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# Datasheet for the decision of 23 November 2017

**Case Number:** T 0009/14 - 3.4.02

**Application Number:** 10157209.7

**Publication Number:** 2253990

**IPC:** G02C7/02

**Language of the proceedings:** EN

**Title of invention:**
Prescription lens and method of making same

**Applicant:**
Polylite Taiwan Co., Ltd.

**Relevant legal provisions:**
EPC Art. 84

**Keyword:**
Clarity of claims - (no, all requests)

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**Case Number: T 0009/14 - 3.4.02**

# D E C I S I O N
## of Technical Board of Appeal 3.4.02
## of 23 November 2017

| | |
|---|---|
| **Appellant:** (Applicant) | Polylite Taiwan Co., Ltd.<br>29-32, Hsu-Tzu Kang, Ta-Yuan Hsiang,<br>Tao-Yuan County (TW) |
| **Representative:** | Becker Kurig Straus<br>Patentanwälte<br>Bavariastraße 7<br>80336 München (DE) |
| **Decision under appeal:** | **Decision of the Examining Division of the European Patent Office posted on 19 June 2013 refusing European patent application No. 10157209.7 pursuant to Article 97(2) EPC.** |

**Composition of the Board:**

| | |
|---|---|
| **Chairman** | R. Bekkering |
| **Members:** | F. J. Narganes-Quijano |
| | T. Karamanli |

## Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal against the decision of the examining division refusing European patent application No. 10157209.7.

II. In its decision the examining division held with respect to the requests then on file that

- claim 1 of the main and the fourth auxiliary requests did not satisfy the requirements of Article 123(2) EPC,
- claim 1 of the first auxiliary request did not involve an inventive step (Article 56 EPC), and independent claims 6 and 7 of the first auxiliary request were not new (Article 54(1) EPC), and
- claim 1 of the second and the third auxiliary requests was not clear (Article 84 EPC).

III. With the statement setting out the grounds of appeal dated 10 October 2013, the appellant filed sets of claims according to a main request and first and second auxiliary requests. The appellant requested that the decision under appeal be set aside and a patent be granted.

IV. In reply to the preliminary opinion expressed by the board in a communication annexed to a summons to oral proceedings, the appellant filed with its letter dated 23 October 2017 two sets of amended claims as a third and a fourth auxiliary request.

V. Oral proceedings were held before the board on 23 November 2017.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request, filed with the statement setting out the grounds of appeal dated 10 October 2013, or, in the alternative, of one of the first or second auxiliary requests, both filed with the statement setting out the grounds of appeal dated 10 October 2013, or of the third or fourth auxiliary requests, both filed with the letter dated 23 October 2017.

At the end of the oral proceedings the chairman announced the decision of the board.

VI. Claim 1 and dependent claim 4 of the main request read as follows:

" 1. A prescription lens (200, 400, 500, 600, 700) having a spherical front lens surface (216), a rear lens surface (218), and a lens body (210) defined between the spherical front lens surface (216) and the rear lens surface (218), wherein the lens body (210) has an optical area (211), a transition zone (213) surrounding the optical area (211) and an edge portion (215) surrounding the transition zone (213), wherein the optical area (211) is adapted for providing a lens power according to a prescription of a lens for a wearer, wherein a thickness (Te) of the edge portion (215) is constant and thinner than a maximum lens thickness (Ta) of the optical area (211), wherein the lens body (210) has a geometric center (212, 412, 512) and an optical center (214, 414, 514) corresponding to the center of the optical area (211)."

" 4. The prescription lens (200, 400, 500, 600, 700) according to any of the proceeding [*sic*] claims,

wherein the spherical front lens surface (216) is configured to match the frame curve of a frame."

Claim 1 of the first auxiliary request reads as follows:

" 1. A method for manufacturing a prescription sunglass lens (200, 400, 500, 600, 700), being characterized in that comprising [*sic*] the steps of:

(a) obtaining information of a prescription sunglass lens (200, 400, 500, 600, 700) and information of a frame to accommodate the prescription sunglass lens (200, 400, 500, 600, 700), wherein the information of the prescription sunglass lens (200, 400, 500, 600, 700) comprises a lens power, an optical area (211) and a spherical front base curve, and wherein the information of the frame comprises a frame curve; wherein the optical area (211) is adapted for providing the lens power according to the prescription of a lens for a wearer;

