



Mannheim local division

UPC_CFI_735/2024
(CCFR: UPC_CFI_224/2025)

Decision
of the Court of First Instance of the Unified Patent Court
issued on 24 February 2026
concerning EP 2 951 625

Claimant

TRUMPF Laser UK Limited
Wellington Park, Tollbar Way Hedge End, SO302QU, Southampton,
GB

represented by Matthias
SUNDAY

DEFENDANT

IPG Laser GmbH & Co. KG
Carl-Benz-Straße 28, 57299, Burbach, DE

represented by Frank PETERREINS

PATENT AT ISSUE:

European Patent No. EP 2 951 625

PANEL:

Local Division Mannheim

PARTICIPATING JUDGES:

This decision was issued by Presiding Judge Tochtermann, legally qualified judge and judge-rapporteur Sender, legally qualified judge Kupecz and technically qualified judge Wilhelm.

LANGUAGE OF THE PROCEEDINGS: German

SUBJECT MATTER: Counterclaim for infringement and revocation

ORAL HEARING: 27 January 2026

BRIEF DESCRIPTION OF THE FACTS:

1. The claimant is suing the defendant for direct infringement of a patent, or alternatively for direct equivalent infringement.
2. The Claimant is the sole registered owner of European Patent EP 2 951 625 (patent in suit, submitted as Exhibit K5), which was filed internationally on 27 January 2014, claiming a British priority of 31 January 2013 (GB 1301745.4, submitted as Exhibit PS1a) (WO 2014/118156, application documents submitted as Exhibit PS1b) and relates to an optical device for focusing laser light. The notice of grant of the patent in suit was published on 4 April 2018.
3. The respective national parts of the patent in suit are in force in, among others, the UPC Agreement member states covered by the action, namely Austria (AT), Finland (FI), France (FR), Germany (DE), Italy (IT), the Netherlands (NL) and Romania (RO) (see register extracts in Annex K2; hereinafter: Contracting States) For these Contracting States, the Claimant asserts claims for injunctive relief and – for acts committed on or after 4 April 2018 – recall, removal, destruction, information and accounting, determination of liability for damages and provisional damages.
4. Patent claim 6, on which the present infringement action is based, reads as follows in the language of the proceedings:

Optical apparatus, comprising an optical combiner (25), comprising a bundle of input fibres (11g, 11a-11f), spliced to an output fibre (6, 17, 26), said output fibre comprising a first region (8) with refractive index n_0 and diameter equal to or greater than the input fibre bundle diameter and one or more secondary regions (7, 18) within the first region, the secondary regions each having a refractive index that differs from n_0 , characterised by each of the secondary regions not overlying all of the input fibres wherein the secondary region comprises at least one annular high-index region (18), the input fibre bundle comprising an inner fibre (11g) and at least one radially outer set of input fibres.

(11a-11f) and wherein said annular region (18) overlies said radially outer set of input fibres but does not overlie said inner fibre, and by a plurality of lasers (laser 1, laser 2), each laser arranged to provide a laser output to a respective input fibre, wherein the laser outputs of the lasers are independently controllable to select or adjust the beam profile of a laser beam output from the output fibre (6, 17, 26).

5. The Claimant is part of the TRUMPF Group and develops and manufactures fibre lasers for marking, welding and cutting various materials. Until 20 November 2020, the Claimant operated under the name *SPI Lasers UK Limited* (see Annex K1a [extract from the commercial register]).
6. The defendant is a company belonging to the IPG Photonics group of companies. It develops, manufactures and distributes fibre lasers for welding various materials, among other things. The defendant was formed on 31 July 2023 through the conversion of its legal predecessor, *IPG Laser GmbH*, into a limited partnership by way of a change of legal form (see the extracts from the commercial register submitted as Annexes K3a/K3b). It is the European headquarters of the IPG Photonics Group and, among other things, operates the website *www.ipgphotonics.com*, through which it advertises and distributes lasers throughout Europe, including in Germany and the other contracting states.
7. [...]
8. [...]
9. [...]
10. [...]
11. [...]
12. [...]
13. [...]
14. With the present action, the claimant objects to the distribution by the defendant of fibre lasers of the "YLS-AMB" series, in which an inner fibre of the input fibre bundle conducts light from a connected laser source and, in addition,

at least one outer fibre of the input fibre bundle guides light from another connected laser source (contested embodiment[s]). These are also referred to by the defendant as "dual-beam lasers". The abbreviation "YLS" refers to the laser type (*Ytterbium Laser System*); the letters "AMB" stand for "*Adjustable Mode Beam*". The contested embodiments can be used for welding various materials.

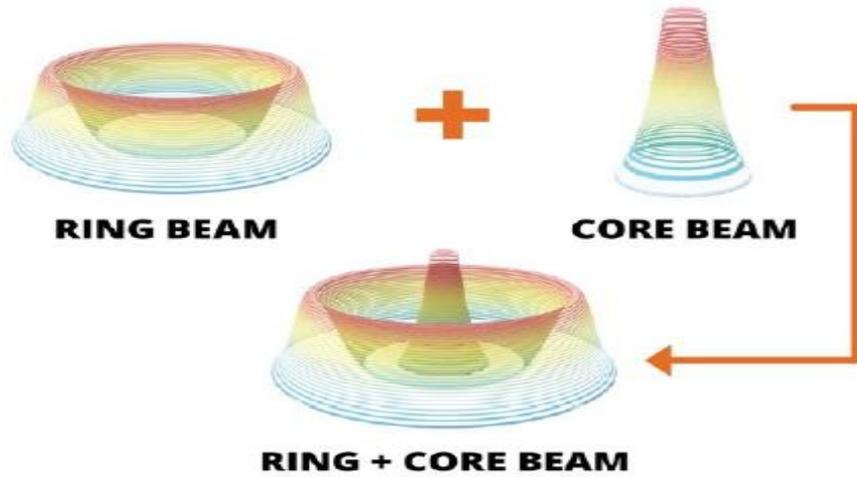
15. The defendant manufactures the contested embodiment and offers it in German, French, Dutch and Italian in Germany, Finland, France, Italy, the Netherlands, Austria and Romania, among other places, via the website www.ipgphotonics.com. The scope of delivery includes the "*LaserNet*" software required to operate the contested embodiment.
16. The defendant describes this "dual-beam laser" on the website www.ipgphotonics.com as follows (see Annex K7):

Zweistrahl-Technologie

Beim herkömmlichen Laserschweißen wird ein einzelner gebündelter Strahl verwendet, um das Schweißbad zu bilden. Bei der Zweistrahltechnologie kommt ein weiterer Ringstrahl hinzu, der den gebündelten Strahl umgibt und unterstützt.

AMB-Laser emittieren den zentralen Kernstrahl und den äußeren Ringstrahl gleichzeitig und unabhängig voneinander. Dies ermöglicht es den Anwendern, die Parameter jedes Strahls dynamisch zu steuern, um die Prozessergebnisse besser kontrollieren zu können.

17. The laser beam profiles that can be generated with the contested embodiments, namely a central *core beam*, an (outer) *ring beam* and a combination of these beam profiles, are illustrated by the defendant on its website www.ipgphotonics.com as follows (Exhibit K8):



18. The structure and mode of operation of the contested embodiments are also described and explained in more detail by the defendant in the operating instructions "High-power fibre laser series AMB-U", dated 18 December 2019 (excerpts submitted as Exhibit K10), as follows (Exhibit K10, p. 33 ff.):

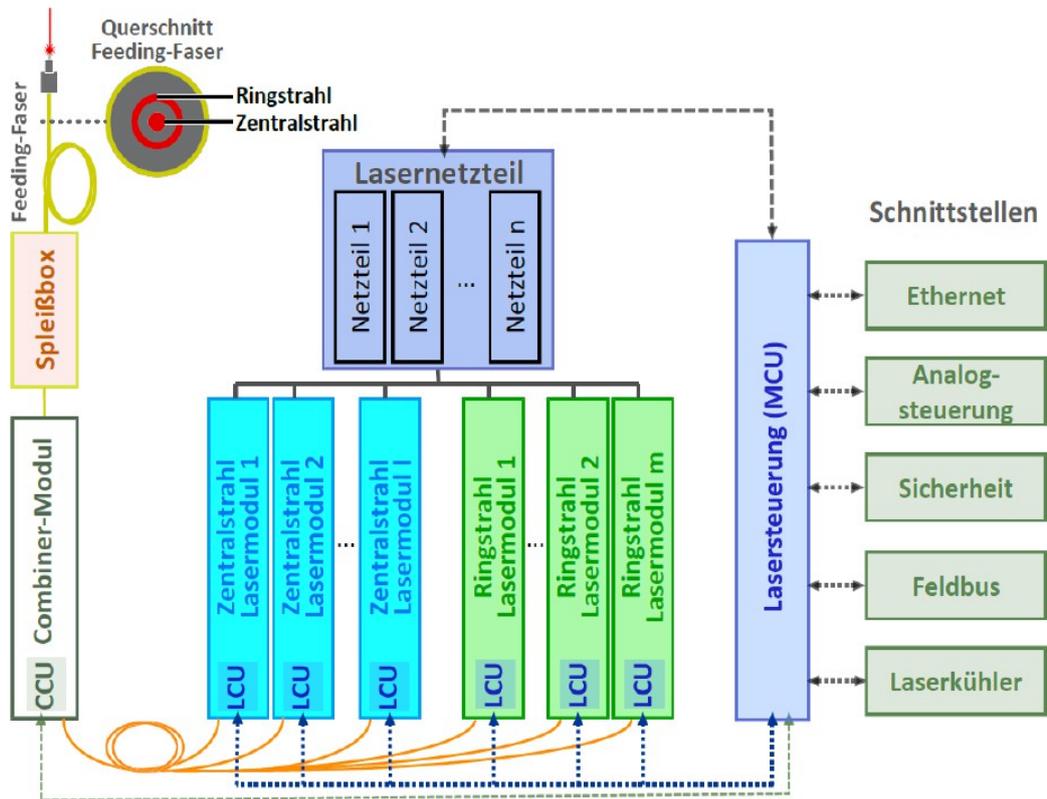
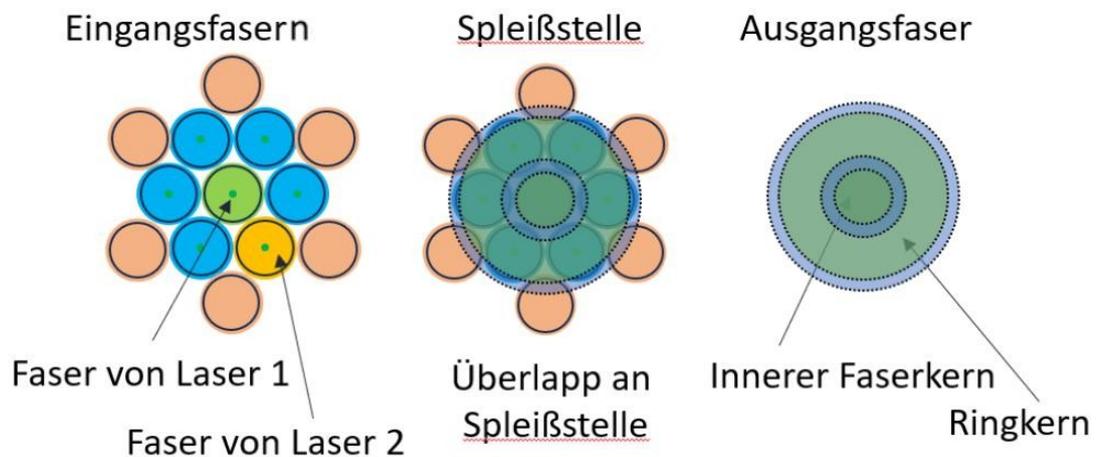


Abb. 4: Funktionsprinzip

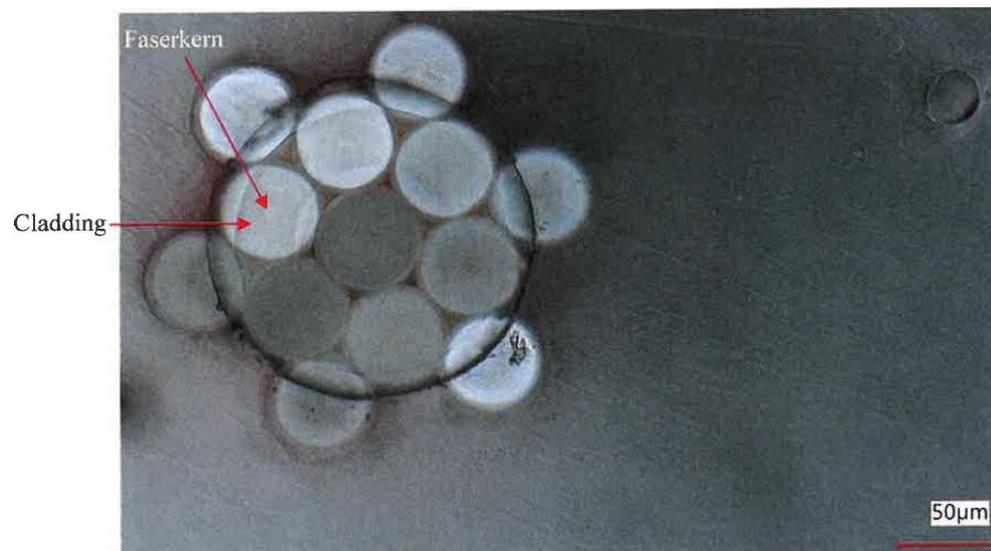
19. According to this, the laser radiation is generated in individual laser modules (light blue and light green in the above figure). Each laser module can be understood as an independent laser with its own control unit (Laser Control Unit, LCU)

embodiment comprises (at least) two or more laser modules. The laser radiation for the central *core beam* and the (outer) *ring beam* is generated in different laser modules, which can be switched independently of each other and varied in terms of their power.

