

ABSTRACT
LIGHTING DEVICE FOR A MOTOR VEHICLE

The invention relates to a lighting device (1) for a motor vehicle, comprising at least one light unit (2), for example two or more light units (2), wherein each light unit (2) comprises:

- a reflector (3) and also
- at least one light source (4) paired with the reflector (3),

wherein light from the at least one light source (4) is emitted into a region in front of the vehicle via the corresponding reflector (3) (in the installed state of the lighting device (1)), and the one or more light sources (4) is/are arranged, preferably fixedly, on at least one mounting body (5), preferably on a common mounting body (5). In accordance with the invention the reflector (3) of the at least one light unit (2), or at least one reflector (3) in the case of two or more light units (2), preferably two or more reflectors (3) of two or more light units (2), in particular preferably all reflectors (3), is/are mounted on the at least mounting body (5) so as to be pivotable about at least one axis paired with the respective reflector (3), for example a vertical axis (Z), and can be fixed in a pivoted position.

Fig. 5

We claim:

1. A lighting device (1) for a motor vehicle, comprising at least one light unit (2), for example two or more light units (2), wherein each light unit (2) comprises:

- a reflector (3) and also
- at least one light source (4) paired with the reflector (3),

wherein light from the at least one light source (4) is emitted into a region in front of the vehicle via the corresponding reflector (3) (in the installed state of the lighting device (1)), and the one or more light sources (4) is/are arranged, preferably fixedly, on at least one mounting body (5), preferably on a common mounting body (5), **characterized in that** the reflector (3) of the at least one light unit (2), or at least one reflector (3) in the case of two or more light units (2), preferably two or more reflectors (3) of two or more light units (2), in particular preferably all reflectors (3), is/are mounted on the at least mounting body (5) so as to be pivotable about at least one axis paired with the respective reflector (3), for example a vertical axis (Z), and can be fixed in a pivoted position, wherein a reflector holder (6) is provided for each pivotable reflector (3), which reflector holder(s) (6) is/are mounted so as to be pivotable with respect to the mounting body (5) about the at least one axis, for example about the vertical axis (Z), and wherein a pivotable reflector (3) is formed as a component part (7) formed separately from the reflector holder (6), which component part (7) is mounted movably on the reflector holder (6).

2. The lighting device according to Claim 1, **characterized in that** a pivotable reflector (3) is fixedly connected to the reflector holder (6) or is preferably formed in one piece with the reflector holder (6).

3. The lighting device according to Claim 1 or 2, characterized in that the reflector holder (6) can be fixed in a pivoted position on the mounting body (5) using fixing means (20), for example using at least one screw (10).

4. The lighting device according to one of Claims 1 to 3, characterized in that the component part (7) formed separately from the reflector holder (6) can be fixed on the reflector holder (6) using fixing means (20), for example using at least one screw (21).

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5. The lighting device according to one of Claims 1 to 4, characterized in that the reflector holder (6) is mounted so as to be pivotable about the vertical axis (Z) via a first bearing point (80) and a second bearing point (90), which are arranged on the mounting body (5), wherein the two bearing points (80, 90) are preferably arranged opposite one another, for example (in the installed state) in an upper and a lower region of the mounting body (5).

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6. The lighting device according to Claim 5, characterized in that the mounting body (5) has a horizontal light source mounting portion (50) for mounting the light sources (4), a vertical portion (51) extending vertically away from the horizontal light source mounting portion (51), and at least one further bearing point portion (52), which extends approximately parallel to the light source mounting portion (50) and on which the at least one bearing point (80) for the at least one reflector holder (6) is arranged, wherein the second bearing point (90) is arranged on the light source mounting portion (50).

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7. The lighting device according to Claim 5 or 6, **characterized in that** a bearing point portion (52) is provided for each reflector holder (6), wherein each bearing point portion (52) has a bearing point (80) for a reflector holder (6), wherein a bearing point portion is preferably formed as a mounting plate (52) which is separate from the mounting body (5) and which can be fixedly connected to the mounting body (5) in a region facing away from the light source mounting portion (30) of the mounting body (5).

