the TESCAN report demonstrate that this claim is embodied by the PKB chip.

85. Claim 11 reads as follows in English, the language of the patent: 'The UV light emitting device (300, 300a, 400, 500) of claim 1, wherein the mesa has a main branch and a plurality of sub-branches extending from the main branch'. The French translation is as follows: *"Dispositif d'émission de lumière ultraviolette (300, 300a, 400, 500) according to claim 1, wherein the mesa has a main branch and a plurality of sub-branches extending from the main* branch" protects the shape of the mesa, which has a main branch and a plurality of sub-branches extending from that main branch. The applicant relies on the tests described on page 8 of the TESCAN report to demonstrate that this claim is embodied by the PKB chip.

86. Claim 12 reads as follows in English, the language of the patent: 'The UV light-emitting device (300, 300a, 400, 500) of claim 1, wherein a portion of the first bump electrode (351, 451, 551)

is disposed on the mesa to overlap the mesa, the first bump electrode (351, 451, 551) being spaced apart from the mesa by the passivation layer (360, 460, 560)". The French translation is as follows: *'Ultraviolet light-emitting device (300, 300a, 400, 500) according to claim 1, wherein a portion of the first bump electrode (351, 451, 551) is disposed on the mesa to overlap the mesa, the first bump electrode (351, 451, 551) being spaced from the mesa by the passivation layer (360, 460, 560)*". This claim covers the overlapping of the mesa by a portion of the first bump electrode. The applicant relies on Figure 2 on page 14 of the TESCAN report and the fact that this first bump electrode is separated from the mesa by the passivation layer (see Figure 8 on page 19 and Figure 14 on page 25 of the TESCAN report) to demonstrate that this claim is embodied by the PKB chip.

87. Claim 13 reads as follows in English, the language of the patent: 'The UV light emitting device (300, 300a, 400, 500) of claim 1, wherein the openings of the passivation layer (360, 460, 560) disposed on the first contact electrode (341, 441, 541) are partially placed in the indentations'. The French translation is as follows: *"Ultraviolet light-emitting device (300, 300a, 400, 500) according to claim 1, wherein the openings of the passivation layer (360, 460, 560) disposed on the first contact electrode (341, 441, 541) are partially placed in the indentations*". This claim requires that the openings in the chip be 'partially' located within the indentations. The applicant relies on Figure 2 on page 14, Figures 11a and 11b on page 24, and Figures 13 to 16 on pages 25 and 26 of the TESCAN report to demonstrate that this claim is embodied by the PKB chip.

88. Claim 18 reads as follows in English, the language of the patent: 'The UV light emitting device (300, 300a, 400, 500) of claim 1, emitting deep UV light having a wavelength of 360 nm or less'. The French translation is as follows: *"Ultraviolet light emitting device (300, 300a, 400, 500) according to claim 1, emitting deep ultraviolet light having a wavelength of 360 nm or less*". SEOUL VIOSYS argues that the product sheet available on the LASER COMPONENTS website specifies that the PKB-H02-F35 chip emits ultraviolet light with a maximum wavelength between 250 and 260 nm (Exhibit 6 of SEOUL VIOSYS), and maintains that these elements demonstrate that the PKB chip infringes this claim.

89. It follows that SEOUL VIOSYS has specifically set out, on pages 60 to 70 of its statement of claim, how the TESCAN tests demonstrate the reproduction of the opposing dependent claims.

90. In challenging the reproduction of these dependent claims, LASER COMPONENTS argues on page 13 of its defence that: 'Because all the dependent claims refer to claim 1 and because the product does not possess several of the features of claim 1, as mentioned above, it cannot possess all the features of any of the dependent claims and therefore does not fall within the scope of protection of any of the dependent claims'.

91. However, these objections relating to claim 1 were not upheld by the Court and, as the defendants did not put forward any other specific arguments to challenge the reproduction of the dependent claims, the Court considers that the evidence presented by

SEOUL VIOSYS are sufficient to establish the alleged infringement in respect of the opposed dependent claims.