20. The laser radiation generated in the laser modules is guided via optical fibres (orange in the figure above) to a so-called combiner module (*Combiner Control Unit, CCU*; bottom left in the figure above). In this combiner module, the optical fibres of the laser modules are combined into a fibre bundle. At a splice point in the combiner module, this fibre bundle is spliced to an optical fibre (output fibre) that has two light-conducting areas and, depending on the configuration, leads directly to the process optics of the laser.
21. The claimant also purchased a copy of the contested embodiment under the name "YLS-1500/1500-U-AMB" in Germany for €115,000 from a dealer who had previously purchased the device from the defendant (delivery note submitted as Annex K11) and had it examined by one of its employees and a technical report dated 27 November 2024 (see Annex K12) and a supplementary technical report dated 4 June 2025 (see Annex K14), to which reference is made for further details.
22. The Claimant schematically visualises the results it has determined in this regard with regard to the order of input fibres and output fibres (optical fibres) at the splice point in the combiner module of the contested embodiment as follows (see Annex K12, para. 11 et seq., Figure 4):



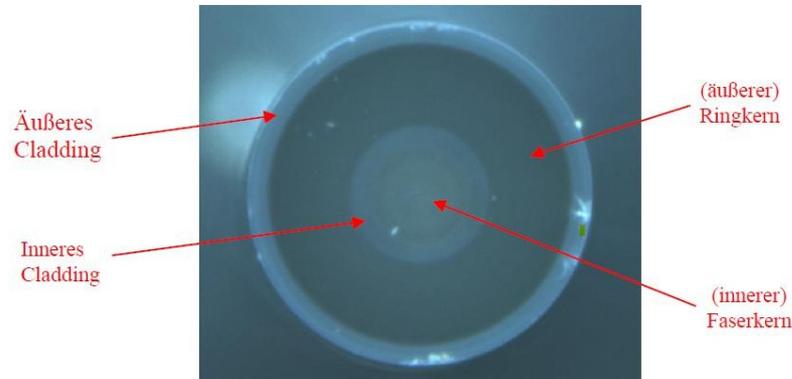
23. The input fibre bundle in the combiner module in the examined example of the contested embodiment comprises a centrally arranged fibre (marked in light green). Around this, six fibres are ordered as a radially outer (first) set (marked blue and orange), whereby in the examined contested embodiment only the fibre marked orange conducts light from a connected laser source. The second laser source supplies laser light to the light green marked central input fibre, while the remaining five (blue marked) fibres of the (first) outer set are not connected to laser sources in the examined example of the contested embodiment.
24. A further six fibres (marked brown in the above figure) are distributed radially further out around the first radially outer set of input fibres and are also not connected to a laser source. According to the Claimant's submission, these additional six fibres cannot be used in a technically meaningful way, whereas the defendant attributes [...] effects to them.
25. The central fibre of the input fibre bundle and the outer fibres surrounding it each have a laser light-conducting fibre core and a *cladding* layer surrounding the core, as can be seen in Figure 6 of Annex K12 below:



26. The respective fibre core of the input fibres of the examined specimen of the contested embodiment consists of germanium-doped quartz glass (fused silica–fs-Ge-doped) with a higher refractive index than undoped quartz glass. The respective fibre core is surrounded by a first *cladding* of undoped quartz glass (fs) with a

This is in turn surrounded by a thin ring of fluorine-doped quartz glass (fs-F-doped; known as *the outer cladding*) delimiting the input fibre, a material with an even lower refractive index than the first cladding area (see Annex K14, paras. 9 and 10).

27. The Claimant describes the output fibre (optical fibre) of the contested embodiment under examination in more detail as follows:



28. The output fibre comprises a centrally arranged inner fibre core. It is surrounded by an inner *cladding*. Radially outside the inner *cladding* is a ring-shaped core, which in turn is bounded by an outer *cladding*.

29. The outer *cladding* and the inner *cladding* of the output fibre consist of fluorine-doped quartz glass with a refractive index of approximately 1.43.

30. In contrast, the quartz glass of the ring core and the inner core of the output fibre has a refractive index of approximately 1.45 at the operating wavelength. The cladding areas of the output fibre thus have a lower refractive index than their two ring cores (Exhibit K12, paras. 23 and 24).

31. The output fibre is spliced to the input fibre bundle described above at a splice point in the combiner module. The defendant presents the dimensions at the splice point of the contested embodiments as follows (see statement of defence dated 13 March 2025, page 34, marginal number 102; page 36, marginal number 108) [...].

32. The defendant contrasts the claimant's measurements of input fibres and output fibres at the splice point with the following values (statement of defence dated 13 March 2025, page 35, para. 103, middle column: information provided by the defendant, so-called "actual values"; right-hand column: measurements taken by the Claimant, known as "measurements by Trumpf"), whereby the Claimant

has additionally stated that the central/middle fibre of the input fibre bundle of the contested embodiment has a diameter of 50 ± 2 μm , like the inner core of the output fibre (cf. statement of claim dated 2 December 2024, page 22 et seq., para. 71): [...]

33. In the course of the proceedings, confidentiality orders with access restrictions pursuant to Rule 262A of the RoP were issued on application by the defendant, concerning the functionality and the dimensions of the contested embodiments at the splice point as communicated by the defendant (see orders of 4 April 2025 and 8 August 2025).

APPLICATIONS OF THE PARTIES

34. The claimant last requested in the infringement proceedings, whereby the auxiliary requests designated here as I.1.a. to I.1.e. reflect the limited versions of patent claim 6 defended in the alternative with alternative applications 1 to 10, and alternative application I.1.f concerns the applications submitted most recently in the interim proceedings on 19 January 2026 with regard to the alternative patent infringement claim with equivalent means (cf. summary: Annex KO_2s):

I. The defendant is prohibited from

1. manufacture, offer, place on the market, use or import optical devices

in Germany, Finland, France, Italy, the Netherlands, Austria, and/or Romania, or to offer, market, use, import or possess them for the aforementioned purposes.

comprising an optical combiner comprising a bundle of input fibres spliced to an output fibre, wherein the output fibre comprises a first region having a refractive index n_0 and a diameter equal to or greater than the diameter of the input fibre bundle, and one or more secondary regions within the first region, wherein the secondary regions each have a refractive index different from n_0 , wherein each of the secondary regions does not overlap all of the input fibres, wherein the secondary region comprises at least one annular region of high index, wherein the input fibre bundle comprises an inner fibre and at least one radially outer set of input fibres, and wherein the annular region overlaps the radially outer set of input fibres but not the inner fibre, and by a plurality of lasers, each laser being arranged to provide a laser output to a respective input fibre, wherein the laser outputs of the lasers are independently controllable to independently select or adjust the beam profile of a laser beam output from the output fibre;

- Claim 6 (direct infringement) -

1.a. Alternatively to point I.1.:

Optical devices

in Germany, Finland, France, Italy, the Netherlands, Austria, and/or Romania, or to import or possess them for the aforementioned purposes,

comprising an optical combiner comprising a bundle of input fibres spliced to an output fibre, wherein the output fibre comprises a first region having a refractive index n_0 and a diameter equal to or greater than the diameter of the input fibre bundle, and one or more secondary regions within the first region, wherein the secondary regions each have a refractive index different from n_0 , each of the secondary regions not overlapping all of the input fibres, the secondary region comprising at least one high-index annular region, the high-index annular region comprising an inner diameter and an outer diameter, the inner diameter being greater than or equal to the diameter of one of the input fibres and the outer diameter being less than or equal to 3 times the diameter of one of the input fibres, wherein the input fibre bundle comprises an inner fibre and at least one radially outer set of input fibres, and wherein the annular region overlaps the radially outer set of input fibres but not the inner fibre, and by a plurality of lasers, each laser being arranged to provide a laser output to a respective input fibre, the laser outputs of the lasers being independently controllable to independently select or adjust the beam profile of a laser beam output from the output fibre;

- Claim 6 according to auxiliary request 1 (direct infringement) -

1.b. alternatively to item I.1.a.:

Optical devices for adjusting a beam profile during material processing

in Germany, Finland, France, Italy, the Netherlands, Austria, and/or Romania, or to import or possess them for the aforementioned purposes,

comprising an optical combiner comprising a bundle of input fibres spliced to an output fibre, wherein the output fibre comprises a first region having a refractive index n_0 and a diameter equal to or greater than the diameter of the input fibre bundle, and one or more secondary regions within the first region, wherein the secondary regions each have a refractive index different from n_0 , each of the secondary regions not overlapping all of the input fibres, the secondary regions being a central core and an annular high-index region, the

annular high-index region comprising an inner diameter and an outer diameter, the inner diameter being greater than or equal to the diameter of one of the input fibres and the outer diameter being less than or equal to 3 times the diameter of one of the input fibres, the input fibre bundle comprising an inner fibre and at least one radially outer set of input fibres, and wherein the annular region overlaps the radially outer set of input fibres but not the inner fibre, and by a plurality of lasers, each laser being arranged to provide a laser output to a respective input fibre, the laser outputs of the lasers being independently controllable to independently adjust the beam profile of a laser beam output from the output fibre, the output of each of the plurality of lasers being adaptable during operation to change the beam profile of the laser beam output during operation;

- Claim 6 according to auxiliary request 2 (direct infringement) -

1.C. alternatively to item I.1.b.:

Optical devices for adjusting a beam profile during material processing

in Germany, Finland, France, Italy, the Netherlands, Austria, and/or Romania, or to import or possess them for the aforementioned purposes,

comprising an optical combiner comprising a bundle of input fibres spliced to an output fibre, wherein the input fibres all have substantially the same outer diameter, wherein the output fibre has a first region with a refractive index n_0 and a diameter equal to or greater than the diameter of the input fibre bundle and comprising one or more secondary regions within the first region, the secondary regions each having a refractive index different from n_0 , each of the secondary regions not overlapping all of the input fibres, the secondary regions being a central core and a high-index annular region, wherein the high-index annular region comprises an inner diameter and an outer diameter, and the inner diameter is greater than or equal to the diameter of one of the input fibres and the outer diameter is less than or equal to 3 times the diameter of one of the input fibres, wherein the input fibre bundle comprises an inner fibre and at least one radially outer set of input fibres, and wherein the annular region overlaps the radially outer set of input fibres but not the inner fibre, and by a plurality of lasers, the lasers being fibre lasers, each laser being arranged to provide a laser output to a respective input fibre, wherein the laser outputs of the lasers are independently controllable to independently adjust the beam profile of a laser beam output from the output fibre, wherein the output of each of the plurality of lasers is adaptable during operation to change the beam profile of the laser beam output during operation;

- Claim 6 according to auxiliary request 3 (direct infringement) -

1.d. Alternatively to section I.1.c.:

Optical devices for adjusting a beam profile during material processing

in Germany, Finland, France, Italy, the Netherlands, Austria, and/or Romania, or to import or possess them for the aforementioned purposes,

comprising an optical combiner comprising a bundle of input fibres spliced to an output fibre, wherein the input fibres all have substantially the same outer diameter, wherein the output fibre has a first region with a refractive index n_0 and a diameter equal to or greater than the diameter of the input fibre bundle and comprising one or more secondary regions within the first region, the secondary regions each having a refractive index different from n_0 , each of the secondary regions not overlapping all of the input fibres, the secondary regions being a central core and a high-index annular region, wherein the high-index annular region comprises an inner diameter and an outer diameter, and the inner diameter is greater than or equal to the diameter of one of the input fibres and the outer diameter is less than or equal to 3 times the diameter of one of the input fibres, wherein the input fibre bundle comprises an inner fibre and at least one radially outer set of input fibres, and wherein the annular region overlaps the radially outer set of input fibres but not the inner fibre, and by a plurality of lasers, the lasers being fibre lasers, each laser being arranged to provide a laser output to a respective input fibre, the laser outputs of the lasers being independently controllable to independently adjust the beam profile of a laser beam output from the output fibre, wherein the output of each of the plurality of lasers is adaptable during operation to change the beam profile of the laser beam output during operation, control electronics for the plurality of lasers, configured to rapidly switch the output beam profile by individually driving or controlling the lasers, in particular to switch between beam profiles within an order of magnitude of a few tens of microseconds.

- Claim 6 according to auxiliary request 4 (direct infringement) -

- 1.e. In the further alternative, the claimant requests an injunction against the acts referred to in Section I.1 in a version in accordance with auxiliary requests 5 to 10, whereby auxiliary requests 5 to 7 and 9 correspond to auxiliary requests 1 to 4, with the exception that the order of the features has been changed, and where auxiliary requests 8 and 10 each correspond to auxiliary requests 3 and 4, with the exception that the order of the features has been changed and, in addition, the words "essentially" before "have the same outer diameter" have been deleted;

- 1.f. With its auxiliary requests $\text{Ä}0$ to $\text{Ä}10$, filed on 19 January 2026, which relate to the granted version of claim 6 of the patent in suit (auxiliary request $\text{Ä}0$) and auxiliary requests 1 to 10 (auxiliary requests $\text{Ä}1$ to $\text{Ä}10$) respectively, the Claimant bases its auxiliary claim for injunctive relief on the grounds of equivalent patent infringement on the following replacement means (marked):
- "wherein the output fibre comprises a first region with a refractive index n_0 and a diameter that is less than the diameter of the input fibre bundle at most in those regions that are not designed to guide light into the output fibre", instead of the requirement according to the granted version, "wherein the output fibre comprises a first region with a refractive index n_0 and a diameter that is equal to or greater than the diameter of the input fibre bundle"; and
 - "wherein each of the secondary regions does not overlap all regions of the input fibres that are designed to guide light into the output fibre", instead of the requirement according to the granted version, "wherein each of the secondary regions does not overlap all of the input fibres".

II. The defendant is ordered to

1. to provide the claimant with information on the extent to which it has committed the acts described in section I since 4 April 2018, in the form of a structured, comprehensible, electronically evaluable list in electronic form, broken down by month of the calendar year and by the devices identified in section I by their type designations, containing the following information:
- a) the origin and distribution channels of the products;
 - b) the identity (names and addresses) of all third parties involved in the manufacture or distribution of the products;
 - c) the quantities of devices manufactured, offered, delivered, received or ordered and the respective purchase and sale prices paid for the devices, stating the respective date of the offer, delivery or order and the respective manufacturer, purchaser, customer or recipient of the offer;
 - d) the advertising carried out, broken down by advertising media, its distribution, the distribution period and the distribution area, including evidence of these advertising activities;
 - e) the costs incurred, broken down by individual cost factors, and the profits generated;

whereby copies of the relevant supporting documents (namely invoices or, alternatively, delivery notes) must be submitted as evidence of the information provided, whereby details requiring confidentiality may be blacked out outside the data subject to the obligation to provide information and notification;

2. recall the devices referred to in section I that have been placed on the market since 4 April 2018 through the actions referred to in section I, by informing the third parties from whom the devices are to be recalled that this court has found that the devices infringe European Patent EP 2 951 625, whereby the defendant has made a binding commitment to the third parties to reimburse the costs incurred, in particular purchase prices paid, packaging and transport costs incurred, as well as customs and storage costs associated with the return, and to take back the devices;
3. to permanently remove from the distribution channels the devices referred to in section I that have been placed on the market since 4 April 2018 through the actions described in section I, by requesting the defendant to ask its commercial customers to cancel all orders or orders relating to the devices referred to in Section I and, in the event that commercial customers refuse to return the devices recalled in accordance with Section II.2, asserting any existing contractual claims for restitution in writing, under threat of legal enforcement;
4. to destroy or have destroyed at its own expense the devices referred to in Section I that are in its direct or indirect possession or ownership in Germany, Finland, France, Italy, the Netherlands, Austria and/or Romania or that have been repossessed in accordance with Sections II.2 or II.3;

and to submit to the court and the Claimant written proof of the measures it has taken in accordance with Sections II.2, 3 and 4;

III. The defendant is ordered

1. in the event of any violation of one of the prohibitions set out in Section I, to pay a repeated penalty of at least EUR 100,000.00 per infringing device;
2. in the event of any violation of one of the orders pursuant to Section II, a repeated penalty payment of at least EUR 5,000.00 per day for each day of the violation

to be paid to the court.