(b) calculating the maximum lens thickness (To) of the prescription sunglass lens (200, 400, 500, 600, 700) at the optical area (211) according to the information of the prescription sunglass lens (200, 400, 500, 600, 700); wherein the spherical front base curve of the prescription sunglass lens (200, 400, 500, 600, 700) matches the frame curve of the frame;

(c) selecting a lens blank according to the calculated maximum lens thickness (To) at the optical area (211), the information of the prescription sunglass lens (200, 400, 500, 600, 700) and the information of the frame; and

(d) processing the selected lens blank by injection, casting and cutting so as to obtain the prescription sunglass lens (200, 400, 500, 600, 700) that has a transition zone (213) surrounding the

optical area (211) and an edge portion (215) surrounding the transition zone (213) such that the thickness (Te) of the edge portion (215) is constant and substantially thinner that [*sic*] the maximum lens thickness (Ta) [*sic*] of the optical area (211);

characterized in that the prescription of the lens is adjusted for proper vision in the as worn position."

Claim 1 of the second auxiliary request is identical to claim 1 of the first auxiliary request.

Claim 1 of the third auxiliary request reads as follows:

" 1. A method for manufacturing a prescription sunglass lens (200, 400, 500, 600, 700), comprising the steps of:

(a) obtaining information of a prescription sunglass lens (200, 400, 500, 600, 700) and information of a frame to accommodate the prescription sunglass lens (200, 400, 500, 600, 700), wherein the information of the prescription sunglass lens (200, 400, 500, 600, 700) comprises a lens power, an optical area (211) and a spherical front base curve, and wherein the information of the frame comprises a frame curve characterized with an angle and tilt of the frame; wherein the optical area (211) is adapted for providing the lens power according to the prescription of a lens for a wearer;

(b) calculating the maximum lens thickness (To) of the prescription sunglass lens (200, 400, 500, 600, 700) at the optical area (211) according to the information of the prescription sunglass lens (200, 400, 500, 600, 700); wherein the spherical front base curve of the prescription sunglass lens (200, 400, 500, 600, 700) matches the frame curve of the frame;

(c) selecting a lens blank according to the calculated maximum lens thickness (To) at the optical area (211), the information of the prescription sunglass lens (200, 400, 500, 600, 700) and the information of the frame; and

(d) processing the selected lens blank so as to obtain the prescription sunglass lens (200, 400, 500, 600, 700) that has a transition zone (213) surrounding the optical area (211) and an edge portion (215) surrounding the transition zone (213) such that the thickness (Te) of the edge portion (215) is constant and substantially thinner than the maximum lens thickness (To) of the optical area (211);

characterized in that the prescription of the lens is adjusted for proper vision in the as worn position."

Claim 1 of the fourth auxiliary request reads as follows:

" 1. A method for manufacturing a prescription sunglass lens (200, 400, 500, 600, 700), comprising the steps of:

(a) obtaining information of a prescription sunglass lens (200, 400, 500, 600, 700) and information of a frame to accommodate the prescription sunglass lens (200, 400, 500, 600, 700), wherein the information of the prescription sunglass lens (200, 400, 500, 600, 700) comprises a lens power, an optical area (211), a spherical front base curve, pupillary distance, distance between lenses, height and weight, optical center height, sphere power, cylinder power, axis, distance vision, and near vision, and wherein the information of the frame comprises a frame curve characterized with an angle and tilt of the frame; wherein the optical area (211) is adapted for providing

the lens power according to the prescription of a lens for a wearer;

(b) adapting the spherical front base curve of the prescription sunglass lens (200, 400, 500, 600, 700) to match the frame curve of the frame;

(c) measuring or estimating the pantoscopic tilt of the frame in degrees;

(d) obtaining information about the optical center height or the distance above the bottom most portion of the frame;

(e) determining the lens angle based on a combination of the pupillary distance, frame angle and the selected front base curve of the lens, and compensating for the axis;

(f) determining the changes in sphere and cylinder power, and compensating for the pupillary distance;

(g) calculating the actual lens surface;

(h) calculating the maximum lens thickness (To) of the prescription sunglass lens (200, 400, 500, 600, 700) at the optical area (211) according to the information of the prescription sunglass lens (200, 400, 500, 600, 700);

(i) calculating the maximum size of the optical zone;

(j) calculating a transition zone (213) and an edge portion (215);

(k) selecting a lens blank according to the calculated maximum lens thickness (To) at the optical area (211), the information of the prescription sunglass lens (200, 400, 500, 600, 700) and the information of the frame;

(d) processing the selected lens blank so as to obtain the prescription sunglass lens (200, 400, 500, 600, 700) that has a transition zone (213) surrounding the optical area (211) and an edge portion (215) surrounding the transition zone (213) such that the

thickness (Te) of the edge portion (215) is constant and substantially thinner than the maximum lens thickness (To) of the optical area (211);

wherein the prescription of the lens is adjusted for proper vision in the as worn position."

