Patent Right	Date	November 18, 2020	Court	Intellectual Property High Court, Second Division
	Case number	2020 (Ne) 10025		
- A case in which "the amount equivalent to the amount of money which would have been entitled to receive for the working of the patent invention" prescribed in Article 102, paragraph (3) of the Patent Act for the claim for compensation for damage on the ground of Patent Right 1 of the invention titled "LIGHT EMITTING DEVICE AND DISPLAY DEVICE" and Patent Rights 2 and 3 of the inventions titled "LIGHT EMITTING DEVICE, RESIN PACKAGE, RESIN MOLDED BODY, AND MANUFACTURING METHOD THEREOF" was approved.				

Case type: Compensation, etc.

Result: Partial modification of the prior instance judgment

References: Article 102, paragraph (3) of the Patent Act

Related rights, etc.: Patent No. 5177317, Patent No. 6056934, Patent No. 5825390

Judgment of the prior instance: Tokyo District Court 2017 (Wa) 27238/Judgment on February 28, 2020

Summary of the Judgment

1. This case is a case in which the first court Plaintiff asserted that import, transfer, and the like of the first court Defendant's product (liquid crystal TV set) by the first court Defendant is infringement of Patent Right 1 of the first court Plaintiff's invention titled "LIGHT EMITTING DEVICE AND DISPLAY DEVICE" and Patent Rights 2 and 3 of the inventions titled "LIGHT EMITTING DEVICE, RESIN PACKAGE, RESIN MOLDED BODY, AND MANUFACTURING METHOD THEREOF" (hereinafter, referred to as the "Present Patent Right 1" and the like, and the patent and the invention according to each of the patent rights shall be referred to as "Present Patent 1", "Present Invention 1", and the like) and made claims for injunction of the import, transfer and the like and disposal of the first court Defendant's product against the first court Defendant on the ground of Article 100, paragraphs (1) and (2) of the Patent Act and for payment of compensation for damage of the amount equivalent to the license fee prescribed in Article 102, paragraph (3) of the Patent Act on the ground of Article 709 of the Civil Code.

2. The judgment in prior instance approved fulfillment of the constituent features of Present Inventions 1 to 3 by the LED used in the first court Defendant's product (hereinafter, referred to as the "present LED"), rejected all the assertions by the first court Defendant asserting invalidation of Present Patents 1 and 2 (lack of inventive step, violation of support requirement and the like), rejected assertion of the first court Defendant asserting invalidation of Present Patent 3 (lack of novelty, lack of inventive

step, violation of clarity requirement, violation of support requirement and the like) and then, approved the claim for compensation for damage by the first court Plaintiff to the limit of 17,956,641 yen and payment of the delay damages, while it dismissed the remaining claims for compensation for damage as well as injunction and disposal. Both parties appealed against that. The first court Plaintiff did not appeal for the dismissed part for injunction and disposal.

3. This judgment approved fulfillment of the constituent features of Present Inventions 1 to 3 for the reason substantially the same as that in the judgment in prior instance, rejected all the assertions of invalidation of Present Patents 1 to 3, made judgment with the gist as follows for the amount equivalent to the license fee in Article 102, paragraph (3) of the Patent Act, and approved all the claims by the first court Plaintiff for compensation for damage claiming payment of 132,000,000 yen and the delay damages.

(1) Basis to be multiplied by license fee rate (royalty basis)

In addition to the gist and the like in Article 102, paragraph (3) of the Patent Act, in view of the circumstances that [i] the present LED was mounted on the directly under type backlight and used in the first court Defendant's product, but it should be considered that the directly under type backlight is one of main components mounted inside the first court Defendant's product which is a liquid crystal TV set and cannot be separated easily from the first court Defendant's product; [ii] performances of the LED largely influence the image quality of the liquid crystal TV, and what LED would be used and how it would be manufactured also influences manufacturing costs; and [iii] the first court Defendant sold the first court Defendant's product as a finished product utilizing the characteristics of the present LED, and in view that the first court Defendant has gained profits from the sales of the first court Defendant's product and the like, it is reasonable to calculate the amount equivalent to the license fee in Article 102, paragraph (3) of the Patent Act on the basis of the sales of the first court Defendant's product.