IV. The defendant is ordered to pay the claimant EUR 230,000.00 as provisional damages.

V. It is hereby determined that the defendant is obliged to compensate the Claimant for any further damage beyond the damage compensated for in accordance with Section IV that has been or will be caused to the Claimant by the actions described in Section I committed since 4 April 2018.

VI. The defendant shall bear the costs of the legal dispute and the Claimant's other costs.

35. The defendant requests that

that the action, including the scope of the alternative claims, be dismissed at the Claimant's expense;

36. With regard to its counterclaim for annulment, the defendant requests that

that European patent EP 2 951 625 B1 be declared invalid with effect for Germany, Finland, France, Italy, the Netherlands, Austria and Romania in the scope of claim 6.

37. The claimant, who has filed an application for amendment of the patent, finally requests with regard to the counterclaim for revocation:

1. The counterclaim is dismissed. Alternatively:

European patent EP 2 951 625 be maintained in Germany, Finland, France, Italy, the Netherlands, Austria and Romania, provided that patent claim 6 is worded in accordance with one of auxiliary requests 1 to 4 in Annex H (in the order listed there);

further in the alternative:

European patent EP 2 951 625 is upheld in Germany, Finland, France, Italy, the Netherlands, Austria and Romania, subject to the proviso that patent claim 6 is worded in accordance with one of the auxiliary requests 5 to 10 in Annex H_2 (in the order given there).

2. The counterclaimant shall bear the costs of the counterclaim.

38. With regard to the application for amendment of the patent, the defendant requests:

1. That the application for amendment of patent EP 2 951 625 B1 in accordance with auxiliary requests 1 to 4 (see Annex H) and 5 to 10 (see Annex H_2) be dismissed as inadmissible or rejected.

2. European patent EP 2 951 625 B1 is declared invalid with effect for Germany, Finland, France, Italy, the Netherlands, Austria and Romania to the extent of claim 6 of the respective auxiliary requests 1 to 10.

FACTUAL AND LEGAL ISSUES

INFRINGEMENT ACTION

39. The claimant is of the opinion that the contested embodiments make direct use of the teaching of claim 6 of the patent in suit in the literal sense. It is

sufficient if the inner fibre and at least one outer fibre of the input fibre bundle were each connected to a laser.

40. Mathematically/geometrically identical diameters of the input fibre bundle and output fibre are not required. Nor does the claim preclude the inner core of the output fibre of the contested embodiment from slightly overlapping the non-light-conducting outer *cladding* of the outer six input fibres, as is already the case. If this were to be viewed differently, the slight deviations present here would constitute an equivalent patent infringement.
41. The other six outermost fibres of the contested embodiment are technically non-functional and therefore not input fibres within the meaning of the teaching of the patent in suit. Even taking into account the technical functions claimed by the defendant, which lie outside the teaching of the patent in suit, there is no other assessment because these fibres cannot be used in a technically meaningful way to guide laser light.
42. The defendant objects to this and argues that, if interpreted correctly, the contested embodiment does not make literal use of the teaching of claim 6 of the patent in suit. In factual terms, its accurate information on the size ratios of the input fibre bundle and the output fibre at the splice point should be taken into account, rather than the Claimant's inaccurate measurements. Nor is there any equivalent patent infringement, in particular due to the lack of technical equivalence.
43. In any case, the claimant had waived its rights on the basis of [...] and could not assert any claims in this respect, in particular for damages and disclosure of information.
44. For further details, reference is made to the exchanged pleadings and annexes.

COUNTERCLAIM FOR NULLITY

45. The defendant bases its counterclaim for revocation concerning claim 6 of the patent in suit on the following grounds for revocation pursuant to Art. 138 EPC in conjunction with Art. 65(2) UPC Agreement:
 - lack of novelty (Art. 138(1)(a) in conjunction with Art. 54(1), (2) EPC);
 - lack of inventive step (Art. 138(1)(a) in conjunction with Art. 56 EPC);

- unacceptable extension (Art. 138(1)(c) EPC);
46. In the defendant's view, the patent in suit wrongly claims priority (Exhibit PS1a).
47. The defendant considers the subject matter of claim 6 of the patent in suit to be non-novel in relation to European patent application EP 2 071 376 A1 (EP'376; submitted as Annex D6) to be non-novel or, alternatively, non-inventive based on D6 with general technical knowledge, such as that contained in European patent application EP 362 466 A2 (EP'466, submitted as Annex D8), German patent application DE 38 33 992 A1 (DE'992, submitted as Exhibit D9) or the US patent specification US 4,566,765 (US'765, submitted as Exhibit D10), or in combination – individually in each case – with an article from the Laser Technik Journal (2011) by Andreasch et. al, "*Two concentric fibre diameters in one laser light cable*" (submitted as Exhibit D7), D8 to D10, the international patent application WO 2011/124671 A1 (WO'671, submitted as Exhibit D11) or the international patent application WO2013/182529 A2 (WO'529, submitted as Exhibit D13).
48. Furthermore, the subject matter of claim 6 of the patent in suit goes beyond the content of the original application (Exhibit PS1b) in several respects.
49. For further details, reference is made to the exchanged pleadings and annexes.

REASONS FOR THE DECISION

A. ADMISSIBILITY OF THE ACTION AND COUNTERCLAIM

50. The action, at least to the extent of the main claim relevant here, and the counterclaim are admissible.

I. INTERNATIONAL JURISDICTION OF THE UPC AND LOCAL JURISDICTION OF THE MANNHEIM LOCAL DIVISION

51. The UPC has international jurisdiction in the dispute for the infringement action pursuant to Art. 4(1) and Art. 71b(1) of the Brussels I Regulation in conjunction with Art. 31 of the UPC Agreement. The local jurisdiction of the Mannheim local division is based on Article 33(1)(b) of the UPC Agreement. The defendant rightly did not raise any objections to this in a preliminary objection under Rule 19 of the RoP.

52. The international jurisdiction of the UPC for the counterclaim for revocation is based on Art. 31 UPC Agreement, Art. 71b(1) and Art. 24(4) of the Brussels I Regulation. The jurisdiction of the local division in Mannheim is based on Art. 33(3)(a) UPC Agreement.

II. RELEVANT CLAIMS

53. In any case, the status of the claims achieved with the Reply is decisive.

Amendments with the Claimant's Reply.

54. Insofar as the claimant supplemented the infringement action in the Reply with auxiliary requests 1 to 4 submitted in the proceedings for amendment of the patent, this is not objectionable. Such adjustments, which take into account the versions of the patent in suit defended in the alternative with the application pursuant to Rule 30.1 RoP, do not constitute an amendment within the meaning of Rule 263 RoP, but merely clarify that the plaintiff also seeks a lesser degree of relief if the patent in suit is partially revoked in accordance with the application for amendment of the patent. In this respect, Rule 30 of the RoP is *lex specialis* to Rule 263 of the RoP (see local division Mannheim, decision of 2 April 2025, UPC_CFI_365/2023, para. 25 – FUJIFILM/Kodak).

Further amendments after the Claimant's Reply

55. Whether the adaptation of the applications in the infringement action to auxiliary applications 5 to 10, which were only submitted with the Reply in the proceedings concerning the requested amendment of the patent, is also admissible and whether this also applies to the arguments relating thereto does not need to be decided, because these further auxiliary applications are not relevant to the dispute.
56. Similarly, in the absence of relevance to the decision, it can be left open whether the auxiliary requests Ä0 to Ä10, which were only submitted in the interim proceedings and which designate the replacement means which, in the Claimant's view, are intended to establish the alternative claim of equivalent patent infringement, and whether this also applies to the Claimant's further statements on equivalent patent infringement in the document submitted after the rejoinder in the infringement proceedings on 1 September 2025, for which it has applied for admission under Rule 36 of the RoP.

III. SPECIFICITY

57. The claims to be decided upon are sufficiently specific.

58. The fact that the contested embodiments are not named in the claims but are described in abstract terms by reproducing the patent claim is permissible according to the practice of the Mannheim local division if the contested embodiments are clear from the grounds of the application, which is the case here.
59. Whether the auxiliary claims Ä0 to Ä10 concerning the alleged equivalent patent infringement, filed on 19 January 2026, are also sufficiently specific can be left open as it is not relevant to the decision.

B. SUBJECT MATTER AND INTERPRETATION OF THE PATENT

60. The patent in suit relates to a *fibre optical laser combiner*, in particular for combining/bundling the *output of several lasers* into a *single output fibre* and for controlling the beam profile emitted by this output fibre (see *paragraph* [0001]).
61. According to the information in the patent in suit, many laser processing methods in the prior art are based on beam guidance via an optical fibre. This fibre is usually radially symmetrical. It also has a circular cross-section and a uniform refractive index profile, so that the laser beam emitted by the output fibre is also circularly symmetrical and generally produces a uniform distribution of light on a workpiece (see para. [0002]).
62. For many applications, however, it is desirable to generate *tailored, non-uniform* light distributions on the workpiece to be processed, such as an *annular* profile or profiles with a *central peak*. Known methods for producing such profiles are often too complex and involve the use of *free-space optics (FSO)*, which are undesirable, especially in high-power fibre laser systems (see para. [0003]).
63. A known method for producing high-power fibre laser systems consists of combining the outputs of several lasers via a *tapered fibre bundle* connected to an output fibre. Each laser is fed into the bundle via a separate input fibre (*each laser is delivered*

to the bundle via a separate input fibre). The laser beams in the separate input fibres are combined and all receipts then exit via the same single output fibre. One aspect of such a combination scheme is that although the individual input fibres are in close proximity to each other, their receipts are still separate as long as they are in the tapered fibre bundle. The *standard output fibre* collects/receives all input signals and generates a uniform output signal because all input signals [from the input fibres] are superimposed by the same circular region [of the output fibre] with a uniform refractive index (*overlapped by the same circular symmetric single refractive index region*, cf. para. [0004]).

64. Various fibre optic laser combiners are known in the prior art (paragraphs [0005] to [0009]).
65. Against this background, the objective task underlying the patent in suit is to provide an improved fibre optic laser device that avoids free-space optics, in particular for generating an adapted, uneven laser light distribution on a workpiece (see also para. [0010]).
66. Contrary to the Claimant's opinion, the creation of an adapted laser light distribution is also part of the objective task of the patent in suit. The skilled person can infer from the introductory description and the state of the art described that the patent in suit aims to achieve such light distribution with the claimed invention. Contrary to the Claimant's opinion, the task formulated in this way does not contain any references to the solution proposed for achieving this objective.
67. As a solution, the patent in suit proposes, in patent claim 6, an optical device whose features, based on the technically sensible proposal of the Claimant (Exhibit K6), can be structured and translated as follows (features corresponding to the defendant's structure in []):

| | | |
|---------------|---|--|
| 6. [6] | Optical apparatus, comprising | Optical apparatus, comprising |
| 6.1 [6.1] | an optical combiner (25), | an optical combiner (25), |
| 6.1.1 [6.1.1] | comprising a bundle of input fibres (11g, 11a-11f), | which comprises a bundle of input fibres (11g, 11a-11f), |

| | | |
|--|--|--|
| <p>6.1.1.1 [6.1.5]</p> | <p>the input fibre bundle comprising an inner fibre (11g) and at least one radially outer set of input fibres (11a-11f),</p> | <p>wherein the input fibre bundle comprises an inner fibre (11g) and at least one radially outer set of input fibres (11a-11f) comprising an inner fibre (11g) and at least one radially outer set of input fibres (11a-11f) comprising an inner fibre (11g) and at least one radially outer set of input fibres (11a-11f) comprising an inner fibre (11g) and at least one radially outer set of input fibres (11a-11f) comprising an inner input fibres (11a-11f),</p> |
| <p>6.1.1.2 [6.1.2]</p> | <p>spliced to an output fibre (6, 17, 26),</p> | <p>which are spliced to an output fibre (6, 17, 26)</p> |
| <p>6.1.2 [6.1.2.1] [6.1.2.2]</p> | <p>said output fibre comprising a first region (8) with refractive index n_0 and diameter equal to or greater than an input fibre bundle diameter and</p> | <p>wherein the output fibre comprises a first region (8) with a refractive index n_0 and a diameter equal to or greater than the diameter of the input fibre bundle and</p> |
| <p>6.1.2.1 [6.1.2.3] [6.1.2.4]</p> | <p>one or more secondary regions (7, 18) within the first region, the secondary regions each having refractive index that differs from n_0 [and]</p> | <p>one or more secondary regions (7, 18) within the first region, the secondary regions each having a refractive index that differs from n_0 [and]</p> |
| <p>6.1.2.2 [6.1.4]</p> | <p>at least one annular high-index region (18),</p> | <p>at least one <i>annular</i> region (18) of high index;</p> |
| <p>6.2 [6.1.3]</p> | <p>each of the secondary regions not overlying all of the input fibres</p> | <p>each of the secondary regions not overlying not all of Input fibres,</p> |
| <p>6.2.1 [6.1.6]</p> | <p>wherein said annular region (18) overlies said radially outer set of input fibres but does not overlie said inner fibre and</p> | <p>wherein the annular region (18) overlies the radially outer set of input fibres but does not overlie the inner fibre, and</p> |
| <p>6.3 [6.2]</p> | <p>a plurality of lasers (Laser 1, Laser 2),</p> | <p>a plurality of lasers (Laser 1, Laser 2),</p> |

| | | |
|------------------|--|---|
| 6.3.1 [6.2.1] | each laser arranged to provide a laser output to a respective input fibre, | wherein each of the lasers is arranged to provide a laser output to a respective input fibre, |
|------------------|--|---|

| | | |
|--------------------------|--|--|
| <p>6.3.2 [6.2.2]</p> | <p>wherein the laser outputs of the lasers are independently controllable to select or adjust the beam profile of a laser beam output from the output fibre (6,17,26).</p> | <p>wherein the laser outputs of the lasers are independently controllable to select or adjust the beam profile of a laser beam output from the output fibre (6, 17, 26).</p> |
|--------------------------|--|--|

68. Some features require closer examination:

OPTICAL DEVICE

69. An **expert**, in this case a physicist with a degree or comparable university qualification and several years of practical experience in the field of industrial laser technology for material processing, understands an optical device according to **feature 6** to be, in principle, a device with which light can be directed, focused or modified in a targeted manner. From the further specifications of claim 6 of the patent in suit, the skilled person recognises that a device for focusing and emitting laser light is claimed in this respect.