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8. The lighting device according to one of Claims 5 to 7, **characterized in that** at least one fixing means, for example a fixing screw (10), is mounted rotatably in the at least one bearing point portion (52), by means of which fixing means (10) the reflector holder (6) can be fixed in a position pivoted about the vertical axis (Z).
9. The lighting device according to one of Claims 1 to 8, **characterized in that** the component part (7) separate from the reflector holder (6) is mounted in the reflector holder (6) so as to be displaceable in the vertical direction, wherein the component part (7) separate from the reflector holder (6) is preferably mounted on the reflector holder (6) so as to be pivotable with respect thereto about an axis, for example about the vertical axis (Z).
10. The lighting device according to Claim 9, **characterized in that** at least one fixing means, for example a fixing screw (21), is provided, by means of which fixing means (21) the component part (7) can be fixed on the reflector holder (6), preferably in a vertical portion of the reflector holder (6).
11. The lighting device according to one of Claims 5 to 10, **characterized in that** a bearing point (90) for the reflector holder (6) is formed as a cylinder extension (90), and in that the reflector holder (6) has a corresponding cylindrical opening, preferably a part-cylinder opening (91), by means of which the reflector holder (6) is mounted rotatably on the cylinder extension (90), wherein the cylinder extension (90) is preferably arranged on the light source mounting portion (50) of the mounting body (5).
12. The lighting device according to Claim 11, **characterized in that** the cylinder extension (90) is arranged on an inner face of the light source mounting portion (50) or of the bearing point portion, or the cylinder extension (90) is arranged on an outer face either of the light source mounting portion (50) or of

the bearing point portion, and the reflector holder (6) engages around the light source mounting portion (50) via the part-cylinder opening (91).

13. The lighting device according to Claim 11 or 12, **characterized in that** a bearing point (80) is formed as a part-sphere receptacle (89)/part-sphere on the mounting body (5), in particular on the light source mounting portion, or preferably is formed on the bearing point portion (52), and a part-sphere (81)/part-sphere receptacle for the first-mentioned part-sphere receptacle (89)/part-sphere is formed on the reflector holder (6), wherein the part-sphere receptacle (89)/part-sphere is preferably arranged on an inner face of the light source mounting portion (50) or of the bearing point portion.

14. The lighting device according to Claim 1, **characterized in that** the at least one reflector (3) is formed in one piece with the corresponding reflector holder (6) thereof, wherein the reflector holder (6) is mounted on a carrier element (65) so as to be pivotable with respect to the mounting body (5) about at least one axis, for example a vertical axis (Z), and wherein the carrier element (65) has a two-part design and comprises an L-shaped mounting bracket (60), which mounting bracket (60) can be attached on a light source mounting portion (50) of the mounting body (5) and is connectable to a second vertical portion (51) of the mounting body (5) extending away from the horizontal light source mounting portion (50) substantially vertically, and comprises an L-shaped mounting bracket (61), which can be fastened to a substantially vertical portion (60a) of the mounting bracket (60), and which mounting bracket (61) has a substantially horizontal retaining bracket portion (61b), on which the reflector (3) is mounted pivotably about the vertical axis (Z) and can be fixed in a pivoted position by means of a fixing means (10).

15. The lighting device according to Claim 14, **characterized in that** the retaining bracket (61) can be displaced in the vertical direction with respect to the mounting bracket (60) and can be fixed in a position using a fixing means (20),

wherein the mounting bracket (60) preferably can be attached to the light source mounting portion (50) of the mounting body (5) so as to be pivotable about a horizontal axis (Y) arranged transversely to the light exit direction.

- 5 16. The lighting device according to one of Claims 1 to 15, **characterized in that** the light sources (4) of the light units (2) each comprise at least one light-emitting diode, preferably two or more light-emitting diodes.
- 10 17. The lighting device according to one of Claims 1 to 16, **characterized in that** the vertical pivot axis (Z) of a reflector (3) runs through the light source (4).
18. The lighting device according to one of Claims 1 to 17, **characterized in that** the mounting body (5) is formed as a heat sink for the light sources (4).
- 15 19. A headlight for a motor vehicle, comprising at least one lighting device (1) according to one of Claims 1 to 18.
20. A headlight system having a left and a right headlight according to Claim 19 for producing an overall light distribution.
- 20 21. The headlight system according to Claim 20, **characterized in that** the left headlight produces the left part of the overall light distribution and the right headlight produces the right part of the overall light distribution, wherein the left and the right part of the overall light distribution preferably overlap in the
- 25 middle, as viewed in the horizontal direction.

Dated this 8th day of January 2015

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