(2) License fee rate

[i] The first court Plaintiff did not grant a license to an LED manufacturer in the form other than cross-license in principle, and if the patent right was infringed, when replacement with the LED manufactured by the first court Plaintiff was difficult, reconciliation was made by using the license fee rate higher than 5%. In the case related to the sales of the LED bulb which infringes two patent rights including the Present Patent 1 in 2016, reconciliation was made in the court by assuming the license fee rate of 10%; [ii] Until the fiscal year of 1998, there were not a few contracts with the license fee rate of 8% or more for the semiconductor in the

electronic/communication component fields; and [iii] The characteristics of Present Inventions 1 to 3 can be considered to be greatly utilized as the white LED for a back monitor of a liquid crystal TV set, and particularly Present Patent 1 had an extremely important industrial meaning and made great contribution to rapid expansion of the LED market. In view of the first court Plaintiff's share and the like in the industry, in the sales period of the first court Defendant's product, the first court Plaintiff's product ranked considerably advantageously as compared with the other products regarding the white LED for back light of a liquid crystal TV set. In addition, by comprehensively examining the general circumstances to be considered in calculation of the amount equivalent to the license fee in Article 102, paragraph (3) of the Patent Act and circumstances such as characteristics and the range of the license fee rates in the related technical fields, it is found that the license fee rates of Present Inventions 1 to 3 should be considerably high numerical values not falling under 10%.

The first court Defendant's product, which is a liquid crystal TV set, is made of a large number of components other than the present LED, and it is not reasonable to apply the aforementioned license fee rate as is, but the arts of Present Inventions 1 to 3 can be considered to be greatly utilized as the white LED for a back monitor of a liquid crystal TV set and moreover, the first court Defendant's product sold well with beautiful images as one of sales points and thus, the contribution of the arts of Present Inventions 1 to 3 to the sales of the first court Defendant's product is considerably large, and the license fee rate on the basis of the sales of the first court Defendant's product does not fall under 0.5%.

(3) Calculation of the amount that first court Plaintiff can claim against first court Defendant

By multiplying the total sales of the first court Defendant's product of 24,933,687,037 yen by the license fee rate of 0.5%, it makes 124,668,435 yen, and the attorney's fee is reasonably found to be 12,000,000 yen as asserted by the first court Plaintiff and thus, the first court Plaintiff can claim at least 136,668,435 yen in total as compensation for damage against the first court Defendant, but this amount exceeds the amount of claim by the first court Plaintiff.

Judgment rendered on November 18, 2020
2020 (Ne) 10025 Appeal case of seeking injunction against patent right infringement
Judgment of the prior instance: Tokyo District Court, 2017 (Wa) 27238
Date of conclusion of oral argument: September 9, 2020

Judgment

Appellant and Appellee (Plaintiff of the first court) (hereinafter, referred to as the "first court Plaintiff"): NICHIA CORPORATION

Appellee and Appellant (Defendant of first court) (hereinafter, referred to as the "first court Defendant"): TOSHIBA VISUAL SOLUTIONS CORPORATION

Main text

1. The first clause in the main text of the judgment in prior instance shall be modified as follows on the ground of the appeal by the first court Plaintiff.
2. The first court Defendant should pay to the first court Plaintiff the money of 132,000,000 yen and a rate of 5% per annum from August 29, 2017 until completion of the payment.
3. The present appeal by the first court Defendant shall be dismissed.
4. The court cost is divided into 20 parts through the first and second courts, and three parts thereof shall be borne by the first court Plaintiff, while the remainder shall be borne by the first court Defendant.
5. This judgment may be provisionally executed only for the second clause.

Facts and reason

Abbreviations of terms and meanings of the abbreviations shall follow those in the judgment in prior instance other than those defined in the judgment, and all the "attachments" in the citation parts in the judgment in prior instance shall be altered to the "attachments in the judgment in prior instance", all the "Defendant's Products" to the "first court Defendant's Products", all the inventions specified by the position of

the party in the court of prior instance and the evidence numbers such as the "Defendant's Exhibit Otsu 1 Invention", the "Plaintiff's Exhibit Otsu 1 Invention" and the like to the "first court Defendant's Exhibit Otsu 1 Invention", the "first court Plaintiff Exhibit Otsu 1 Invention" and the like, respectively.