70. As a starting point, the optical device must therefore comprise an optical combiner (feature 6.1), which in turn has a bundle of input fibres and an output fibre (features 6.1.1 to 6.2.1), and a plurality of lasers (feature group 6.3). The specific properties of these components of the optical device are specified in more detail in the following features.

OPTICAL COMBINER

71. An optical combiner in the sense of **feature 6.1**, which is generally known in the prior art, relates to the exit side of input fibres and the entry side of an output fibre and has the function of transferring the laser light entering via the input fibres to the output fibre (see, for example, paragraphs [0001], [0004] and [0031]).

Bundle of input fibres

72. According to **feature 6.1.1**, the combiner must *comprise* a bundle of input fibres.

73. In the context of the teaching of the patent in suit, a specialist understands an input fibre to be a fibre that can connect the *output* of a laser to an optical combiner, thus representing the *receipt* of the laser light source for the latter. Apart from the specifications in features 6.1.1.1 and 6.1.1.2 (see below), claim 6 of the patent in suit does not contain any further requirements regarding the design of the input fibres. In particular, the selection of a suitable material is left to the skilled person, as is the possible implementation of a *tapered* guide for several input fibres towards the splice point (see, for example, paragraphs [0004], [0023] and [0028]). The same applies to the technical implementation of a laser light-conducting fibre core, which may be surrounded by a so-called *cladding* or several differently designed cladding areas (see, for example, para. [0023]).
74. Contrary to the defendant's opinion, however, input fibres within the meaning of feature 6.1.1 are not only those fibres that are actually connected to a laser source. Rather, it is sufficient that they could be connected to a laser source in a technically sensible manner in order to guide light to the splice point in the combiner and couple it into the output fibre there (see more details in connection with feature group 6.3).
75. According to **feature 6.1.1.1**, the input fibre bundle must *comprise* an inner fibre (11g) and at least one radially outer set of input fibres (11a-11f). According to this, the input fibre bundle must consist of at least three input fibres in total, namely one inner fibre and at least two radially outer fibres relative to the inner fibre.
76. Contrary to the defendant's opinion, feature 6.1.1.1 only provides for one inner input fibre, which serves as a clear reference point for the (*at least one*) set of input fibres arranged radially outside. This is already indicated by the wording "*an inner fibre*", even if this alone does not reveal whether an indefinite article or a numeral is meant, especially since the relevant original language does not say "[*only*] *one inner fibre*".
77. However, it follows from the overall context of the claim that, in the event of a dispute, only one inner fibre should actually be present, and the word "an" should therefore be understood as a numeral

. This follows, on the one hand, from the comparison with the at least one radially outer set of input fibres. In this respect, at least one set is provided for (*at least one*), whereby the claim expressly allows for several sets.

78. This understanding is confirmed by the description and figures of the patent in suit. According to these, the inner fibre is also referred to as *the first central fibre*, which forms the reference point for the other *outer fibres* (see, for example, para. [0023], col. 3, lines 41 et seq.; paras. [0024] to [0026], para. [0028]). Accordingly, the figures of the patent in suit (Figures 1, 4, 8, 12 and 14) also show only orders of the fibre bundle with only one inner fibre. The terms '*central*' and '*inner*' fibre are therefore used synonymously in the patent in suit.
79. This is consistent with independent claim 1, in which the central fibre is referred to as "*a central fibre*". Against the background of the above-cited passages in the description, the different terms in the two parallel claims do not have different meanings. Rather, the device according to claim 6 is clearly intended to implement the method according to claim 1.
80. Based on the function that the patent in suit attributes to the inner or central fibre, this understanding is also technically consistent. According to the teaching of the patent in suit, the single inner fibre is the clear reference point for the radially outer fibres and forms the area that is not to be covered by the ring-shaped secondary area of the output fibre (see below). For this reason, a single central or inner fibre is provided, which is clearly identifiable as the corresponding reference point in the fibre bundle.
81. Accordingly, **feature 6.2.1** also emphasises that the ring-shaped area of the initial fibre (see below) overlaps the radially outer set of *initial fibres*, but should not overlap the inner *fibre*. In this respect, too, the patent claim, in accordance with the description and the figures, deliberately distinguishes between a plurality of fibres and exactly one inner fibre of the input fibre bundle.
82. By using only one inner fibre, which can accordingly guide the light (exactly) from a connected laser source, the patent in suit also aims to provide the technical function of generating a narrow central beam profile, which is ideal for laser cutting, through its sole excitation (see para. [0032], lines

35-37). In this respect, too, it can be inferred from the description of the patent in suit, in accordance with the wording of claim 6, that only one inner fibre is deliberately provided.

83. Contrary to the defendant's opinion, nothing else can be inferred from paragraph [0025] of the description. This is because the reference therein to a central core 13 of the output fibre 12 *being generally concentric* with or *at least inside* the inner/central input fibre does not call into question the precise delimitation of different areas of the input fibre bundle achieved by the claimed order of the input fibre bundle, which in turn couple to specific delimitable areas of the output fibre to generate different beam profiles.
84. With reference to the inner or central fibre, the input fibre bundle must additionally comprise at least one radially outer set of input fibres, i.e. at least two, in accordance with **feature 6.1.1.1**. The specification "*radially outer*" refers to the order in the input fibre bundle starting from the one inner fibre. Seen from this fibre, the set of additional input fibres must extend radially outwards.
85. A possible order of the input fibre bundle that meets these requirements is shown in Figure 1 of the patent in suit below:

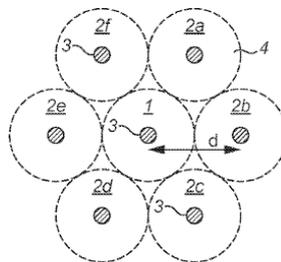


FIG. 1

According to this, the input fibre bundle comprises a total of seven input fibres, consisting of a *first* central fibre 1 and six outer fibres 2a to 2f, which are located radially outwardly when viewed from the central fibre 1. The input fibres each have a light-conducting core 3 and a cladding 4 with a diameter d (see para. [0023]). This is shown in Fig. 8 of the patent in suit.

86. It is therefore apparent to the skilled person that the patent in suit refers to an input fibre not only as its light-conducting core, if present, but also as the entire area that can be distinguished from other fibres and surrounds this core, such as a *cladding*. Accordingly, the diameter d of the input fibre also refers to this area and is not limited to the light-conducting core.
87. As already explained and as can also be seen from the context of **feature 6.2.1**, according to which the ring-shaped area of the output fibre (see below) overlaps the radially outer set of input fibres but not the inner fibre, the claimed structuring or order of the fibres of the input fibre bundle serves to mark definable areas that are reference points for the intended (non-)overlay by the ring-shaped secondary area of the output fibre at the splice point.
88. This (non-)superposition serves a technical-functional purpose, namely to couple *the vast majority of the input light* entering via the radially outer set of fibres of the input fibre bundle directly to the secondary annular region of the output fibre (cf. para. [0029], col. 5, lines 5 ff.; see also para. [0018]).
89. Against the background of this technical function, the claimant correctly argues that optionally available additional outer fibres, which are not intended for the (technically useful) coupling of laser light from a connected laser into the output fibre at the splice point, but rather provide other functions, such as improving the mechanical and/or thermal properties of the input fibre bundle or reducing the effects of laser light reflection from the workpiece being processed into the output fibre, are not (further) radially outer input fibres within the meaning of the teaching of claim 6 of the patent in suit.
90. Such additional fibres, which serve other purposes, therefore do not have to be covered by the annular region according to **feature 6.2.1**. This is because their function is precisely not to "couple" laser light into the secondary annular region of the output fibre as intended.
91. In order to ensure this technical function, namely the coupling of the vast majority of the light from the input fibres (*the large majority of the input*

light) to specific areas of the output fibre, the input fibre bundle must be spliced to the output fibre in accordance with **feature 6.1.1.2**.

92. The selection and implementation of a suitable splicing method (joining method) is left to the discretion of the specialist, provided that a sufficiently strong and light-transmissive connection is created between the input fibre bundle and the output fibre bundle, which reliably allows the transfer of laser light from the input fibre bundle to the output fibre and, in particular, complies with the specifications of **features 6.2** and **6.2.1** regarding the areas of the input fibre bundle that are (not) to be superimposed by the output fibre.

Output fibre

93. The detailed specifications for the design of the output fibre are the subject of **feature groups 6.1.2 and 6.2**.
94. According to **feature 6.1.2**, the output fibre must comprise a first region with a refractive index n_0 and a diameter that is equal to or greater than the diameter of the input fibre bundle.
95. This feature also serves to couple the light from the input fibre bundle into the output fibre. **Feature 6.1.2** therefore does not require mathematical/geometric precision with its specification that the diameter of the first region of the output fibre should be "equal to or greater than the diameter" of the input fibre bundle.
96. Rather, as the skilled person will recognise from a functional point of view, it is sufficient for the diameter of the output fibre (relative to its first region, see below) that (at least) approximately corresponds to the diameter of the input fibre bundle, so that the output fibre can absorb (couple) the vast *majority of* the laser light provided by the input fibres and transmit it for processing. Measurement inaccuracies known to the skilled person, manufacturing-related fluctuations in the production process and other minor deviations in the micrometre range, such as caused by positioning inaccuracies during the splicing process, which do not compromise the function of splicing the input fibre bundle to an output fibre that (almost) corresponds to the input fibre bundle in terms of its dimensions

corresponds (almost) to the input fibre bundle and can therefore absorb (almost) all of the laser light and bundle it into a fibre, are consistent with the requirement *for an "equal" diameter*.

97. This applies in particular if the output fibre does not overlap the input fibres in the area of their respective outer cladding edges, if any, because this area is specifically designed to reflect laser light back towards the laser light-conducting cores of the input fibres, and any laser light that nevertheless passes into these areas of the input fibre not overlapped by the output fibre does not therefore compromise the function of coupling the vast majority of the incoming laser light into the output fibre at the splice point. The invention is not concerned with the most mathematically exact light distribution on the workpiece, but with providing a non-uniform or tailor-made light distribution pattern that is sufficient for the invention's broad technical field of application. This does not require a highly precise delimitation of the light-conducting areas, as argued by the defendant, and is not addressed as a technical problem in the entire document.
98. Accordingly, the general description of the patent in suit with reference to a device according to claim 6 of the patent in suit also emphasises that the first region of the output fibre has a diameter that is preferably equal or substantially equal to the diameter of the input fibre bundle at the splice point (see paragraph [0013], "*The first region has a diameter which preferably is equal or substantially equal to the diameter of the input fibre bundle at the splice point*"). Similarly, with reference to Fig. 5, there is a requirement that the diameter of the first region of the output fibre is approximately equal to the diameter of the input fibre bundle (see para. [0024]). Even though Fig. 5 explicitly refers only to method claim 1 and also covers a configuration of the output fibre that is not covered by claim 6 of the patent in suit – with regard to the secondary regions – the skilled person recognises that the same applies to the other output fibres disclosed in the patent in suit, such as those shown in Fig. 13, and thus also for the device claimed in claim 6. This is because the device is intended to be capable of performing the method according to claim 1.
99. If, in addition to a radially outer set of input fibres, which serves to couple laser light into the output fibre, further outer fibres are optionally provided

which are used functionally for other purposes, these are also disregarded when determining the diameter ratios according to feature 6.1.2.

100. The first region with a refractive index n_0 referred to in feature 6.1.2 is distinguished from the at least one secondary region of the output fibre according to **feature 6.1.2.1** in that the latter has a refractive index different from n_0 , whereby no further specifications are made as to whether this must be higher or lower than the refractive index of the first region.
101. **Feature 6.1.2.2** further specifies this requirement in that, in any case, an *annular* secondary region with a high (refractive) index must be present. Further secondary regions are optional.
102. A possible order of the output fibre that meets these requirements is shown in Figure 13 of the patent in suit, reproduced below:

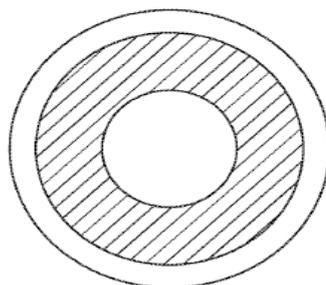


FIG. 13

103. The circular outer line delimits the first (white) region of the output fibre with a refractive index n_0 , which is followed – shown hatched – by a ring-shaped (secondary) region with a high refractive index, which in turn is followed by a further first region with a refractive index n_0 (white inner core).
104. As the defendant correctly asserts, and as the Claimant does not dispute, claim 6 of the patent in suit, according to its clear wording, presupposes an *annular* secondary region with a high index. This clearly distinguishes the patent claim from designs in which only a *central core* (cf. para. [0019], para. [0024]) with a high refractive index is provided, which also does not cover the radially outer fibres of the input fibre bundle (feature 6.2.1).

105. The embodiments of an output fibre shown in Figs. 5, 11 and 12 are therefore not reflected in claim 6 of the patent in suit and, in deviation from the principle that, in case of doubt, a claim must be interpreted as covering all disclosed embodiments (see Court of Appeal, decision of 25 November 2025, UPC_CoA_464/2024, 3rd Ls - Meril v. Edwards), do not fall within its scope of protection. The parties also correctly understand this to be the case.
106. Claim 6 of the patent in suit does not provide any further specifications regarding the high refractive index of the at least one annular secondary region. This must (only) be higher than n_0 of the first region. Depending on the selected difference in refractive indices, this ensures that the laser light entering via the outer fibres of the input fibre bundle is essentially coupled into the ring-shaped secondary region of the output fibre to generate ring-shaped beam profiles.
107. Accordingly, **features 6.2 and 6.2.1** additionally require that the ring-shaped area of the output fibre overlaps the radially outer set of input fibres of the input fibre bundle, but not the inner fibre. A possible order that meets these requirements can be seen in Figure 14 below:

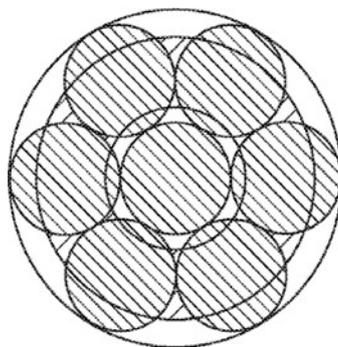


FIG. 14

Figure 14 shows the annular region of the output fibre from Figure 13 in an overlapping state with an input fibre bundle (cf. para. [0028], "as is shown in Figure 14 where the annulus is shown as overlapped with the outer input fibres"), while the inner fibre is not overlapped by the annular region.