Regarding the PKC and PKD chips

92. SEOUL VIOSYS relies on internal analyses carried out by SSC showing optical microscope images of the PKC and PKD chips (Exhibit 10 of SEOUL VIOSYS) and maintains that the evidence produced for PKB also applies to the other two types of chips alleged to be infringing, namely PKC and PKD. LASER COMPONENTS replies (page 13 of its defence) that SEOUL VIOSYS's allegation is unfounded and that, in any event, it disputes the reproduction of features 1.4, 1.5 and 1.14.

93. The Court notes that the optical images submitted by the claimant, derived from its internal analyses, show that these chips have the same appearance as PKB chips, in particular the opening for the electrode, which is located in an indentation in the mesa. However, neither LASER COMPONENTS, the defendant, nor even PHOTON WAVE, the manufacturer, which called its designer, [redacted] , to testify, have provided sufficiently precise arguments to support the claim that these PKC and PKD chips possess characteristics that would distinguish them from the PKB chips. Furthermore, the arguments put forward in defence to contest the infringement by PKB have all proved ineffective.

94. Consequently, the infringing nature of the PKC and PKD chips has been sufficiently demonstrated by SEOUL VIOSYS.

On the role of LASER COMPONENTS in the acts of infringement

95. Article 25 of the AJUB provides that*: 'A patent confers on its proprietor the right to prevent, without his consent, any third party from:*

a) from manufacturing, offering, placing on the market or using a product covered by the patent, or from importing or holding such a product for those purposes;

b) from using the process covered by the patent or, where the third party knows or ought to have known that the use of the process is prohibited without the consent of the patent holder, from offering to use it within the territory of the Contracting Member States in which the patent is in force;

c) offering, placing on the market, using, or importing or holding for such purposes a product obtained directly by a process covered by the patent.

96. SEOUL VIOSYS alleges that LASER COMPONENTS has committed acts of direct infringement by importing, offering for sale, placing on the market and holding infringing chips (page 72 of the statement of claim). Although its application for an injunction also relates to manufacturing (page 3 of the statement of claim), the claimant does not provide any evidence in its statement of grounds to support this. No acts of manufacturing will therefore be upheld against LASER COMPONENTS.

97. Regarding the acts of importing the chips sold in France, it is not disputed that the chips covered by the online purchase report are manufactured by PHOTON WAVE, a company based in South Korea, for import into France (Exhibits 6 and 7 of SEOUL VIOSYS).

98. SEOUL VIOSYS argues that the website is accessible in French, among other languages, and offers delivery of the products to several countries, including France and Germany (paragraph 168 of the statement of claim).

99. LASER COMPONENTS argues that it was not made aware of the patent and that, given the technical complexity involved, it was not expected to assess the intrinsic structure of the chips; only experts are capable of doing so. It claims that, as a retailer and wholesaler of various optical and laser products, it cannot be expected to know the structure of these chips, particularly as it has not received any warning letter from the proprietor of the patent in question.

100. However, he is accused of acts of direct infringement as defined by Article 25 of the AJUB; yet this provision does not require the claimant to prove that the defendant was previously made aware of the existence of the patent and the substance of the alleged infringement. It is therefore sufficient for the claimant to prove that the defendant is an economic operator who manufactures, places on the market or uses products protected by a patent, or imports or stocks them for one of these purposes, without the patent holder's authorisation, in order to be classified as an infringer.

101. LASER COMPONENTS is a professional distributor that is also part of a pan-European distribution group. It is therefore ineffective for LASER COMPONENTS to argue that it was not made aware of the patent asserted against it in order to contest its liability for the acts of direct infringement of which it is accused.

102. Consequently, it has been established that LASER COMPONENTS is guilty of acts of infringement in that it imports, offers, places on the market and possesses the PKB, PKC and PKD chips.

<u>On the territorial scope of the acts of infringement alleged against LASER COMPONENTS</u>

103. SEOUL VIOSYS asserts that the defendants have not contested the measures sought and that it would therefore be entitled to seek measures not only within France but also in Germany, the Netherlands and the United Kingdom.