No. 1 Object of the appeal

(Object of the appeal of the first court Plaintiff)

The same as in the main text, clauses 1 and 2

(Object of the appeal of the first court Defendant)

1. The failed part of the first court Defendant in the judgment in prior instance shall be rescinded.

2. The claim by the first court Plaintiff shall be dismissed for the aforementioned part.

No. 2 Outline of the case and the like

1. Outline of the case

(1) The first court Plaintiff is a patentee of Present Patent Right 1 (Patent No. 5177317) of the invention titled "LIGHT EMITTING DEVICE AND DISPLAY DEVICE", Present Patent Right 2 (Patent No. 6056934) of the invention titled "LIGHT EMITTING DEVICE, RESIN PACKAGE, RESIN MOLDED BODY, AND MANUFACTURING METHOD THEREOF", and Present Patent Right 3 (Patent No. 5825390) of the invention titled "LIGHT EMITTING DEVICE, RESIN PACKAGE, RESIN MOLDED BODY, AND MANUFACTURING METHOD THEREOF".

The first court Defendant comprehensively succeeded a video business handling TV and the like of TOSHIBA LIFESTYLE PRODUCTS & SERVICES CORPORATION on June 30, 2016. For the period from January of 2014 to December of 2016, the company and the first court Defendant imported, transferred, and offered to transfer liquid crystal TV sets (first court Defendant's Products 1 and 2) described in 1 and 2 in the attached list of articles in the judgment in prior instance which were designed, manufactured, and the like by an overseas manufacturer, and the first court Defendant's Product had the present LED (LED (A) in the first court Defendant's Product 1 and LED (B) in the first court Defendant's Product 2) mounted.

This case is a case in which the first court Plaintiff asserted that the present LED belongs to each of technical scopes of the invention of Claim 1 of Present Patent 1 (Present Invention 1) and the invention of Claim 2 of Present Patent 3 (Invention 3 before the present correction. Hereinafter, together with Present Inventions 1 and 2, they shall be collectively referred to as "Present Inventions 1 to 3" and together with

Present Invention 2, they shall be collectively referred to as "Present Inventions 2 and 3"), and the manufacturing method of the present LED belongs to the technical scope of the invention of Claim 1 of Present Patent 2 (Present Invention 2), claimed injunction of production, transfer, and the like and disposal of the first court Defendant's Product pursuant to Article 100, paragraphs (1) and (2) of the Patent Act and payment of 132,000,000 yen among the compensation for damage of 143,501,857 yen on the ground of Article 709 of the Civil Code (the total amount of amount of damages of 124,668,436 yen on the ground of Article 102, paragraph (3) of the Patent Act, attorney's fee of 12,000,000 yen, and an amount corresponding to consumption tax of 6,833,421 yen) and delay damages at the rate of 5% per annum prescribed in the Civil Code before revision by the 2017 Law No. 44 from August 29, 2017, which is the day following the date of service of the bill of complaint until completion of the payment thereto against the first court Defendant.

(2) The court of prior instance approved the claim for compensation for damage by the first court Plaintiff to the limit of 17,956,641 yen and the payment of money at the rate of 5% per annum from August 29, 2017 until the completion of the payment and dismissed the remaining claim for compensation for damage and the claim for injunction and the claim for disposal.

Both the first court Plaintiff and the first court Defendant instituted a trial against the judgment in prior instance. However, the first court Plaintiff claimed only the compensation for damage in the judgment and did not appeal against the dismissal of the claim for injunction and the claim for disposal. Therefore, the object of trial in the judgment is limited to presence/absence of the right to claim for compensation for damage and the amount thereof.

(omitted)

No. 3 Judgment of this court

1. This court also judged similarly to the court of prior instance that the present LED infringes Present Patent Rights 1 to 3 and judged that it is reasonable to approve all the claims for compensation for damage of the first court Plaintiff.

Regarding the reasons, argument on the infringement shall be altered as in 2 described later, the judgment on the supplementary assertion of the first court Defendant in the court of prior instance in the aforementioned No. 2, 3(1) to (3) shall be added as in 3 described later, and the others are as described in 1 to 6 (pages 83 to 221 in the judgment in prior instance) in "No. 3 Judgment of this court" in "Facts and

Reasons" in the judgment in prior instance (hereinafter referred to as "No. 3 in the judgment in prior instance") and thus, the same shall be cited. On the other hand, argument on the damage shall be as in 4 described later, including the judgment on the supplementary assertion of the parties in this court.

2. Correction of judgment in prior instance related to citation

(1) The part "$Y_3A_{l5}O_{12}$: Ce" on page 87, line 9 in the judgment in prior instance shall be altered to "$Y_3Al_5O_{12}$: Ce", a phrase "using one type of light emitting element" is added subsequent to "conventionally," on page 88, line 17, the phrase "although it was considered" on the same page, lines 19 to 20 shall be altered to "although it was disclosed", "regarding" shall be added subsequently to the end of the line 16 on page 89, the part "aforementioned LED" on the same page, line 26 shall be altered to the "present LED", and the part "(1a-1, 1a-2)" on page 90, line 8 shall be deleted.