108. As can be seen from this embodiment of the invention, an *overlay* within the meaning of **feature 6.2.1** also exists if the annular secondary region essentially covers the radially outer input fibres, in particular with regard to their light-conducting fibre cores. However, complete coverage of the input fibres, in particular in the edge areas of a possible cladding, is not necessary in this respect either.
109. This is consistent with the function of this order, as already explained, which is to enable the coupling of the "large majority" of the laser light (*large majority of the input light*) from the outer input fibres into the ring-shaped area of the output fibre (see para. [0029]). To this end, it is not necessary for the ring-shaped area of the output fibre to (completely) cover the outer areas of the outer input fibres that are distant from the light-conducting fibre cores and to (completely) couple the incoming light into the circular area without loss.
110. Optionally available additional secondary areas must have a refractive index different from n_0 according to **feature 6.1.2.1** and, according to **feature 6.2**, must not overlap all of the input fibres.
111. According to paragraphs [0034] and [0019] of the description of the patent in suit, for example, in addition to a ring-shaped secondary region, there may also be a central core with a relatively high refractive index profile compared to the rest of the output fibre. Contrary to the defendant's opinion, such a design of the output fibre falls within the wording of feature 6.1.2.1. Whether this understanding would lead to an impermissible extension of the granted version of claim 6 of the patent in suit (*quod non*, see below) is irrelevant for the interpretation. Granted patent claims must not be interpreted beyond their meaning in order to avoid an impermissible extension.
112. As already explained several times, the respective (non-)overlying of the output fibre and the input fibre bundle serves to couple light from the input fibres into specific areas of the output fibre in a targeted manner. Therefore, it cannot be ruled out that a further optional secondary area of the output fibre (with a high refractive index) completely overlaps the inner fibre of the input fibre bundle, for example to generate a beam profile with a "central peak", and at the same time slightly overlaps the edge areas of the outer input fibres in the area of their outer cladding region, if any, if this area serves a technical-functional purpose of reflecting laser light towards the core of the outer input fibres.

outer cladding area, if this area serves a technical-functional purpose of reflecting laser light towards the core of the outer input fibres. Also in this respect lies according to the above Executed no "Superposition" within the meaning of features 6.2 and 6.2.1, which must serve to purposefully couple laser light into a specific area of the output fibre.

PLURALITY OF LASERS

113. According to **feature group 6.3**, the optical device must comprise a plurality of lasers in addition to the optical combiner, the input fibre bundle and the output fibre. Each of the lasers must in turn be set up to provide a laser output to a respective input fibre (**feature 6.3.1**). The lasers then feed laser light into the receipt of the input fibre, which "transfers" it via its output in the combiner at the splice point to the receipt of the output fibre.
114. As the claimant correctly argues, the relevant wording of the claim does not specify that each of the fibres of the input fibre bundle that are suitable for coupling laser light, such as in particular each of the radially outer fibres, must actually be connected to a laser. Rather, any "plurality" of lasers, including (only) two lasers, which meet the further requirements under features 6.3.1 and 6.3.2, is sufficient.
115. This also applies if the input fibre bundle provides for additional fibres to which a laser *could* be connected in a technically feasible manner in order to guide laser light to the splice point. The claimed optical combiner is therefore not limited to embodiments in which all input fibres potentially available for connection to a laser source, which could couple light into the output fibre at the splice point as intended, are actually connected separately to a laser. In this respect, contrary to the defendant's opinion, claim 6 of the patent in suit does not require that at least three lasers be present because the input fibre bundle must itself consist of at least three fibres (one central and two radially outer fibres). The defendant does not provide any technically or functionally convincing reason for this. Rather, in order to generate a ring-shaped laser light image on the workpiece, it is sufficient that the light from

an outer input fibre is introduced via the splice point into the outer ring of the output fibre and emitted from the latter onto the workpiece.

116. The defendant has therefore rightly not disputed that the intended technical effects of claim 6 of the patent in suit, namely the provision of different beam profiles, can also be achieved if only the central inner fibre and one fibre of the outer set of input fibres are connected to a laser.
117. Therefore, the fact that the description of the patent in suit explains embodiments in which each of the available input fibres is connected to a separate laser (see paragraphs [0023], [0031] et seq.; Figure 15) does not lead to a different assessment, in the defendant's view. The embodiments cannot narrow the subject matter of claim 6 of the patent in suit below its literal meaning.
118. According to **feature 6.3.2**, the independent control of the laser outputs of the lasers used serves to select or adjust the beam profile of the output of the output fibre, i.e. the laser beam that ultimately hits the workpiece to be processed. In this respect, according to patent claim 6, one of the two options (*to select or adjust*) is sufficient.
119. The further questions of interpretation discussed by the parties in this context can be left open in the event of a dispute. They are irrelevant both for the assessment of the legal status of the patent in suit, for which feature 6.3.2 is not decisive, and for the question of infringement, because the defendant has not disputed the realisation of the feature even under the Claimant's narrower interpretation of the feature. This applies in particular to the questions discussed between the parties as to whether a selection of the beam profile can be distinguished from an adjustment and whether feature 6.3.2 has a "cumulative or" subject matter in this respect.

C. COUNTERCLAIM FOR NULLITY

120. The admissible counterclaim for revocation is unfounded.
121. Assuming that the priority right of the patent in suit is invalid (see C. I.), the granted patent claim 6 is nevertheless legally valid. Its

subject matter does not go beyond the originally filed application documents (see C. II.1), is novel in relation to European patent application EP 2 071 376 A1 (EP'376; submitted as Annex D6; see C. II.2) and, based on D6, is also based on an inventive step (see C. II.3).

I. Claiming priority

122. In the case in dispute, it can be left open whether, as claimed by the defendant, the patent in suit does not effectively claim priority because the priority document (Exhibit PS1a) does not directly and unambiguously disclose the independent controllability of the laser outputs of the plurality of lasers according to **feature 6.3.2** for selecting or adjusting the beam profile emitted by the output fibre, which is why the priority document does not relate to the same invention as the patent in suit, cf. Art. 87(1) EPC.
123. Even if this is assumed in favour of the defendant and document D13, which was published after the priority date but before the filing date of the patent in suit, is therefore also taken into account in the assessment of inventive step (cf. Art. 56 EPC), this does not lead to the success of the counterclaim for revocation.

II. Granted version of claim 6 of the patent in suit (main request)

1. No inadmissible extension

124. Contrary to the defendant's opinion, the subject matter of claim 6 of the patent in suit does not go beyond the content of the originally filed application documents (Art. 138(1)(c) EPC, Art. 123(2) EPC).
125. An inadmissible extension occurs when the granted claim covers subject matter that goes beyond the content of the application as filed. In order to determine whether an inadmissible extension has occurred, it is therefore necessary to ascertain what a person skilled in the art, using their general knowledge and taking an objective view, would immediately and unambiguously derive from the entire application filed at the time of filing, whereby an implicitly disclosed subject matter, i.e. a subject matter that is clearly and unambiguously apparent from what is expressly stated, must also be regarded as part of the content. If the patent is a divisional application, this requirement applies to each earlier application (see Court of Appeal, order

of 14 February 2025, UPC_CoA_382/2024, pp. 12/13, para. 52 – Abbott/Sibio; decision of 2 October 2025, UPC_CoA_764/2024, 1st and 2nd paragraphs, pp. 16/17; para. 64 et seq. – expert/Seoul Viosys). A literal disclosure (*literal support*) of the features of the granted claim is just as unnecessary as a disclosure of all features in a paragraph or an embodiment of the application (see Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, UPC_CoA_529/2024, para. 90 - Amgen/Sanofi).

126. The assessment of whether this constitutes an inadmissible extension is a legal question to be decided on the basis of the facts presented by the parties. The facts are the granted patent claims and the filed application. Since it must be examined whether the granted patent claims have a basis in the application as a whole, the court may consider the entire document independently of the parties' arguments (see Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, UPC_CoA_529/2024, 4th para. and para. 61 – Amgen/Sanofi).

127. According to these principles, the subject matter of granted patent claim 6 does not extend beyond the content of the parent application as filed.

Number of secondary (ring-shaped) areas in connection with feature 6.2.1

128. Contrary to the defendant's opinion, **feature 6.2.1** also originally discloses, in combination with several secondary areas of the output fibre, the requirement that the output fibre must have at least one ring-shaped secondary area that overlaps the radially outer input fibres but not the inner fibre.

129. The original application documents describe in general terms (Appendix PS1b, p. 2, lines 8-9 and claim 1) that the output fibre may have several secondary regions with a refractive index different from n_0 , whereby each of the (several) secondary regions must not overlay all of the input fibres of the input fibre bundle (*each of the secondary regions not overlying all of the input fibres*). The secondary regions of the output fibre are therefore ordered in such a way that they allow coupling of only a subset of the input fibres (Appendix PS1b, p. 2, lines 11-12). The input fibre bundle may comprise a central fibre and radially outer input fibres (Appendix PS1b, p. 3, lines 5-11). The output fibre may accordingly comprise, as secondary regions, for example, a central core and, *alternatively or*

additionally one or more secondary annular regions (Annex PS1b, p. 2, lines 20-27; p. 4, lines 10-14).

130. The application document further emphasises (Annex PS1b, p. 3, lines 1-3) that a secondary ring-shaped region of high index may be present, which overlaps the outer fibres of the input fibre bundle (Annex PS1b, p. 3, lines 22-25).
131. From these general descriptions, according to which there may be several secondary areas of the output fibre, each of which may not overlap all input fibres, whereby in turn at least one secondary ring-shaped area of high index may be present which overlaps the outer input fibres, the skilled person immediately and unambiguously understands that this at least one annular region overlapping the outer fibres must not simultaneously overlap the inner fibre. As the claimant correctly asserts, this is clear and immediately apparent, even without further clarification, from the binding requirement that each of the secondary areas, including the aforementioned annular secondary area overlapping the outer input fibres, must not overlap all input fibres.
132. The fact that there may be other secondary areas of the output fibre in addition to this ring-shaped secondary area can be deduced directly and unambiguously by a person skilled in the art from claim 1 and the above-mentioned passages in the description of the application documents. Among other things, a possible design of the output fibre is described there in such a way that, in addition to this one ring-shaped secondary area, which overlaps the outer input fibres, a central core, for example, may be provided as a further secondary area of the output fibre, which overlaps the inner input fibre. This is consistent with the general requirement that each of the secondary areas must not overlay all input fibres.
133. Accordingly, the application document on p. 4, lines 10-14, summarises once again in the general description that "the secondary regions may be an annular region or a plurality of annular regions, a combination of a central core and one or more annular regions, or other configurations". (*The secondary regions may be an annular region or a plurality of annular regions, a combination of a central core and one or more annular regions, or other configurations*).

134. A literal reproduction (*literal support*) of feature 6.2.1 with regard to the addition "*but does not overlap the inner fibre*" in connection with several secondary areas is not necessary according to the above-mentioned principles. Rather, it is sufficient if the skilled person can directly and unambiguously derive the subject matter claimed in the granted claim, i.e. its features, from the overall context of the application documents, which is the case here.
135. This knowledge, which is generally conveyed directly and unambiguously to the skilled person, is not limited by the embodiments described in the application documents (*by way of example only*, Annex PS1b p. 4, line 22), whereby the features of the granted version of the patent claim do not necessarily have to be disclosed in summary form in an example of embodiment according to the above. Accordingly, it is irrelevant whether the embodiments and the associated figures in the application documents include a receipt of the design of the starting fibre with a ring-shaped secondary region and a further secondary region, such as a central core.
136. In line with this, the application documents (Annex PS1b, p. 8, lines 16 to 18) conclude by emphasising once again, with reference to the embodiments explained above, "that the embodiments shown and described are for illustrative purposes only and that other embodiments may also be used. Some may have a central core and one or more annular or *other shape regions of relatively high-index compared to the rest of the output fibre*" (*The embodiments shown and described are illustrative only and other embodiments may be used. Some may have a central core and one or more annular or other shape regions of relatively high-index compared to the rest of the output fibre*).

Coupling of the lasers (feature 6.3.1)

137. Furthermore, **Feature 6.3.1**
directly and unambiguously,
138. Contrary to the defendant's opinion, the feature only requires that each of the multiple lasers be designed to feed light into an input fibre assigned to it.

139. A corresponding assignment of laser and input fibre is described and shown directly and unambiguously on p. 5, lines 12 to 20 and in Fig. 15 of the application documents. Contrary to the defendant's opinion, it is therefore clear to the skilled person that each of the plurality of lasers can be assigned (only) one input fibre. Against this background, the skilled person does not infer anything to the contrary from the description on page 7, line 21 ("*N individual fibre laser sources are coupled into the combiner through their respective fibres*"), because the use of the plural form stems from the reference to several laser sources.
140. However, as already explained in the interpretation of claim 6 of the patent in suit, it is not necessary for each of the available input fibres of the fibre bundle to actually be connected to a laser.

2. Novelty over EP'376 (D6)

141. The subject matter of claim 6 of the patent in suit is novel in relation to European patent application EP 2 071 376 A1 (Annex D6; hereinafter referred to as D6).
142. The assessment of novelty under Art. 54(1) EPC requires an examination of the entire content of the earlier publication. The decisive factor is whether the subject matter of the claim, with all its features, is directly and unambiguously disclosed in the citation (see Court of Appeal, Order of 25 September 2024, UPC_CoA_182/2024, para. 123).
143. Measured against this, feature 6.1.1.1 and parts of feature 6.2.1 in D6 are not directly and unambiguously disclosed.

Subject matter of D6

144. D6 relates to a method and a *fibre combiner* for combining optical radiation from several individual fibres or fibre-coupled lasers into a *single output fibre*, a so-called process fibre (para. [0001]).
145. Fibre lasers have many attractive properties that are suitable for various industrial applications. These lasers could be used for macroscopic processing applications such as welding and cutting metals. However, the optical output power of a single fibre laser in *single-mode* operation is often limited to around 1 kW.

many industrial applications, however, a higher laser power is required. It is therefore advantageous to bundle the power of several individual fibre lasers in a single process fibre in order to achieve a higher output power from this process fibre (para. [0002]). Several fibre optic couplers exist in the prior art (paras. [0003] to [0006]).