## Reasons for the Decision

1. The appeal is admissible.

2. *Main request - Clarity*

2.1 Claim 1 of the main request is directed to a prescription lens and is based on the combination of independent claim 8 as originally filed with the features of dependent claims 9 and 10 as originally filed. Dependent claim 4 refers back to the prescription lens defined in claim 1, and the claim is based on dependent claim 12 as originally filed. Thus, the board has no objection under Article 123(2) EPC.

According to claim 1, the prescription lens has, among other features, a spherical front lens surface. Dependent claim 4 requires, in addition, that the spherical front lens surface of the prescription lens "is configured to match the frame curve of a frame".

2.2 It is, however, unclear in the context of dependent claim 4 what is meant by the "frame curve" of a frame and, consequently, it is also unclear what is meant by the spherical front surface of the lens being "configured to match the frame curve" of the frame.

In particular, the frame curve of the frame may refer to the curved geometry of the global profile of the whole frame, and more particularly to the curved geometrical profile of the frame determined, as mentioned in the description of the application (page 1, lines 8 to 12, page 2, lines 21 and 22, and page 7, lines 18 to 23), by the wrap angle and the pantoscopic tilt angle of a frame of the type commonly used in sunglasses and protective eyeglasses. However, the frame curve may also refer to the geometry of the curved profile of the part of the frame receiving the lens and determined, for instance, by the base curve of the frame as also mentioned in the description (page 1, lines 27 to 29, and page 10, lines 19 to 24).

As a consequence of the lack of clarity of the expression "frame curve", it is also unclear in the context of dependent claim 4 in what sense the spherical front lens surface is configured "to match the frame curve" of the frame. Depending on which of the two meanings mentioned above is given to the expression "frame curve", the spherical front lens surface of the claimed lens can be said to match the frame curve in the sense that the spherical front lens surface is oriented in alignment with the global geometric profile of the frame, and in particular with the wrap angle and the tilt of the frame (page 11, lines 12 to 15 of the description of the application, together with Fig. 8 and the corresponding description), or in the sense that the shape of the spherical front surface of the lens - including the optically effective area of the surface or, possibly, only the peripheral edge portion of the same - is configured to match the curved profile of the part of the frame receiving the lens, and in particular to fit or match the base curve of the frame mentioned in the

description of the application (cf. page 11, lines 26 to 29).

2.3 The appellant has submitted with reference to the description of the application that a spectacle frame, and in particular a frame of the type used for sunglasses and the like, had wrap-around segments (page 1, lines 8 to 12, and page 2, lines 21 and 22), and therefore a curvature, and that the respective lenses had a front curved lens surface designed to fit the curved profile of the frame (page 1, lines 13 and 14, page 3, line 26, page 7, lines 3 and 4, and lines 14 to 24, page 10, line 4 to 7, and Fig. 8). Furthermore, according to the description the frame curve was characterized by the angle and the tilt of the frame (page 2, lines 21 and 22, and page 7, lines 18 and 19). In addition, as also mentioned in the description (page 1, lines 27 to 29), it was almost impossible for conventional prescription glasses to match a sunglass frame because this type of frames often had a relatively high value of the base curve, and the spherical front base curve of the lens of the invention was configured to match the frame curve of the frame (page 2, lines 22 and 23). Therefore, the expression "frame curve" was sufficiently clear to the person skilled in the art.

However, dependent claim 4 only refers to the "frame curve", and as already indicated in point 2.2 above and also in accordance with the appellant's submissions, the expression "frame curve" encompasses at least two different, non-equivalent concepts of the curved profile of a frame, namely the global curved profile determined by the wrap and the tilt angles of the frame, and the curved profile of the part of the frame receiving the lens and determined by the base curve of

the frame. In addition, these two aspects are independent of each other, and there is no correlation between them because a frame can present a pronounced curvature in its global profile (for instance, a relatively high value of the wrap and the tilt angles) while presenting no significant curvature in the part of the frame receiving the lenses (for instance, in the case of a frame designed to be used with lenses without or with a relatively low optical prescription), and the other way around: a frame may present a relatively high value of the base curve for receiving prescription lenses with a high base curve, while presenting no significant value of the wrap and the tilt angles. As an example, Fig. 8 of the application shows the design of a lens for a frame having a wrap angle of about 22 degrees (page 8, lines 27 to 29), and this angle is generally independent of the value selected for the base curve of the part of the frame receiving the lens. Therefore, the sole reference in dependent claim 4 to the spherical front surface of the lens matching the frame curve of the frame leaves open whether the expression "frame curve" refers to the first of these concepts, or to the second, or whether it even encompasses both of them.