(2) The term "energy dispersive X-ray analyzing device (EDX analysis)" on page 90, line 21 in the judgment in prior instance shall be altered to the "energy dispersive X-ray analysis (EDX analysis) device", the term "analysis" on page 91, line 13 shall be deleted, the phrase from "is the wavelength" on page 92, line 13 to "seems." on line 15 shall be altered to "is the wavelength, but those containing C in the YAG-based fluorescent body are not known (Exhibit Ko 62, Exhibits Otsu 24 to Otsu 26, the entire import of the oral argument).", the phrase from "there is ... but" on line 18 of the same page to "found." on line 22 shall be altered to "there is ... (Exhibits Ko 54, Ko 55), but contents of C detected by the aforementioned EPMA analysis has considerable variation, and it is consistent to consider this to be caused by contamination.", the part "(1e-1, 1e-2)" on page 93, line 1 shall be deleted, and the term "and 1F" shall be added subsequent to "1D" on page 94, line 3 and line 10.

(3) Line break shall be inserted after the end of the line 15 on page 96 in the judgment in prior instance, and the following shall be added.

"D Solution to Problem

"The present invention is a manufacturing method of a light emitting device having a resin package with light reflectance of 70% or more at a wavelength of 350 to 800 nm after thermal curing and having a resin part and a lead formed on substantially the same plane on an outer side surface and relates to a manufacturing method of a light emitting device having a step of sandwiching a lead frame provided with a notch part by an upper die and a lower die, a step of forming a resin molded body on the lead frame by transfer molding the thermosetting resin containing a light reflective substance in a die sandwiched by the upper die and the lower die, and a step of cutting the resin molded body and the lead frame along the notch part. According

to such a configuration, since the thermosetting resin is filled in the notch part, a close contact area between the lead frame and the thermosetting resin increases, thereby an adhesion between the lead frame and the thermosetting resin can be improved, and since the thermosetting resin has viscosity lower than that of a thermoplastic resin, the thermosetting resin can be filled in the notch part without a gap left. Moreover, a large number of light emitting devices can be obtained at once, which can drastically improve production efficiency. Furthermore, a runner to be disposed of can be reduced, and an inexpensive light emitting device can be provided." ([0014])

(4) The letter "D" on page 96, line 16 in the judgment in prior instance shall be altered to "E", the phrase "(the 'thermosetting resin' in paragraph [0005] in present description 2 is found to be an error of the 'thermoplastic resin'.)" shall be added subsequent to the "thermoplastic resin" on page 97, line 6, the term the "energy dispersive X-ray analyzing device (EDX analysis)" on page 98, lines 6 to 7 shall be altered to the "energy dispersive X-ray analyzing (EDX analysis) device", and the part "(2b-1-1, 2b-1-2)" on the same page, lines 19 to 20 shall be deleted.

(5) The phrase "from this fact" on page 101, line 2 in the judgment in prior instance shall be altered to "on the basis of this fact and that the part corresponding to the lead and the resin part entering into the notch part are found to be on substantially the same plane in the present LED, as considered in the report (3) (Exhibit Ko 13)", and from the beginning of the line 17 on the same page to the part "since it is not consistent with" on line 18 shall be altered to "it only points out a possibility, and circumstances specifically supporting that are not found, either, and thus, the aforementioned judgment is not affected,", and the part "(2e-1, 2e-2)" on the same page, lines 22 to 23 shall be deleted.

(6) The term "was, but" on page 106, line 3 in the judgment in prior instance shall be altered to "was (the term 'thermosetting resin' in paragraph [0005] in present description 3 is found to be an error of the 'thermoplastic resin'), but", the phrase "this is appropriately pointed out also in the evidence (Exhibits Ko 11, Ko 12)." shall be added to the end of the line 15 on the same page, and the part "(3a-1, 2)" on the same page, line 21 and the part "(3b-1, 2)" on line 22 shall both be deleted.

(7) The phrase "substantially the same plane" on page 107, line 13 in the judgment in prior instance shall be altered to "in a state which should be considered to be formed on the same plane", and the part "(3f-1, 2)" on the same page, line 16 and the part "(3g-1, 2)" on page 108, line 1 shall be deleted.