146. Based on this, D6 formulates the task of providing an improved method and device for combining radiation from multiple fibre sources in a single fibre (para. [0007]).

147. The fibre combiner according to the invention comprises a *tapering support preform*, a plurality of input fibres consisting of a core and a cladding surrounding the core and ordered in parallel in capillary bores of a support preform, and an output fibre coupled in optical communication with the input fibres by means of splicing at the tapered end of the support preform (para. [00011], para. [0027]). According to teaching D6, it is crucial that the ratio of the thickness of the cladding to the thickness of the core of the input fibres is reduced in the area of the tapering support preform.

148. An optical fibre combiner according to the invention is shown in cross-section in Fig. 6:

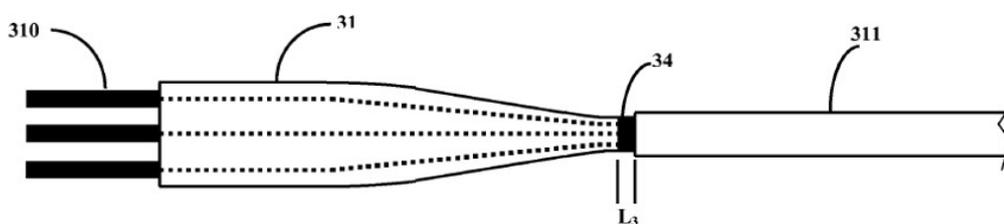


FIG. 6

The input fibres 310 are guided into the capillary bores (shown as dashed lines) in the area of the capillary tube 31 of the carrier preform with a reduced diameter and are spliced to the output fibre 311 (para. [0038]).

149. In one embodiment, the diameter of the tapered end of the carrier preform, i.e. the diameter of a circle that encloses all the cores of the input fibres at the tapered end of the carrier preform, may be smaller than the diameter of the core of the output fibre. This order ensures that

all light from the input fibres is guided into the core of the output fibre (para. [0019]).

150. The core of the output fibre may have a flat or non-flat refractive index profile, depending on the input fibre combination and the intended use of the combiner (para. [0025]). The optical brightness of the radiation in the core of the output fibre is determined by the numerical aperture (NA_1) of the light in the core of the input fibres, the diameter of the core of the output fibre and the power coupled into the core of the output fibre (para. [0040]).
151. According to one embodiment, all capillary bores of the carrier preform and thus all input fibres are of equal size (para. [0022]). The possible design of such a multi-chamber capillary tube is shown in the embodiment according to Figure 1 (para. [0031]):

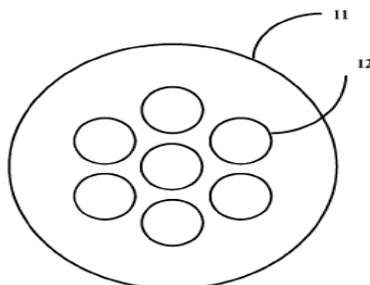


FIG. 1

Fig. 1 shows a cross-section of a multi-bore capillary tube 11. Several bores or longitudinal holes 12 run parallel to the longitudinal axis of the tube 11 through the tube, with the seven bores having the same diameter (*equal diameter*). In this case, the capillary tube 11 with its seven bores 12 can be used to combine seven lasers into a single output fibre (para. [0032]).

152. According to an alternative embodiment, the fibre combiner is a hybrid combiner, which means that the carrier preform has capillary holes of at least two different sizes (para. 22), as shown, for example, in Figure 2 with regard to the holes 22, 22' shown there:

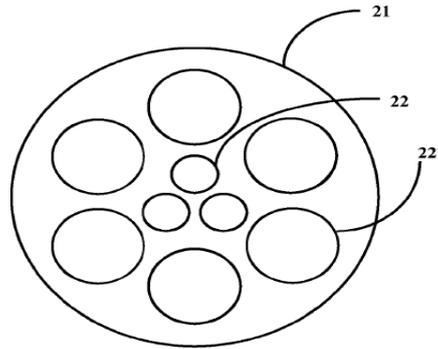


FIG. 2

153. With regard to such a hybrid combiner, Figure 8a shows a possible fibre arrangement of input fibres and – according to the defendant's submission – output fibre (shown in dashed lines) at the splice point (cf. para. [0031]):

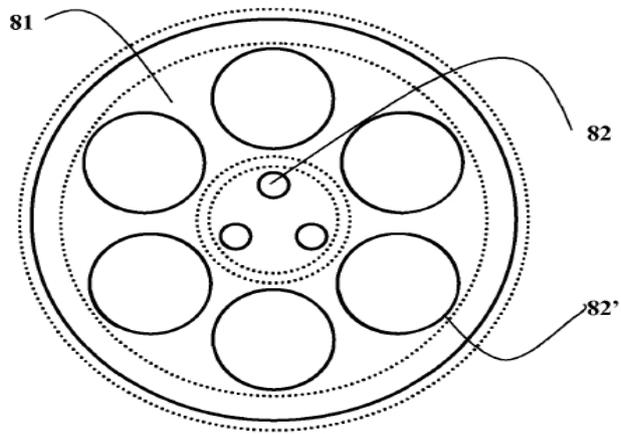


FIG. 8a

154. According to the defendant's submission, Fig. 8b below shows the *refractive index profile* of the output fibre shown in dashed lines in Fig. 8a:

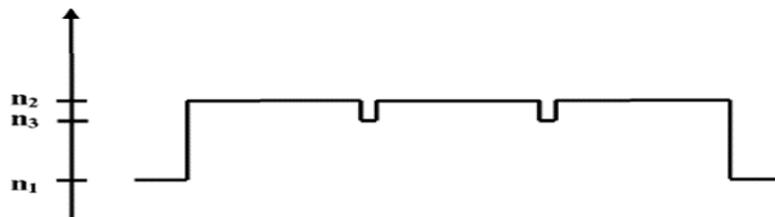


FIG. 8b

155. In this example, two different types of input fibres with different diameters are used. The inner fibres 82 are preferably located at

an intense light source, such as a fibre laser, and the outer fibres 82' are preferably coupled to less intense laser sources, such as semiconductor lasers (e.g. diode lasers). According to D6, such an order, in which the light focus is located in the centre, offers advantages when welding metals. For example, the radiation from diode lasers can serve as a heat source to melt the metal around the joint and supply additional material, while the radiation from fibre lasers is the primary heat source for efficient joining of the metals. This method could replace the hybrid welding methods currently in use, i.e. welding with laser and non-laser methods simultaneously, with pure laser welding or, more precisely, hybrid laser welding. The present method offers a robust way of producing such efficiently coupled hybrid laser sources (para. 41).

156. In connection with the , D6 states that the solid lines indicate the collapsed end of the capillary tube with the marked cores of the input fibres and the dashed lines indicate the outer circumference and the core circumference of the output fibre (para. [0039]).

Novelty compared to D6

157. D6 does not fully disclose the subject matter of claim 6 of the patent in suit because the use of only one inner fibre is not shown in the document.

Features 6, 6.1, 6.1.1.2, 6.3 and 6.3.1 are disclosed

158. However, as the Claimant rightly does not dispute, D6, in particular with its embodiment according to Figures 8a and 8b, on which the defendant mainly relies, directly and unambiguously discloses features **6, 6.1, 6.1.1.2, 6.3** and **6.3.1**.

Feature complex 6.1.2, feature 6.2 and parts of feature 6.2.1 are disclosed

159. Contrary to what the Claimant first asserted in its rejoinder regarding the counterclaim for annulment, D6, with the embodiment shown in Figures 8a and 8b, also directly and unambiguously discloses the design of the output fibre and its

Order in comparison to the input fibre bundle according to feature complex 6.1.2, 6.1.2.1,

6.1.2.2 and 6.2, as well as parts of feature 6.2.1.

160. The features are reproduced below in context for better understanding:

[6.1.2] wobei die Ausgangsfaser einen ersten Bereich (8) mit einem Brechungsindex n_0 und einen Durchmesser umfasst, der gleich oder größer als der Durchmesser des Eingangsfaserbündels ist und

[6.1.2.1] einen oder mehrere sekundäre(n) Bereiche (7, 18) innerhalb des ersten Bereichs umfasst, wobei die sekundären Bereiche jeweils einen Brechungsindex aufweisen, der von n_0 verschieden ist,

[6.1.2.2] wobei der sekundäre Bereich mindestens einen ringförmigen Bereich (18) hohen Indexes umfasst,

[6.2] jeder der sekundären Bereiche überlagert nicht alle der Eingangsfasern,

[6.2.1] wobei der ringförmige Bereich (18) den radial äußeren Satz von Eingangsfasern, aber nicht die innere Faser überlagert

161. As the defendant correctly asserts, in connection with the embodiment initially described in Figure 7a, which shows for the first time an exemplary order of the output fibre in relation to the input fibre bundle, paragraph [0039] clearly and directly discloses that the solid lines refer to the input fibres and the dashed lines refer to the order of the output fibre. It is also disclosed there that Fig. 7b shows the refractive index profile of the output fibre. This also makes it immediately and unambiguously clear to the skilled person that Fig. 8b shows the refractive index profile of the output fibre, which is also outlined in dashed lines in Fig. 8a. This is because the relevant paragraph [0041] follows on from the embodiment shown in Figs. 7a and 7b and discloses a further alternative order of the input fibre bundle and output fibre at the splice point.

162. From a combined view of Fig. 8a and Fig. 8b, the skilled person can see that the output fibre has a first region with a refractive index n_1 or n_3 , the diameter of which is greater than the diameter of the input fibre bundle (cf. outer dashed line (feature 6.1.2)).

163. Fig. 8a shows a first secondary region (the central core) and a second secondary region (the annular region) of the output fibre, each of which is located within the first region with refractive index n , wherein the central

core and the annular region having a relatively high refractive index n_2 that is different from n_1 and n_3 , respectively, as can be seen in Figure 8b. This discloses the **features 6.1.2.1 and 6.1.2.2** are disclosed.

164. **Feature 6.2** is also disclosed. The secondary regions of the output fibre do not overlap all input fibres. The ring-shaped secondary region only overlaps the outer input fibres, but not the inner fibres. The other secondary region, as a central core, only overlaps the inner fibres, but not the outer fibres.

No direct and clear disclosure of only one inner fibre (parts of feature 6.2.1 and feature 6.1.1)

165. In the embodiment according to Figures 8a and 8b, however, **feature 6.2.1** is only disclosed to the extent that the secondary ring-shaped area of the output fibre overlaps the radially outer set of input fibres and not the inner area, which does, however, contain several input fibres.

166. Thus, feature 6.2.1 is not fully disclosed in this context because, in the example according to Fig. 8a, three and not just a single inner fibre is not overlaid by the ring-shaped region. In contrast, D6 does not contain a direct and unambiguous disclosure that the output fibre shown in Fig. 8a can also be used for the design of the input fibre bundle according to Fig. 1 and/or Fig. 7a (see below).

167. **Feature 6.1.1.1**, according to which the input fibre bundle may only have one inner input fibre when correctly interpreted, is therefore also not directly and unambiguously disclosed in the embodiment according to Figures 8a and 8b.

168. Feature 6.1.1.1 is disclosed in connection with the description of Fig. 1 and Fig. 7a of D6.

169. This is because the order of seven holes shown there provides seven input fibres for corresponding laser connections for coupling the light into the output fibre. This discloses that the inner hole of Fig. 1 and Fig. 7a of D6 is provided only for a single inner/central input fibre of the input fibre bundle.

170. However, the skilled person cannot directly and unambiguously infer from D6 that, in a possible order of the input fibres according to Fig. 1 or Fig. 7a, the design of the output fibre disclosed only in connection with Figs. 8a and 8b should be used. This is because its use is only disclosed in connection with the use of several inner input fibres with different diameters compared to the outer fibres. In connection with Fig. 1 and Fig. 7a, on the other hand, the use of a different output fibre is proposed, which has only a central core/area with a relatively high refractive index that couples all seven input fibres of the input fibre bundle. A combination and/or modification of the figures not shown is not permitted in the context of the novelty examination.

Feature 6.3.2 (control of the lasers)

171. It can therefore be left open whether the Claimant's view is correct that **feature 6.3.2** and the independent control of the outputs of the (multiple) lasers for selecting or adjusting the beam profile from the output fibre are not directly and unambiguously disclosed, because the embodiment cited by the defendant according to Figs. 8a/8b emphasises exclusively the simultaneous activation of the laser sources mentioned therein in order to maximise performance and, contrary to the defendant's view, a person skilled in the art would not automatically infer independent control of the various lasers.

3. Inventive step based on D6

172. Based on D6, the subject matter of claim 6 of the patent in suit is also based on an *inventive step*.

Legal principles

173. A valid European patent is granted if its subject matter is based on an inventive step, among other requirements. A claimed invention is inventive if it is not obvious to a person skilled in the art, taking into account the state of the art (Art. 56 EPC).

174. The appropriate starting point for assessing inventive step is not limited to the closest prior art. Since there may be several ways to

achieve the subject matter of the claimed invention, there may also be several starting points. The decisive factor is whether such a starting point is a suitable starting point that the relevant skilled person would consider when faced with the problem to be solved (see Central Chamber Munich, decision of 16 July 2024, UPC_CFI_14/2023, para. 8.6; Central Chamber Paris, decision of 21 January 2025, UPC_CFI_311/2023, para. 57). In this regard, a solution such as that claimed is regularly obvious if the skilled person, starting from a suitable starting point in the prior art, would be motivated (i.e. would have a reason) to consider the solution and implement it as the next step (Court of Appeal, decision of 25 November 2025, UPC_CoA_528/2024, Amge/Sanofi; decision of 25 November 2025, UPC_CoA_464/2024, Meril/Edwards).

175. The burden of proof and the presentation of evidence regarding the facts establishing the invalidity of the granted patent (cf. on the distribution of the burden of proof in the case of amended claims after the granted version has been declared invalid: Local Division Mannheim, decision of 3 December 2025, UPC_521/2024, para. 104 et seq.), as well as other circumstances that argue for invalidity or revocation, lies with the plaintiff in nullity proceedings (Art. 54 and 65(1) of the UPC Agreement, R. 44(e)-(g), 25.1(b)-(d) RoP 44(e)-(g), 25.1(b)-(d) R.P.). Even if proof of certain facts may be required if they are disputed, the assessment of the relevant facts and circumstances is a question of law (see Court of Appeal, decision of 25 November 2025, UPC_CoA_464/2024, para. 6 - Meril/Edwards).