104. Whilst it is true that the defence has not contested any of the measures sought, with the exception of the claim for provisional damages, it is nevertheless incumbent upon SEOUL VIOSYS, as the claimant, to adduce specific and demonstrable facts in support of its claims on the basis of the JUB Rules of Procedure, Rule R. 13m of the Rules of Procedure ('the claimant bears the burden of proving the alleged acts of infringement') and Rule R. 171.1 of the Rules of Procedure ('proof of facts liable to be contested').

105. In the present case, SEOUL VIOSYS relies on the reports of the judicial officer concerning purchases made via the website Lasercomponents.com, through which it is allegedly possible to order the infringing chips throughout Europe.

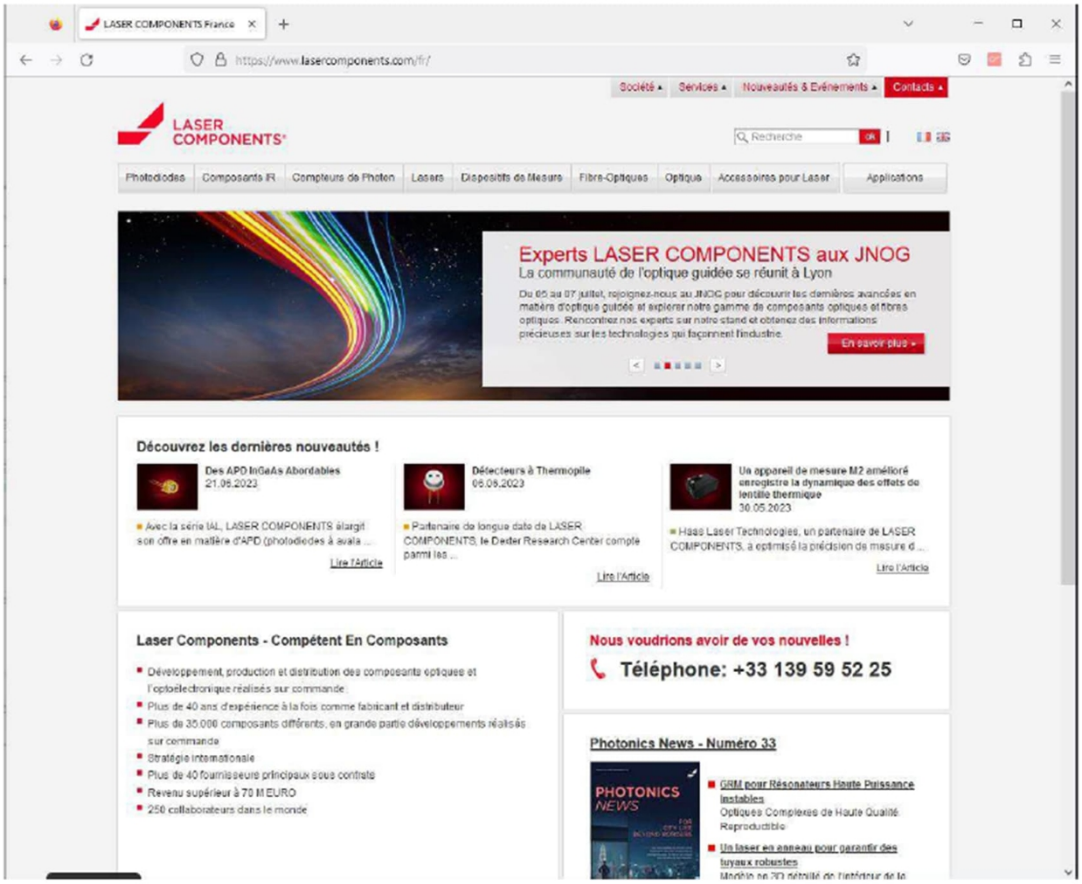
106. However, SEOUL VIOSYS made only one purchase delivered to France, and the Court notes, in view of the extracts from the website produced by the claimant, that the said website indicates a division of sales areas and observes that the purchase delivered to France was made via the address

'https://www.lasercomponents.com/fr/', which demonstrates that LASER COMPONENTS sells only in France.