(8) The term "regarding" shall be added subsequent to the end of the line 10 on page 109 in the judgment in prior instance, the part "$Y_3(Al_1\text{-}sGas)_5O_{12}$: Ce" on page

110, line 21 shall be altered to "Y_3(Al1-sGas)$_5O_{12}$: Ce", the phrase "when being hit" on page 116, line 11 shall be altered to "when being irradiated", the part "(Y0.2Gd0.8)3Al5O12: Ce" on page 117, line 16 shall be altered to "($Y_{0.2}Gd_{0.8}$)$_3Al_5O_{12}$: Ce", the term "fluorescent body" on page 118, line 24 shall be altered to "fluorescent body and the like", and the part "(ZnCd)$_S$" on page 119, line 1 shall be altered to "(ZnCd)S", the part "first fluorescent body:" on the same page, line 13 shall be deleted, the part "(FA-001 made by SINLOIHI CHEMICAL CO., LTD.)" shall be added to the end of the same line, the term "second fluorescent body:" on the same page, line 14 shall be deleted, the part "(FA-005 by SINLOIHI CHEMICAL CO., LTD.)" shall be added subsequent to the "pigment" on the same line, "the color center (written in Katakana with prolonged sound mark in the end)" on the same page, line 25 shall be altered to "the color center (written in Katakana with no prolonged sound mark in the end)", the part "$Y_3Al_5O_{12}$ Based" on the page 120, lines 5 to 6 shall be altered to "$Y_3Al_5O_{12}$-Based", the part "2μA/cm2" on the same page, line 19 shall be altered to "2μA/cm^2", and the part "(Y1-xCrx)$_3$A1$_5O_{12}$" on page 122, line 1 shall be altered to "(Y_{1-x} Cr_x)$_3Al_5O_{12}$".

(9) The part from the beginning of the line 12 on page 125 to the end of the line 4 on the page 127 in the judgment in prior instance shall be altered as follows.

"However, those described as the problems of the prior art in the present description 1 are only deterioration of the fluorescent body caused by light, heat, moisture, a DC electric field (in the case of ionic organic dye), and since those corresponding to the aforementioned problems are described in the means for solving the problem and the effect of Present Invention 1, it can be found that the "problems" in Present Invention 1 are the aforementioned deterioration of the fluorescent body by the light, heat, moisture, and the DC electric field.

Moreover, Present Description 1 describes, as embodiment 8, a light emitting diode using a fluorescent body ($Gd_3(Al_{0.5}Ga_{0.5})_5O_{12}$:Ce) according to the constituent feature E of Present Invention 1 substituting 100%Gd for the light emitting element with a light emission peak at 450 nm using a GaInN semiconductor and Y, and it is described that the light emission diode has excellent weather resistance although its brightness is low ([0102], [0120] in Present Description 1) and thus, the light emission diode with low brightness is disclosed as the embodiment in Present Invention 1.

And paragraph [0010] in Present Description 1 describes that 'therefore, the invention of the present application has an object to solve the aforementioned problem and to provide a light emitting device with higher brightness, and extremely little

deterioration in light emission intensity and light emission rate or color deviation even under a long-time use environment.', but in view of those held as above, it cannot be found that the brightness of the light emitting device of Present Invention 1 itself is high is the 'premise' of Present Invention 1.

All the remaining description in Present Description 1 ([0014], [0038], [0045], [0079], [0086]) is found to describe that a blue light emitting element is capable of light emission with high brightness or that the high brightness is maintained since the blue light emitting element with high brightness is used as such and the aforementioned problem is solved, and it cannot be immediately considered that to have the high brightness makes the 'premise' of Present Invention 1.

It is found that a person ordinarily skilled in the art can recognize that the aforementioned problem can be solved by employing the structure within the scope of claims from the description in the solution to the aforementioned problem and the effect in Present Description 1 ([0011], [0014], [0139]) and moreover from the description in the embodiment, and examples/comparative examples ([0044], [0045], [0050], [0102] to [0137] in Present Description 1).

When the fluorescent body not containing at least either one of Y and A1 is used, even if the brightness can be lowered as asserted by the first court Defendant, it does not constitute violation of the support requirement."