Inventive step based on D6

176. Measured against this, the subject matter of claim 6 of the patent in suit based on D6 is based on an inventive step

Objective task of the patent in suit

177. As already explained, the objective task of patent claim 6 is to provide an improved fibre optic laser device that avoids free-space optics, in particular for generating a customised, uneven laser light distribution on a workpiece.

D6 as a realistic starting point

178. Document D6 is therefore fundamentally a realistic starting point that a person skilled in the art who had set themselves the objective task of the patent in suit as formulated above would have consulted.
179. D6 relates to the same technical field, namely fibre optic combination devices, and aims to provide an improved device for combining radiation from multiple fibre sources into a single output fibre, because such lasers have many attractive properties that are suitable for various industrial applications. D6 therefore relates to the specific technical field that is relevant to the objective problem to be solved.

No reason or motivation based on D6 to apply the output fibre according to Fig. 8a to input fibre bundles with only one inner fibre

180. However, based on D6, the skilled person had no reason or motivation, either at the assumed effective priority date of the patent in suit nor at the time of filing, to apply the design of the output fibre disclosed in D6 only in connection with the embodiment according to Figs. 8a and 8b to input fibre bundles having only one inner input fibre, and thus to further develop the subject matter disclosed in D6 in the direction of the specifications of features 6.1.1.1 and 6.2.1 of claim 6 of the patent in suit.
181. Input fibre bundles with only one inner fibre are disclosed in D6 as an alternative embodiment, but there is no suggestion for an application of the output fibre according to Fig. 8a in relation to these embodiments. Rather, D6 consistently discloses the use of an output fibre with only one inner core/area to receive the laser light from all input fibres. This is consistent with the teaching of D6, which focuses precisely on increasing the power emitted from the output fibre by coupling light from multiple laser sources together in a suitable manner to increase the power.
182. With regard to the design of the input fibre bundle according to Fig. 2, D6 emphasises in the description that, in contrast to Fig. 1, it is a hybrid combiner

in which the bores in the middle portion of the preform have a smaller diameter than the bores in the edge portion of the preform. This embodiment is used, for example, in laser welding. For this embodiment, only several inner input fibres are disclosed.

183. Following on from this general description of a so-called hybrid combiner, paragraph [0041] and Figures 8a and 8b disclose an embodiment which accordingly has several input fibres in the central area and is said to be advantageous for hybrid welding. Only in this context is the use of the output fibre according to features 6.1.2, 6.1.2.1, 6.1.2.2 and 6.2 of the patent in suit disclosed as advantageous.

184. In contrast, in connection with the further embodiment according to Fig. 7a, it is disclosed to couple the radiation of all input fibres of the input fibre bundle, which has an inner fibre, into (only) one core of the output fibre, as can be seen below:

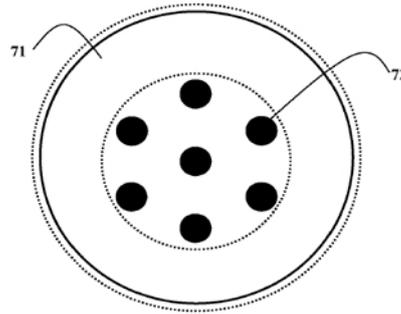


FIG. 7a

185. Fig. 7a shows a cross-section at the splice point. The solid lines indicate the collapsed end of the capillary tube 31 (number 71) with the marked cores of the seven input fibres 310 (number 72). The dotted lines indicate the outer circumference and the core circumference of the output fibre. The cores of the input fibres lie within the core circumference of the output fibre. This enables low-loss coupling of the light from all cores of the input fibres into the core of the output fibre. In this respect, there is no indication that a different design of the output fibre could be advantageous.

186. The same is disclosed in connection with the preform proposed in Fig. 1, whose central fibre also accommodates an inner fibre. In this respect, too, D6 only teaches that the cores of all input fibres lie *within the perimeter of the core of the output fibre* (cf. para. 39). This means that only one core of the output fibre is disclosed, which accommodates the laser radiation of all input fibres and thus provides a uniform profile of the output fibre. Similarly, paragraph 19 of D6 only refers to one core of the output fibre (*the core of the output fibre*).

187. Accordingly, without *hindsight*, there was no reason, at least based on D6, to use the output fibre described here in Figs. 8a and 8b for input fibre bundles with only one inner fibre and thus to modify the embodiment described in D6 in paragraph [0041] in the direction of the teaching according to features 6.1.1. and 6.2.1. of the patent in suit. Rather, such a modification would run counter to the stated objective of D6, which is to bundle light from several laser sources in order to increase power.

188. This is all the more true given that, in connection with the embodiment according to Figs. 8a/8b, D6 emphasises the use of multiple fibres in the centre of the input fibre bundle as advantageous in this context. Therefore, the embodiment described in Figures 8a/8b as a complete and functional invention and the related explanations also give no reason to apply the output fibre disclosed therein to input fibre bundles with only one central fibre.

No combination of D6 with (individually) D7 to D11 or D13

189. Accordingly, based on D6, the skilled person would not consider any further documents from the prior art in order to transfer the output fibre disclosed there only in connection with the embodiment according to Fig. 8a to an input fibre bundle with only one inner fibre, given the task of the patent in suit to avoid free-space optics, the skilled person would not consider documents D7 to D11, which use free-space optics and no input fibre bundle spliced to an output fibre, anyway.

Inventive step over D6 with WO2013/182529A1 (D13)

190. Even if the skilled person – contrary to the above – were to additionally consider D13, they would still not arrive at the subject matter of claim 6 of the patent in suit in an obvious manner.

Subject matter of D13

191. D13 discloses a fibre coupler and, in particular, an input fibre arrangement in which input fibres are guided in a cladding tube that tapers towards the splice point. D13 further discloses the coupling (splicing) of the input fibre bundle to an output fibre (D13, p. 14, lines 10 ff.).
192. D13 also describes in general terms the possibility that the output beams from the respective input fibres can be individually addressed and used at the so-called second end of the fibre coupler (cf. D13, p. 2, lines 6-28).
193. According to one embodiment, an input fibre bundle (so-called output beam bundle) can have an inner fibre and a set of radially outer fibres (cf. Fig. 3A to Fig. 3C and Fig. 1 and 2).
194. In addition, D13 generally discloses, with regard to the order of the input fibres relative to the output fibre, that a double-core fibre can be used as the output fibre – in addition to other variants not covered by claim 6 of the patent in suit – in particular with a fundamental mode core embedded in a multimode core, so that central beams of the output beam 14 are coupled into the inner core and the remaining beams into the surrounding core. Instead of a double core, it is also possible to use a central core with these surrounding rings, each of which is coupled into one or more beams. The beam can then be guided separately in the core and the rings (D13, p. 14, lines 17-23).

Inventive step based on D6

195. Even then, the skilled person cannot arrive at the subject matter of claim 6 of the patent in suit without inventive effort based on D6.
196. This is because, in addition to the possibility of providing an input fibre bundle with an inner fibre – as already disclosed in D6 (Fig. 1 and Fig. 7a) – D13 discloses on page

14, second paragraph, at least also discloses the possibility of coupling several central rays of the input fibre bundle to the central core of an output fibre, as is also proposed in D6 (Fig. 8a).

197. There is also no indication for the skilled person that – in deviation from the teaching of D6 with regard to the embodiment according to Fig. 8a – it might be advantageous to couple only one inner input fibre to the central core of the output fibre. D13 merely abstractly suggests several possible designs for an output fibre without indicating that the specific design of the output fibre claimed in claim 6 of the patent in suit, according to feature group 6, should be provided in combination with input fibre bundles with only one inner fibre. The skilled person would therefore not "break up" the embodiment disclosed as consistent in D6, even with the additional reference to D13, and modify its teaching in this direction contrary to the basic approach of D6.

Inventive step based on D6 with D7 to D11

198. Documents D7 to D11 are further removed. They use free-space optics and therefore do not disclose input fibre bundles or combiners with an output fibre spliced to an input fibre bundle. D7 to D11 therefore do not contribute to the question of interest here, namely the design of an input fibre with only one inner fibre and the output fibre arranged in relation thereto.

Inventive step based on D6 with general technical knowledge

199. Even taking into account the (alleged) general technical knowledge, the subject matter of claim 6 of the patent in suit is based on an inventive step starting from D6.
200. The Chamber can leave open the question of whether the independent controllability of a plurality of lasers according to **feature 6.3.1** was obvious to a person skilled in the art at the time of filing the patent application.
201. Even if this is assumed in favour of the defendant, the subject matter of claim 6 of the patent in suit would still not be obvious based on D6. The defendant, who bears the burden of proof, has not presented any facts from which it can be concluded that the skilled person would have arrived at the combination of D6 with general technical knowledge in

obviously arrived at a design for the input fibre bundle according to **features 6.1.1.1 and 6.2.1** (only one inner fibre) while retaining an output fibre according to feature groups 6.1.2 and 6.2. In particular, such technical knowledge does not result, as explained above, from the citations D6 and D13 submitted by the defendant, on which it relies in this respect. The fact that the patent in suit describes input fibre bundles with only one inner fibre as such as being known does not lead to any other conclusion. This does not indicate that it was generally known to those skilled in the art to use such input fibre bundles in combination with the structure of the output fibre claimed in claim 6 of the patent in suit.

D. LITERAL PATENT INFRINGEMENT

202. Based on the above interpretation, the contested embodiments make direct literal use of the teaching of claim 6 of the patent in suit.
203. Insofar as the claimant does not dispute the realisation of the features of claim 6 of the patent in suit, this is not based on an incorrect interpretation or inaccurate factual assumptions.
204. Furthermore, features 6.1.1, 6.1.1.1, 6.1.2, 6.2 and 6.3.1 are also realised.

Input fibre bundle and plurality of lasers

205. The contested embodiments fulfil **features 6.1.1, 6.1.1.1 and 6.3.1**. When interpreted correctly, claim 6 of the patent in suit does not require the use of at least three lasers or an actual connection of each of the input fibres intended for the technically sensible guidance of laser light to such a laser. Therefore, contrary to the defendant's opinion, optical devices that only have two laser sources, one of which is connected to the inner fibre and one to one of the outer fibres of the input fibre bundle, also fall under the aforementioned characteristics.

Same diameter of input fibre bundle and output fibre

206. The contested embodiments also fulfil **feature 6.1.2**. The output fibre has a diameter which – within the meaning of feature 6.1.2 – is in any case equal to the diameter of the input fibre bundle.
207. Contrary to the defendant's opinion, the relevant reference point is the diameter of the input fibre bundle of the contested embodiments, including only the first outer set of input fibres (coloured blue and orange in the Claimant's illustration). The other six outer fibres (marked brown in the Claimant's illustration) are not taken into account when measuring the diameter of the input fibre bundle. This is because they are not intended for coupling laser light into the spliced output fibre, but, according to the defendant's own submission, serve additional functions that lie outside the scope of the patent in suit.
208. Insofar as the defendant asserted in its rejoinder in the infringement proceedings that [...], this does not lead to a different assessment.
209. The drawing of the contested embodiment submitted by the defendant shows that [...].
210. This is consistent with the functions that the defendant attributes to the outermost six fibres. This is because [...], which, however, lies outside the scope of the patent in suit.
211. With regard to the relevant order of the central input fibre and the surrounding (first) six outer input fibres of the contested embodiment, the values specified by the defendant itself prove the realisation of feature 6.1.2, even when applying the strictest standards.
212. According to its own measurements, there are also infringing embodiments in which the diameter of the output fibre is mathematically/geometrically exactly equal to or greater than that of the input fibre bundle, [...]. This is sufficient to assume a direct infringement of the patent within the meaning of the wording.
213. Irrespective of this, however, contested embodiments of feature 6.1.2 are used in which the diameter of the input fibre bundle is, in individual cases, mathematically/geometrically slightly above that of the output fibre within the value ranges specified by the defendant. The

minor fluctuations reported by the defendant prove that these are insignificant from a technical functional point of view and do not call into question an "equal diameter" within the meaning of claim 6 of the patent in suit.

214. The defendant does not dispute that the contested embodiment, due to its uniformly adjusted diameters of the input fibre bundle and output fibre (with the exception of minor fluctuations), is capable of coupling the incoming laser light predominantly to the output fibre to generate various beam profiles (core beam, ring beam and a combination thereof).
215. Accordingly, if at all, in individual cases, any shortfall in the diameter of the output fibre compared to the diameter of the input fibre bundle is caused at most by a slightly "protruding" outer fluorine-doped *cladding* of the outer input fibres, which is not intended to conduct light, but – on the contrary serves to reflect the laser beams in the direction of the first cladding area and the light-conducting cores of the input fibres. However, these areas are covered by the output fibre and can therefore couple the laser light conducted in them into the output fibre.
216. Insofar as the defendant claimed for the first time in the oral hearing – which was disputed by the Claimant and objected to as belated – that the laser light guided into the cores of the input fibres of the contested embodiments would be in particular amplified by a structure of the input fibres tapering towards the splice point and the resulting change in the angle of the laser radiation, is guided at the splice point to approximately 40% in *the cladding* of the input fibres of the contested embodiment, this does not lead to a different assessment.
217. This is because the defendant did not simultaneously dispute that the fluorine-doped outer cladding edge limiting the input fibres of the contested embodiment has a refractive index that is even lower than that of the first cladding region. As intended, any light passing from the cores of the input fibres into the first cladding region is reflected at the interface between the outer cladding edge and the first cladding region of the input fibres and is thus, in any case, predominantly guided in the first cladding region.

218. However, as already explained, even according to the defendant's own specifications, this first cladding region of the input fibres is covered by the output fibre in such a way that the latter can couple the vast majority of the laser light entering via the first cladding region of the input fibres. Accordingly, the defendant has not disputed that the contested embodiment can provide the ring profile it advertises in a technically usable manner through the diameter ratios selected at the splice point.

219. The Chamber therefore did not need to obtain expert opinions on the different values for the diameters of the contested embodiment presented by the parties.

The inner core of the output fibre does not overlap all input fibres

220. Finally, the contested embodiments also make use of **feature 6.2**.

221. In favour of the defendant, it can be assumed that the inner core of the output fibre, as a further secondary area, always has a diameter [...] that is greater than the diameter of the central input fibre, which is always [...], which is why the inner core of the output fibre also protrudes into the area of the outer input fibres, which is disputed by the Claimant in factual terms. In this respect, too, the Chamber did not need to obtain an expert opinion.

222. As the Claimant correctly argues, even such an (alleged) overlap would only be minor in the area of the limiting fluorine-doped outer *cladding* of the outer input fibres, which, as already explained, serves precisely to reflect and not to guide laser light.