2.4 In view of these considerations, the board concludes that dependent claim 4 is not clear (Article 84 EPC).

3. *First auxiliary request - Clarity*

Claim 1 of the first auxiliary request is based, *inter alia*, on claim 1 as originally filed. The claim is directed to a method of manufacturing a prescription sunglass lens and the claim requires, among other features, "obtaining [...] information of a frame to accommodate the prescription sunglass lens [...],

wherein [...] the information of the frame comprises a frame curve". In addition, claim 1 requires that the "the spherical front base curve of the prescription sunglass lens [...] matches the frame curve of the frame", this feature being based on one of the alternatives defined in dependent claim 6 as originally filed.

Thus, claim 1 refers to the "frame curve" of a frame, and to a lens having a spherical front base curve that "matches the frame curve of the frame". As already concluded in point 2 above with respect to dependent claim 4 of the main request, neither the expression "frame curve" nor the requirement that the spherical front surface of the lens, and therefore the associated spherical front base curve, "matches the frame curve" are clear. In addition, none of the remaining features of claim 1 allows for a clear interpretation of these expressions. Accordingly, claim 1 of the first auxiliary request is not clear (Article 84 EPC) for the same reasons already given in point 2 above in respect of dependent claim 4 of the main request.

4. *Second auxiliary request - Clarity*

Claim 1 of the second auxiliary request is identical to claim 1 of the first auxiliary request. Accordingly, claim 1 of the second auxiliary request is not clear (Article 84 EPC) for the same reasons given in point 3 above in respect of claim 1 of the first auxiliary request.

5. *Third auxiliary request - Clarity*

Claim 1 of the third auxiliary request differs from claim 1 of the first auxiliary request in the deletion

of some features and in the incorporation of additional features, and the claim contains the features of claim 1 of the first auxiliary request referred to in point 3 above and objected to under Article 84 EPC. When compared with claim 1 of the first auxiliary request, claim 1 of the third auxiliary request further specifies that "the information of the frame comprises a frame curve characterized with an angle and tilt of the frame". The angle and the tilt of the frame referred to in this feature appear to correspond with the wrap angle and the pantoscopic tilt angle of a curved frame mentioned in point 2.2 above. The amended feature "frame curve characterized with an angle and tilt of the frame", however, leaves open whether what is to be understood in the claimed method by the frame curve is exclusively the geometric profile determined by these two angles, or whether the frame curve encompasses, in addition, other curvature components, and in particular the base curve characterizing the curvature of the part of the frame receiving the lens. As a consequence, this amended feature is insufficient to clarify whether the spherical front base curve of the lens matches the frame curve of the frame only in the sense that the spherical front lens surface is merely oriented in alignment with the tilt and the wrap angles of the frame, or in the sense that, in addition thereto, the shape of the spherical front surface of the lens is configured to fit or match the curved profile of the part of the frame receiving the lens, and in particular to fit or match the base curve of the frame.

For these reasons, the board concludes that claim 1 of the third auxiliary request is not clear (Article 84 EPC).

6. *Fourth auxiliary request - Clarity*

Claim 1 of the fourth auxiliary request differs from claim 1 of the third auxiliary request in the deletion of some features and in the incorporation of additional features. In particular, claim 1 contains the features of claim 1 of the third auxiliary request referred to in point 3 above and objected to under Article 84 EPC, except for the fact that the feature requiring that "the spherical front base curve of the prescription sunglass lens [...] matches the frame curve of the frame" has been replaced by a method step requiring "adapting the spherical front base curve of the prescription sunglass lens [...] to match the frame curve of the frame". None of these differences affects the objection of lack of clarity raised in respect of claim 1 of the third auxiliary request.

The board therefore concludes that claim 1 of the fourth auxiliary request is not clear (Article 84 EPC).

7. Since none of the requests of the appellant is allowable, the appeal is to be dismissed.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar: The Chairman:

M. Kiehl R. Bekkering

Decision electronically authenticated