(10) The part from the beginning of the line 11 on page 127 to the end of line 19 in the judgment in prior instance shall be deleted, the term "further" on the same page, line 20 shall be altered to "moreover", the part from "for example" on page 130, line 3 to "can be observed." on line 5 shall be deleted, the phrase "hereinafter, referred to as the "Exhibit Otsu 2 gazette"." on page 131, line 10 shall be altered to "Exhibit Otsu 2 gazette", the part "4880Å" on the same page, line 26 to "4880A", the part "5500Å" on page 132, line 3 to "approximately 5500A", the part "4416Å" on the same page, line 4 to "4416A", the part "not.)" on page 133, line 10 to "not).", and all the parts "or the fluorescent pigment" on page 134, line 10 and page 135, lines 3 to 4 to "the fluorescent pigment".

(11) The part "Cd" on page 138, line 6 in the judgment in prior instance shall be altered to "Ca", the part "(Zn(d)S" on the same page, line 7 to "(ZnCd)S", the part "in the Exhibit Otsu 6 gazette" shall be added subsequent to the phrase "according to the aforementioned description" on page 139, line 14, the term "silica" on page 140, line 1 and 8 shall be altered to "silicic acid", the phrase "in the Exhibit Otsu 7 gazette" shall be added subsequent to "according to the aforementioned description" on the same page, line 10, the phrase "in the light emission center" on the same page, line 16

shall be altered to "In a flying spot tube, rise and attenuation of fluorescent light are required to be very fast. ... in the light emission center", the part "Ce3+" on the same page, line 17 shall be altered to "Ce^{3+}", the part "Y2SiO5: Ce" on the same page, lines 20 to 21 shall be altered to "Y_2SiO_5: Ce", the word "enough" on page 141, line 11 shall be altered to "sufficient", the term "viridian area" is added subsequent to "absorbing" on page 142, line 6, and "like this" on page 143, line 1 to "such as this".

(12) The part from "(1020" on page 145, line 3 to the end of line 4 in the judgment in prior instance shall be altered to "(10^{20} atom cm^{-3}) and an available range is 5×10^{19} to 10^{21} atom cm^{-3}", and the part "is the report regarding diode)" on page 146, line 6 shall be altered to "is the report on 'diode'", the part from the beginning of the line 5 on page 148 to the end of line 14 shall be deleted, the term "for LED" on the same page, line 20 to "for LCD", the comma "," on page 149, line 11 shall be deleted, the part "to the second page, third column" shall be added subsequent to "the second column" on the same page, line 17, the term "particularly" on page 151, line 1 shall be altered to "TORIWATE", "53." on the same page, line 22 to "53.,", and "is the problem to be solved" on the same page, line 26 to "included in the problem to be solved".

(13) The term "regarding" shall be added subsequent to the end of the line 12 on page 153 in the judgment in prior instance, "No. 180-591" on page 167, line 13 shall be altered to "No. 180591", "the date of original filing of this case" on page 168, line 23 to "the date of original filing of Present Patent 2", the term "reflectivity is" both on the same page, lines 24 to 25 and on page 169, line 1 to "of reflectance".

(14) The term "regarding" shall be added subsequent to the end of the line 24 on page 169 in the judgment in prior instance, the phrase "regarding the translation of the Exhibit Otsu 47 gazette, the translation of the first court Defendant in 'Defendant's preparation document (9)' in the court of prior instance was cited also by the first court Plaintiff in the 'preparation document (Plaintiff No. 9)' in the court of prior instance and is not disputed and thus, the aforementioned translation of the first court Defendant shall be the premise." shall be added subsequent to the end of the line 26 on the same page.

(15) The phrase "in view of the description in the aforementioned A" on page 172, line 5 in the judgment in prior instance shall be altered to "other than the description in the aforementioned A, in view of FIGs. 2a, 2b, 3a, 4b to 4d in the Exhibit Otsu 47 gazette", the term "the lead 104" on the same page, line 7 shall be altered to "the electrode 104 (hereinafter, referred to as the 'lead 104' for convenience)", the phrase "a worked metal plate (lead frame 104) including the lead 104" on the same page, line

10 shall be altered to "a worked metal plate made of the lead 104 and a heatsink sheet 102 (hereinafter, referred to as the 'lead frame 104' for convenience.)", "the resin part 106" on page 173, line 7 shall be altered to "the insulating body 106", "the plate member 201" on the same page, lines 14 to 15, the same page, line 22, and page 174, line 12 shall be altered to "the plate member 210", and "the lead frame with resin molded body" on the same page, line 2, line 3, and line 7 shall be altered to "the lead frame with resin molded body".