223. The defendant itself presented this technical function of an outer *cladding* limiting an optical fibre in the context of the counterclaim for annulment (statement of defence of 13 March 2025, page 24, para. 70). Nevertheless, laser light that slightly passes from the outer input fibres into the inner ring core of the output fibre is therefore not a coupling of the same as intended and thus not an "overlay" within the meaning of feature 6.2.1.

224. As explained in the interpretation, claim 6 of the patent in suit does not require the completely lossless coupling of laser light into the different areas of the output fibre. Accordingly, the defendant has not disputed that, despite the possible slight leakage of laser light from the outer input fibres into the central core of the output fibre, the order of the output fibre with an annular and a central secondary region, each delimited by a fluorine-doped *cladding*, can produce a separate ring-shaped and central beam profile for technically meaningful use.

E. LEGAL CONSEQUENCES

BASIC SCOPE OF CLAIMS

225. The defendant undisputedly commits the acts of infringement complained of in the action with the contested embodiment in the territories of the relevant UPCA member states. This infringement (Art. 25(a) UPC Agreement) justifies, in principle, the injunction (Art. 63(1) UPC Agreement), the remedial measures of recall, final removal and destruction (Art. 64(1), (2)(b), (d) and (e) UPC Agreement) and the order to provide information (Art. 67(1) UPC Agreement and Art. 68(3)(a)(b) UPC Agreement in conjunction with R. 191 sentence 1 alternative 2 RoP; cf. Local Division Mannheim, decision of 11 March 2025, UPC_CFI_159/2024, Hurom v NUC Europe, paras. 103, 121) and the determination of damages (Art. 68(1) of the UPC Agreement), in particular within their respective geographical scope, to the extent awarded here.

226. However, with the exception of the claim for injunctive relief and the claim for provisional damages, the claims asserted were to be limited to acts committed on or after 5 December 2021 and the action was to be dismissed in all other respects. For the period up to and including 4 December 2021, the claims asserted are excluded on the basis of [...].

227. [...]

228. [...]

229. [...]

230. Prior to this date, the Claimant is prevented from asserting claims against the defendant for infringement of patent claim 6 on the basis of [...] without the Chamber having to decide what effects [...] has (additionally) in detail under the relevant national law in the respective contracting states, in particular whether [...].

Individual claims

231. Apart from this temporal restriction to actions from 5 December 2021 onwards, the Claimant is entitled to the vast majority of the claims asserted.
232. The plaintiff in an infringement action may, as has been done in part here, specify in detail in its applications what measures the defendant must take to withdraw the infringing products from the market, remove them permanently from the market and destroy them, and specify the evidence to be submitted in this regard (see Court of Appeal, order of 14 October 2025, UPC_CoA_699/2025, Kodak v. Fujifilm, para. 44). However, the requested unconditional submission of this evidence to the court was also not granted. There is no justifiable interest in this, except in the context of possible enforcement proceedings. Furthermore, like the claim for removal, the recall is limited to commercial recipients, as private end consumers are not part of the distribution channels (see local division Düsseldorf, decision of 3 July 2024, UPC CFI 7/2023, GRUR-RS 2024, 17732 para. 143).
233. In addition, the claimant can in any case demand the provision of information and accounting in an electronically evaluable form if, as in this case, the defendant does not object to such an application on its merits. In such a case, the court can assume that the defendant, as is customary nowadays, keeps the relevant information in electronic form anyway and that transmitting the information owed to the Claimant in this form would therefore not be difficult or otherwise unreasonable for it, which is why it agrees to this.
234. Furthermore, the defendant has not put forward any reasons why the requested measures should be disproportionate or otherwise excluded (Art. 64(4) UPC Agreement).

235. Taking into account the circumstances of the individual case, the Chamber sets the deadline for compliance with the order to provide information at six weeks, starting from the date of service of the respective enforcement notice on the defendant. In view of the scope of the information and the period concerned, this period appears to be sufficient and reasonable. The same applies to compliance with the obligation to recall, permanently remove and destroy the infringing products.

Applicable law

236. The Mannheim local division has already decided which acts of infringement are subject to the national substantive law of the UPC Contracting States or the substantive law of the UPC Agreement (see decisions of 11 March 2025, UPC_CFI_159/2024, UPC_CFI_162/2024 and of 2 April 2025, UPC_CFI_365/2023). With regard to acts committed before the entry into force of the UPC Agreement, the parties have not argued that the applicable substantive national law would lead to a different result. The exact point in time from which negligence is to be assumed under the applicable substantive national law prior to the entry into force of the UPC Agreement can be left to the proceedings under R. 125 et seq. RoP, because this only concerns the amount of damages (see LD Mannheim, decisions of 11 March 2025, UPC_CFI_159/2024, UPC_CFI_162/2024, Hurom v NUC).

Provisional damages

237. The claim for provisional damages is partially unfounded.
238. The claimant bases its application for provisional damages on the costs it incurred as a result of the infringement action (€115,000) and the costs (€115,000) it had to incur to purchase a copy of the contested embodiment.
239. The application for a provisional decision on costs in the amount of €115.00 is rejected. The claimant has not demonstrated in a comprehensible manner why it needs a provisional decision on costs in the present proceedings prior to the final and binding decision in order to enforce or defend its rights in the further course of the proceedings. The Chamber therefore exercises its discretion (Art. 69 UPC Agreement, R.

118(5), R. 119, R. 150(2) RoP.) not to award provisional damages in the amount of the costs incurred by the infringement action.

240. However, the claimant was provisionally awarded damages of €115,000 for the purchased copy of the contested embodiment because it needed it for investigation purposes in preparation for the legal dispute and it would be unreasonable, in view of the patent infringement committed, to deny it reimbursement of the costs of purchasing a patent-infringing item until a decision on the amount of damages or a subsequent decision on costs had been made. In this respect, the defendant must satisfy the claim within two weeks of service of the enforcement notice.

F. PENALTY CLAUSE

241. The Chamber considers the amounts of the penalty imposed, taking into account all the circumstances of the individual case, to be both sufficient to compel the defendant to comply with the conduct obligations, if necessary, and appropriate. In this context, it had to be taken into account that the amount cannot be increased retroactively for infringements committed (see Court of Appeal, order of 14 October 2025, UPC_CoA_699/2025, Kodak v Fujifilm). Therefore, a penalty payment must be provided for that is also sufficient in cases where the first infringement is serious, e.g. the deliberate destruction of books and documents in order to make it impossible to provide information. According to the aforementioned case law of the Court of Appeal, despite the threat of a specific daily penalty payment, it is possible to deviate from this in favour of the party affected by the enforcement (see Court of Appeal, order of 14 October 2025, UPC_CoA_699/2025, para. 42, Kodak v Fujifilm). Accordingly, in the case in dispute, the Chamber refrained from prefixing the words "up to" to the respective penalties, even though it cannot see any difference in substance.

G. COSTS

242. The decision on costs is based on Art. 69(1) of the UPC Agreement, R. 118.5 of the RoP for both the infringement action and the counterclaim for annulment.

243. In the case in dispute, it is necessary and appropriate to order the defendant to bear the entire costs of the legal proceedings. This allocation of costs corresponds to the economic scope of the mutual defeat. Insofar as the claims – with the exception of injunctive relief and provisional damages – were only awarded for acts committed from 5 December 2021 onwards – and not, as requested, for acts committed from 4 April 2018 onwards – the provisional damages claimed were partially dismissed and the Claimant did not request the court to submit evidence of the destruction, removal and recall, this constitutes an economically insignificant partial defeat, which nevertheless justifies the imposition of all costs on the defendant.

H. AMOUNT IN DISPUTE

244. After hearing the parties, the value in dispute for the entire proceedings is set at €2,000,000 (€1,000,000 for the infringement claim and €1,000,000 for the counterclaim for annulment).

I. ENFORCEABILITY

245. The court has discretionary power when deciding on security for enforcement. In exercising its discretion, the court must take into account the circumstances of the individual case and weigh up the interests of the parties concerned. In the present case, the court exercises its discretion not to make enforceability dependent on the provision of security for enforcement.

246. The defendants have not put forward any reasons why the plaintiff's funds should not be sufficient to compensate for any damage caused by enforcement. Nor have the defendants claimed that the plaintiff will not be prepared to meet his obligation to pay damages. Apart from that, no unreasonable burden is apparent from the enforcement of the damages. Accordingly, the defendants have not opposed the Claimant's application not to make the enforcement of the judgment dependent on security.

DECISION

I. The defendant is prohibited from

manufacture, offer, place on the market, use or import optical devices

in Germany, Finland, France, Italy, the Netherlands, Austria and/or Romania, or to offer, market, use, import or possess them for the aforementioned purposes.

comprising an optical combiner comprising a bundle of input fibres spliced to an output fibre, wherein the output fibre comprises a first region having a refractive index n_0 and a diameter equal to or greater than the diameter of the input fibre bundle, and one or more secondary regions within the first region, wherein the secondary regions each have a refractive index different from n_0 , wherein each of the secondary regions does not overlap all of the input fibres, wherein the secondary region comprises at least one annular region of high index, wherein the input fibre bundle comprises an inner fibre and at least one radially outer set of input fibres, and wherein the annular region overlaps the radially outer set of input fibres but not the inner fibre, and by a plurality of lasers, each laser being arranged to provide a laser output to a respective input fibre, wherein the laser outputs of the lasers are independently controllable to select or adjust the beam profile of a laser beam output from the output fibre.

- Claim 6 (direct infringement) –

- II. Within six weeks of delivery of the respective enforcement notice, the defendant shall
1. The Claimant is to be informed of the extent to which it has committed the acts specified in Section I since 5 December 2021, in the form of an orderly, comprehensible, electronically evaluable list in electronic form, structured by month of the calendar year and by the devices identified in section I by their type designations, which list shall contain the following information:
 - a) the origin and distribution channels of the products;
 - b) the identity (names and addresses) of all third parties involved in the manufacture or distribution of the products;
 - c) the quantities of devices manufactured, offered, delivered, received or ordered and the respective purchase and sale prices paid for the devices, stating the respective date of the offer, delivery or order and the respective manufacturer, purchaser, customer or recipient of the offer;
 - d) the advertising carried out, broken down by advertising media, its distribution, the distribution period and the distribution area, including evidence of these advertising activities;

e) the costs incurred, broken down by individual cost factors, and the profits generated;

whereby copies of the relevant supporting documents (namely invoices or, alternatively, delivery notes) must be submitted as evidence of the information provided, whereby details requiring confidentiality may be blacked out outside the data subject to the obligation to provide information and notification;

2. to recall from the distribution channels the devices referred to in section I that have been placed on the market since 5 December 2021 as a result of the actions referred to in section I, by informing the third parties from whom the devices are to be recalled that this court has determined that the devices infringe European Patent EP 2 951 625, whereby the defendant has made a binding commitment to the third parties to reimburse the costs incurred, in particular purchase prices paid, to reimburse the packaging and transport costs incurred and the customs and storage costs associated with the return, and to take back the devices;
3. to permanently remove the devices referred to in Section I, which have been placed on the market since 5 December 2021 through the actions referred to in Section I, from the distribution channels by requesting the defendant to ask its commercial customers to cancel all orders or orders relating to the devices referred to in Section I and, in the event that commercial customers refuse to return the devices recalled in accordance with Section II.2, to assert any existing contractual claims for restitution in writing, under threat of legal enforcement;
4. to destroy or have destroyed at its own expense the devices referred to in Section I that are in its direct or indirect possession or ownership in Germany, Finland, France, Italy, the Netherlands, Austria and/or Romania or that have been repossessed in accordance with Sections II.2 or II.3;

and to provide the Claimant with written proof of the measures it has taken in accordance with Sections II. 2., II. 3 and II. 4.

- III. The defendant is ordered to pay the claimant €115,000 in provisional damages within two weeks of service of the enforcement notice.
- IV. It is hereby determined that the defendant is obliged to compensate the Claimant for all damages exceeding those to be compensated in accordance with Section III, which have been or will be incurred by the Claimant as a result of the actions described in Section I committed since 5 December 2021.
- V. In the event of a breach of the above Sections I to III, the defendant shall pay a penalty of
 - €300,000 per device for each violation of Section I,

- €10,000 for each day of a violation of Sections II.2 to II.4,
- €5,000 for each day of a violation of Section II. 1
- €5,000 for each day of a breach of section III.

to the court.

- VI. The action is dismissed in all other respects.
- VII. The counterclaim for annulment is dismissed.
- VIII. The defendant shall bear the costs of the legal proceedings.
- IX. The orders under I., II. and III. shall only be enforceable once the claimant has informed the court which part of the orders it intends to enforce, this notification has been served on the defendant and – insofar as necessary for the enforcement of the respective order – a certified translation of the orders into the official language of the Member State of the contract in which enforcement is to take place has been submitted by the claimant and served on the defendant.
- X. The value in dispute for the entire proceedings is set at €2,000,000.

Issued in Mannheim on 24 February 2026

NAMES AND SIGNATURES

| | |
|---|--|
| <p>Presiding Judge Tochtermann</p> | <p>PeterMichael Dr. Tochtermann</p>  <p>Digitally signed by Peter Michael Dr. Tochtermann Date: 23 February 2026 14:00:34</p> |
| <p>Legally qualified judge Sender</p> | <p>Tobias Sender</p>  <p>signed Digital by Tobias Sender Date: 16 February 2026 07:54:04 +01'00'</p> |
| <p>Legally qualified judge Kupecz</p> | <p>AndrásFerenc Kupecz</p>  <p>Digitally signed by András Ferenc Kupecz Date: 16 February 2026 11:00:21</p> |
| <p>Technically qualified judge Wilhelm</p> | <p>StefanMaria Wilhelm</p>  <p>Digitally signed by Stefan Maria Wilhelm Date: 16 February 2026 10:56:46</p> |
| <p>For the Deputy-Registrar: Kranz, Clerk LD Mannheim</p> | <p>HANNAH EMILIASCHICK</p>  <p>Digitally signed by HANNAH EMILIA SCHICK Date: 23 February 2026 14:58:14</p> |

Information on the appeal:

Any party whose applications have been rejected in whole or in part may appeal against this decision to the Court of Appeal within two months of the decision being served (Art. 73(1) UPC Agreement, R. 220.1(a), 224.1(a) RoP).

Information on enforcement (Art. 82 UPC Agreement, Art. 37(2) EPGs, R. 118.8, 158.2, 354, 355.4 RoP).

A certified copy of the enforceable decision shall be issued by the Deputy-Registrar on application by the enforcing party, Rule 69 RegR.