107. Although LASER COMPONENTS is a European group, SEOUL VIOSYS has chosen to bring proceedings only against the French entity LASER COMPONENTS, and the latter cannot be held solely liable for the actions of the entire group. The claimant has not provided any specific evidence regarding LASER COMPONENTS' sales in Germany, the Netherlands and the United Kingdom, whereas the extracts from the website submitted clearly indicate a division of sales by distributor within the LASER COMPONENTS group.

Extract from the LASER COMPONENTS website produced by the claimant in Exhibit 6 (pages 15 to 18 and 24):

14:39:49 – I arrive at the page: https://www.lasercomponents.com/fr/

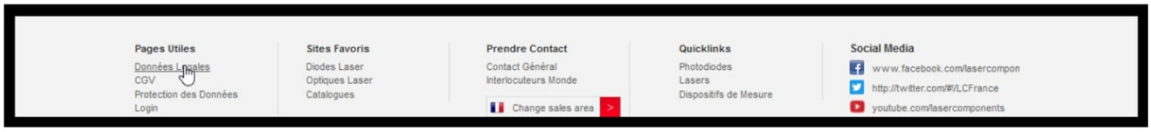


14:41:10 – Je capture la page visible à l'écran.

L'URL de la page est :

https://www.lasercomponents.com/fr/

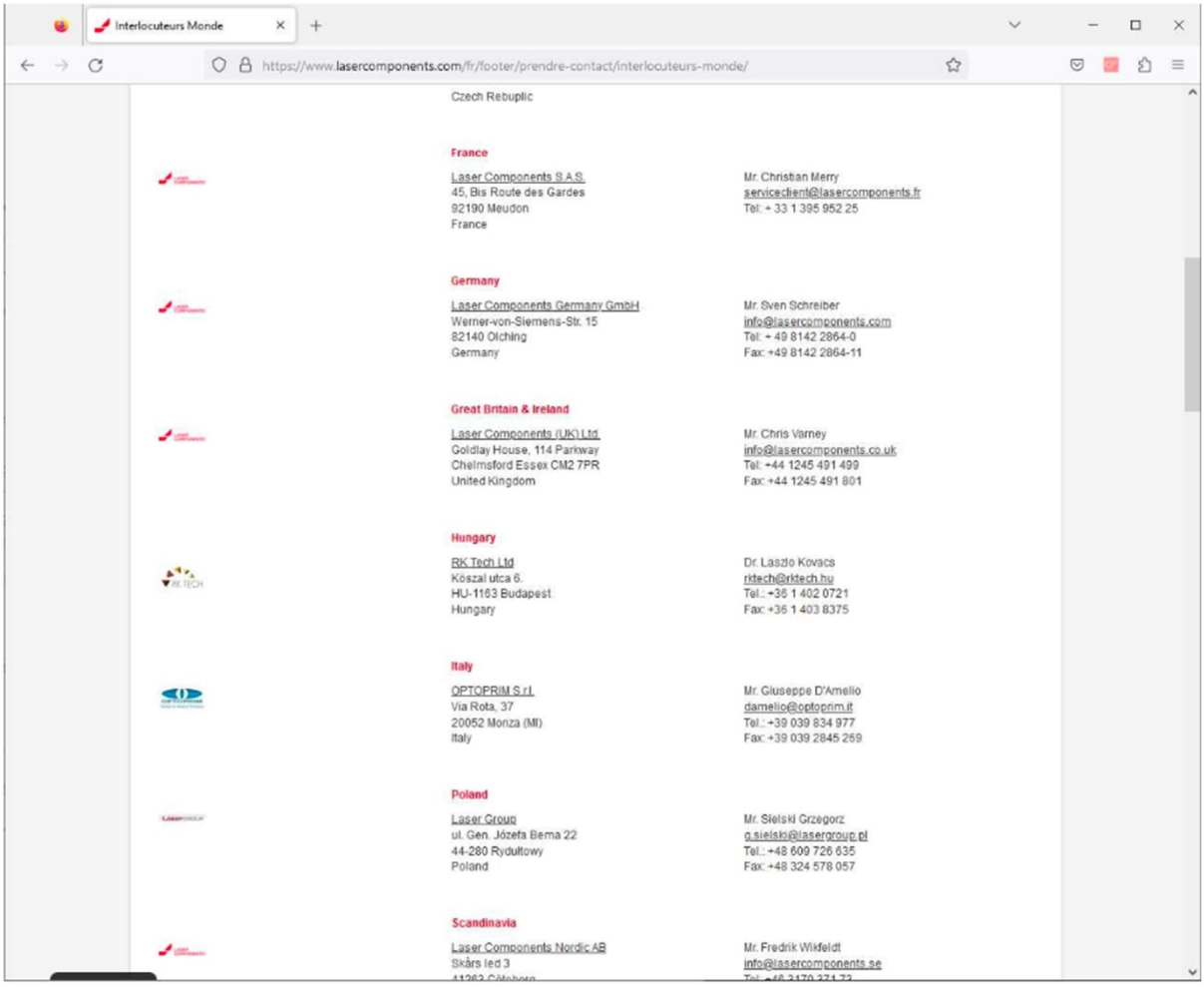
14:41:28 – Je clique sur le lien « Données Legales », comme le montre la capture ci-dessous.