(16) The phrase "at this time, by forming a resin layer by masking only the recess portion 23, the resin layer 25 continuing to the resin 13a is formed on a lower surface and a side surface of a first metal thin plate 13b excluding the recess portion 23 and a lower surface and a side surface of a second metal thin plate 13c." shall be added subsequent to the "provided." on page 177, lines 11 to 12 in the judgment in prior instance, and the following shall be added to the end of the same line with a line break.

"'(Fourth step) In the fourth step, as illustrated in FIG. 5, an insulating substrate 15 and a thin flat plate 13 are bonded together through an adhesive film 19 so that an insulating separating part 24 made by filling an insulating resin in a separating slit 24a is located in a through hole of the insulating substrate 15. ... (omitted) ([0033])"

(17) The phrase "in view of the description in the aforementioned A" on page 179, line 10 in the judgment in prior instance shall be altered to "other than the description in the aforementioned A, in view of FIG. 1, FIG. 7, and FIG. 10 in the Exhibit Otsu 48 gazette", the phrase "the first metal thin plate 13b and the second metal thin plate 13c (hereinafter, they are collectively referred to as the 'lead' for convenience.)" on the same page, lines 12 to 13 shall be altered to "the first metal thin plate 13b and the second metal thin plate 13c (lead)", and the part from the beginning of the line 25 on the same page to the end of the line 2 on page 180 shall be altered as follows.

"2b-6 a step of preparing a collective body of a thin flat plate 13,

2b-5 and, on the bottom surface of the collective body of the thin flat plate 13, the metal thin plate base material is covered with a resin layer 25 (resin molded body), and

2b-7 a step of forming a plurality of packages by bonding an insulating substrate 15 having a through hole 14 formed separately to an upper part of a collective body of the thin flat plate 13 by an adhesive film 19,"

(18) The phrase "the first metal thin plate 13b and the second metal thin plate 13c" on page 180, line 15 in the judgment in prior instance shall be altered to "the first metal thin plate 13b and the second metal thin plate 13c", all the parts "the lead frame with a resin molded body" on page 181, lines 4, 5, and 9 shall be altered to "the lead

frame with resin molded body", and the part "the resin molded body and the insulating substrate" on the same page, line 7 shall be altered to "the resin molded body (resin 13a, resin layer 25) and the insulating substrate 15", and a period "." shall be added subsequent to the part "2e)" on the same page, line 13.

(19) The term "the recess portion 21" on page 183, line 11 in the judgment in prior instance shall be altered to "the recess portion 21c", the phrase "according to the aforementioned A" on page 184, line 23 shall be altered to "other than the description in the aforementioned A, in view of the description that 'the metal core is made of a magnesium alloy' in paragraph [0029] in the Exhibit Otsu 49 gazette and FIG. 1, FIG. 3, and FIG. 7, FIG. 14 to FIG. 17 in the Exhibit Otsu 49 gazette", the phrase "the same as" on the same page, line 25 to "substantially the same as", all the parts "the collection case body 120" on page 185, lines 3 to 4, 5, 9, and 14 as well as "the collection case pair 120" on the same page line 12 shall be altered to "the collection case body 121", all the parts "the slit 123c" on the same page, lines 10 to 11 and 18 shall be altered to "the slit 123g, the groove portion 123c", the part "[0140]" on the same page, line 23 shall be deleted, both the "collection case 120" on page 186, line 18 and "the collection case body 120" on page 187, line 6 shall be altered to "the collection case body 121", and "the slit 123c" on page 186, line 22 shall be altered to "the slit 123g, the groove portion 123c".

(20) The phrase "on (dispute 7-1)" shall be added subsequent to the end of the line 21 on page 187 in the judgment in prior instance, the phrase "in paragraphs [0042] and [0050] in the present description 3" on page 188, line 7 shall be altered to "according to paragraphs [0042] and [0050] in Present Description 3", the part "in paragraph [0022]" on the same page, lines 8 to 9 shall be altered to "according to paragraph [0022]", the part "is also explicitly described" on the same page, line 10 shall be altered to "is found to be described, respectively", the part "(dispute 7-2)" shall be added subsequent to "solution" on the same page, line 14 and the "(dispute 7-3)" shall be added subsequent to the "solution" on page 189, line 12, the part "a semiconductor device and a frame for manufacturing the semiconductor device" on page 196, lines 12 to 13 shall be altered to "a surface-mount light emitting diode and a manufacturing method thereof", and the part "above the frame" on page 197, line 6 shall be altered to "frame-shaped".