LASER COMPONENTS S.A.S.
Société de distribution de lasers et de composants électroniques
45 Bis Route des Gardes
France 92190 Meudon

Téléphone: +33 (0) 139 595 225
Fax: +33 (0) 139 595 350

E-mail: serviceclient@lasercomponents.fr
Site Web: https://www.lasercomponents.fr



108. SEOUL VIOSYS has not provided any evidence to suggest that the defendant sells the infringing chips in other contracting states to the AJUB where the patent in question is in force, such as in Germany or the Netherlands.

109. With regard to the United Kingdom, whilst a claim concerning acts of infringement committed within the territory of a non-EU Member State in which the patent in question is in force may be declared admissible before the UPC (CJEU, Case C-339/22, 25 February 2025, BSH Hausgeräte GmbH v Electrolux AB), the claimant must still provide specific facts regarding the existence of such acts of infringement committed by the defendant, which is not the case here.

110. In view of these factors, the injunction and the other remedial measures sought will therefore be limited, in this case, to French territory alone.

On the injunction and corrective measures sought under Articles 63 and 64 of the AJUB

The permanent injunction

111. Article 68 of the AJUB provides that: *'1. Where a decision finding patent infringement is made, the Court may issue an injunction against the infringer to prohibit the continuation of the infringement. The Court may also issue such an injunction against an intermediary whose services are used by a third party to infringe a patent.*

2. Where applicable, failure to comply with the injunction referred to in paragraph 1 shall be punishable by a penalty payment payable to the Court".

112. SEOUL VIOSYS seeks a permanent injunction within the territories of France, Germany and the Netherlands, subject to a penalty payment of 1,000 euros per established infringement (pages 3 to 5 of its statement of claim).

113. For the reasons explained *above* (paragraphs 93 to 100 of this decision), the measures will be limited to French territory.

114. The Court considers the application for an injunction under Article 63 of the AJUB to be justified and will grant it in accordance with the terms set out in the operative part of this decision. For reasons of effectiveness, this permanent injunction will be accompanied by a penalty payment to be paid to the Court as provided for in Article 63.2 of the AJUB; however, the amount shall be limited in accordance with the principle of proportionality, having regard to the price of the chips in question (the unit price of which is between €2.60 and €4.70, as shown in the invoices in Exhibit 7 from SEOUL VIOSYS), and the penalty payment shall be set at €50 per infringing product.

Other remedial measures

115. Article 64 of the AJUB provides that: *'1. Without prejudice to any damages due to the injured party as a result of the infringement, and without compensation of any kind, the Court may order, at the request of the applicant, that appropriate measures be taken in respect of products which it has found to infringe a patent and, where appropriate, in respect of the materials and instruments primarily used in the creation or manufacture of such products.*

2. Such measures shall include:

a) a declaration of infringement;

b) the recall of the products from the channels of trade;

c) the removal of the infringing features from the products;

d) the permanent removal of the products from the channels of commerce; or

e) the destruction of the products and/or the relevant equipment and instruments.

3. The Court shall order that these measures be implemented at the infringer's expense, unless specific reasons to the contrary are invoked.

4. When considering an application for remedial measures under this Article, the Court shall take into account the need for proportionality between the seriousness of the infringement and the remedial measures to be ordered, the infringer's willingness to restore the materials to a non-infringing state, and the interests of third parties.

116. Requests for measures to recall products from the market, remove them from circulation and/or destroy the counterfeit products, as set out in the operative part of this decision, shall also be granted. These measures must be carried out in the presence of a judicial officer ('Baillif' in France).

117. These measures must be carried out by LASER COMPONENTS, subject to a penalty payment of 50 euros per counterfeit product and in accordance with the terms set out in the operative part of this decision**.**

On the disclosure of information pursuant to Article 67 AJUB

118. Article 67 AJUB provides that: *"1. The Court may, in response to a justified and proportionate request from the applicant and in accordance with the Rules of Procedure, order an infringer to inform the applicant regarding:*

a) the origin and distribution channels of the disputed products or processes;

b) the quantities produced, manufactured, delivered, received or ordered, as well as the price obtained for the products in question; and

c) the identity of any third party involved in the production or distribution of the disputed products or in the use of the disputed process.

2. The Court may also, in accordance with the Rules of Procedure, order any third party :

a) who has been found to be in possession of infringing products on a commercial scale or to be using an infringing process on a commercial scale;

b) who has been found to be providing services used for the purposes of infringing activities on a commercial scale; or

c) designated by the person referred to in point (a) or (b) as having participated in the production, manufacture or distribution of the infringing goods or processes or in the provision of the services;

to provide the applicant with the information referred to in paragraph 1'.

119. With regard to counterfeit products, and for the period following the date on which SEOUL VIOSYS brought the matter before this court and the preceding period not covered by the limitation period, the requests for the disclosure of information relating to:

- The origin and distribution channels of the LED chips identified by the reference numbers PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35, as well as all other counterfeit products covered by the permanent injunction;
- The quantities offered, placed on the market, imported and held by the defendant, as well as the turnover and profit margin realised by Laser Components as a result of the sale of the LED chips identified by the reference numbers PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35, as well as all other infringing products covered by the permanent injunction, within French territory,
- The names and addresses of the manufacturers, wholesalers, importers and other previous holders of the LED chips identified by the reference numbers PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35, as well as of all other infringing products covered by the permanent injunction.

120. This information must be provided by LASER COMPONENTS to SEOUL VIOSYS within one month of notification of this decision, subject to a penalty of €1,000 per day of delay.

<u>On the applications for provisional relief (damages and costs)</u>

Damages, pursuant to Article 68 of the AJUB

121. Article 68 of the AJUB provides that: '*1. The Court, at the request of the injured party, shall order the infringer who has engaged in patent infringement knowingly or having reasonable grounds to know of it, to pay the injured party damages corresponding to the loss actually suffered by that party as a result of the infringement.*

2. The injured party shall, as far as possible, be restored to the position they would have been in had no infringement taken place. The infringer shall not benefit from the infringement. However, damages shall not be punitive.

3. When the court determines the damages:

a) it shall take into account all relevant factors, such as the negative economic consequences, including loss of profit, suffered by the injured party, any profits unjustly made by the infringer and, in appropriate cases, factors other than economic factors, such as the non-economic harm caused to the injured party as a result of the infringement; or

b) instead of the solution provided for in point (a), it may, in appropriate cases, decide to award a lump-sum amount of damages based on factors such as, at least, the amount of royalties or fees that would have been due had the infringer sought authorisation to use the patent in question.

4. Where the infringer has not engaged in the infringing activity knowingly or with reasonable grounds to know of it, the Court may order the recovery of profits or the payment of damages.

122. SEOUL VIOSYS requests the Court to hold LASER COMPONENTS liable for all damages resulting from the patent infringement and to order Laser Components to pay the sum of €150,000 as an advance on damages, as well as
€50,000 in respect of non-pecuniary damage. The defendants contested these amounts during the discussion on the value of the claim at the pre-trial conference (see Order No. ORD_598577/2023 of 17 February 2025), arguing in particular that the chips in question were of minimal value and that LASER COMPONENTS had ceased such sales, though without providing any justification for this.

123. The Court finds LASER COMPONENTS liable for the acts of infringement as set out in this judgment (§62 and §70); however, as the claimant has not submitted any evidence to the court to justify the amount of the interim payments sought, the Court will therefore not grant the claims for interim payments in this respect.

Costs under Article 69 of the AJUB

124. Article 69 of the AJUB provides that: *'1. Reasonable and proportionate legal costs and other expenses incurred by the successful party shall, as a general rule, be borne by the unsuccessful party, unless equity precludes this, subject to a ceiling set in accordance with the Rules of Procedure.*

2. Where a party is only partially successful or in exceptional circumstances, the Court may order that the costs be apportioned equitably or that the parties bear their own costs.

3. Each party shall bear the unnecessary costs it has caused the Court or the other party to incur.

4. At the request of the defendant, the Court may order the claimant to provide appropriate security for the legal costs and other expenses incurred by the defendant which may be recoverable from the claimant, in particular in the cases referred to in Articles 59 to 62.

125. SEOUL VIOSYS is seeking provisional payment of its legal costs, which it estimates at €100,000 (statement of claim, page 78)

126. As regards the determination of the amount of costs, as indicated in the pre-trial conference order, both parties have requested separate proceedings.

127. In accordance with Rule 118.5 of the Rules of Procedure, the Court decides in principle that, as LASER COMPONENTS has been unsuccessful in the infringement claim, it shall be liable for all costs of the proceedings pursuant to Article 69 of the AJUB.

128. In view of the receipt for the documents evidencing payment of the costs of the proceedings, the invoice from the TESCAN laboratory, and the accounting certificate from Linklaters (supplementary statement of 12 July 2024, exhibits 23 to 25), it is justified for LASER COMPONENTS to pay an advance of €50,000 at this stage of the proceedings.

129. The Court notes that this decision is, in principle, immediately enforceable (Rule 354 of the Rules of Procedure).

FOR THESE REASONS,

The Court orders:

I) On infringement and the permanent injunction

1) Finds that LASER COMPONENTS has committed acts of infringement of claims 1, 2, 6, 7, 9, 10, 11 to 13 and 18 of patent EP 3 404 726, in that it imports, offers, places on the market and holds the LED chips PKB-H02-F35, PKC-H02-F35 and PKD-H02-F35 chips within French territory, and dismisses the claims relating to the territories of Germany, the Netherlands and the United Kingdom,

2) LASER COMPONENTS is prohibited from offering, placing on the market, importing and holding for the purpose of placing on the market within France, LED chips having the characteristics described as follows:

'Ultraviolet light-emitting device (300, 300a, 400, 500) comprising: a substrate (310,

410, 510)

a semiconductor layer of a first conductivity type (321, 421, 521) disposed on the substrate (310, 410, 510);

a mesa disposed on the semiconductor layer of the first conductivity type (321, 421, 521), and comprising a semiconductor layer of a second conductivity type
(323) and an active layer (322) interposed between the semiconductor layer of the first conductivity type (321, 421, 521) and the semiconductor layer of the second conductivity type (323);

a first contact electrode (341, 441, 541) in contact with the semiconductor layer of the first conductivity type (321, 421, 521) exposed around the mesa;

a second contact electrode (342, 442, 542) disposed on the mesa and in contact with the semiconductor layer of the second conductivity type (323);

a passivation layer (360, 460, 560) covering the first contact electrode (341, 441, 541), the mesa and the second contact electrode (342, 442, 542), and comprising

openings disposed over the first contact electrode (341, 441, 541) and the second contact electrode (342, 442, 542); and

a first bump electrode (351, 451, 551) and a second bump electrode (352, 452, 552) electrically connected to the first contact electrode (341, 441, 541) and to the second contact electrode (342, 442, 542) through the openings in the passivation layer (360, 460, 560), respectively,

wherein the mesa has a plurality of indentations as viewed in plan view

and each of the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) covers the openings in the passivation layer (360, 460, 560),

and wherein each of the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) covers a portion of the passivation layer (360, 460, 560),

the ultraviolet light-emitting device (300, 300a, 400, 500) further comprising
: a first pad electrode (331, 431, 531) disposed on the first contact electrode (341, 441, 541),

a second pad electrode (332, 432, 532) disposed on the second contact electrode (342, 442, 542),

and wherein the openings in the passivation layer (360, 460, 560) expose the first pad electrode (331, 431, 531) and the second pad electrode (332, 432, 532)

and the first bump electrode (351, 451, 551) and the second bump electrode (352, 452, 552) are connected to the first pad electrode (331, 431, 531) and to the second pad electrode (332, 432, 532) through the openings, respectively,

and characterised in that

the openings in the passivation layer (360, 460, 560) exposing the first pad electrode (331, 431, 531) comprise openings arranged in the indentations.

II) On remedial measures (Article 64 AJUB)

1) Orders LASER COMPONENTS to withdraw from the market the infringing products which it has placed on the market in France, as specified in I.2) of this order,

2) Orders LASER COMPONENTS to remove from circulation or destroy the stock of infringing products held by it, as specified in I.2) of this order, under the supervision of a judicial officer,

3) Accompanies the corrective measures set out above with a penalty payment of up to 50 euros per product, commencing 60 days after notification of this decision,

III) Regarding measures for the disclosure of information

Orders LASER COMPONENTS to provide SEOUL VIOSYS, within 30 days of notification of this decision, with the information necessary to calculate the damages for the loss suffered by SEOUL VIOSYS as a result of the acts committed by LASER COMPONENTS described in I.1), as follows:

1) The origin and distribution channels of the infringing LED chips as defined in I.2) of the operative part of this decision,

2) The quantities offered, placed on the market, imported and held by LASER COMPONENTS, as well as the turnover generated by their sale, during the period not covered by the limitation period (5, relating to the types of counterfeit LED chips as defined in I.2) of the operative part of this decision,

3) The names and addresses of the manufacturers, wholesalers, importers and other previous holders of the counterfeit LED chips as defined in I.2) of the operative part of this decision,

IV) Regarding costs and claims for payment of provisions

1) LASER COMPONENTS shall bear all the costs of these proceedings, as determined in separate proceedings at the request of the parties,

2) Declares LASER COMPONENTS liable for the acts of infringement as described in I.1) but, at this stage of the proceedings, rejects the claims for provisional damages under Article 68 of the AJUB,

3) Orders LASER COMPONENTS to pay SEOUL VIOSYS an advance of 50,000 euros towards costs as provided for in Article 69.1 AJUB,

Holds that this decision is subject to appeal in accordance with Rule 220.1(a) RdP.

Delivered in Paris, 24 April 2025.

Camille Lignières, President and Reporting Judge

Camille Lignières Date: 24 April 2025 09:43:16 +02:00

Carine **Gillet**, Qualified Judge

Carine Gillet 23 April 2025 20:10:51 +02'00'

Peter Tochtermann, Legally Qualified Judge

Peter Michael Dr. Tochtermann

Digitally signed by Peter Michael Dr. Tochtermann
Date: 23 April 2025 20:03:50 +02:00

Anthony Soledade, Technically Qualified Judge

Anthony Soledade

Signature
Anthony Soledade's digital signature
Date: 23 April 2025 18:17:27 +02:00

Charlotte Ferhat, Registrar

CHARLOTTE CAMILLE CLAIRE FERHAT

Digital signature of CHARLOTTE CAMILLE CLAIRE FERHAT
Date: 24 April 2025 09:28:01 +02:00

DETAILS OF THE ORDER

Order No. ORD_598601/2023 in CASE No.: ACT_588685/2023 UPC No.: UPC_CFI_440/2023
Type of action: Infringement action