(21) The phrase "in view of the description in the aforementioned (a)" on page 197, line 8 in the judgment in prior instance shall be altered to "other than the description in the aforementioned (a), in view of FIG. 1 and FIG. 4 in the Exhibit Otsu 16 gazette" and the term "the aforementioned" on page 198, line 2 shall be altered to

""the aforementioned" and the term "the lead is" on the same page, line 15 shall be deleted.

(22) The phrase "(dispute 7-4)" shall be added subsequent to "solution" on page 200, line 12 in the judgment in prior instance, "(dispute 7-5)" shall be added subsequent to "solution" on page 202, line 20, and "(dispute 7-6)" shall be added subsequent to "solution" on page 203, line 9, the part from the "lead time" on the same page, line 10 to "the manufacturing method" on line 12 shall be altered to "a manufacturing method of a package substrate for mounting an optical semiconductor element and a manufacturing method of the optical semiconductor device using this", the term "400mm2" on page 205, line 8 shall be altered to "400mm^2", the term "1600mm2" on page 208, lines 12 to 13 shall be altered to "1600 mm^2", and the phrase "according to the description in the aforementioned (a), the Exhibit Otsu 17 gazette describes the following invention" on page 209, line 23 shall be altered to "other than the description in the aforementioned (a), according to FIG. 1, FIG. 2, and FIG. 4 in the Exhibit Otsu 17 gazette, the invention described in the Exhibit Otsu 17 gazette has at least the following structure", the phrase "made of an epoxy resin" shall be added subsequent to "coated" on page 210, line 8, the part from "in the following point" on the same page, line 15 to the end of line 16 shall be altered to "is different at least in the following point.", the part from the beginning of the line 22 on the same page to the end of line 25 shall be deleted, "③" on the same page, line 26 shall be altered to "②", "④" on page 211, line 8 shall be altered to "③", "⑤" on the same page, line 12 shall be altered to "④", the part from the beginning of the line 18 on the same page to the end of line 21 shall be deleted, "⑦" on the same page, line 22 shall be altered to "⑤" , both "the aforementioned ③" on page 212, lines 13 and 17 shall be altered to "the aforementioned ②" , "the same construction method" on the same page, line 21 shall be altered to "the Exhibit Otsu 17 gazette", and "the aforementioned ③" on page 213, both lines 2 and 5 shall be altered to "the aforementioned ②".

(23) Subsequent to the end of the line 11 on page 213 in the judgment in prior instance, the phrase "regarding the solution (dispute 7-7) of" shall be added, "⑦" on page 215, line 15 shall be altered to "⑤", and the phrase "according to the aforementioned (a)" on the same page, line 20 shall be altered to "other than the aforementioned (a), according to FIG. 1 to FIG. 5 and FIG. 9 in the Exhibit Otsu 18 gazette", and "⑤" on page 216, lines 1 and 9 shall be altered to "④".

(24) The part from the beginning to the end of the line 16 on page 216 in the judgment in prior instance shall be altered to "A. Fulfillment of 'notch portion'

(constituent features 3A' and 3B') (dispute 7-8)", the part from the beginning to the end of the line 20 on the same page shall be altered to "B. Fulfillment of 'titanium oxide contained as a light reflective substance' (constituent feature 3A') (dispute 7-9)", the part from the beginning of the line 13 to the end of the line 14 on page 217 shall be altered to "C. Fulfillment of 'sealing member made of silicone resin or modified silicone resin' (constituent feature 3E') (dispute 7-10)", the term "SEM analysis" on the same page, line 23 shall be altered to "SEM observation", and the term "cm-1" on page 218, line 2 shall be altered to "cm^{-1}", respectively, and the part "to 43" on the same page, lines 6 to 7 shall be deleted.

(25) The term "(dispute 7-11)" shall be added subsequent to the end of the line 4 on page 219 in the judgment in prior instance, the term "(dispute 7-12)" shall be added subsequent to the end of the line 16 on the same page, ", 3i'-1" shall be added subsequent to "3h'-1" on page 220, line 12, ", 3I'" shall be added subsequent to "3H'" on the same line, ", 3i'-2" shall be added subsequent to "3h'-2" on the same page, line 21, and ", 3I'" shall be added subsequent to "3H'" on the same line.

3. Judgment on supplementary assertion of the first court Defendant related to infringement argument in this court

(1) Meaning of the "lead" in Present Invention 2, Invention 3 before the present correction, and Invention 3 after the present correction (related to dispute 2-2-1, dispute 3-2, and dispute 7-11)

The first court Defendant asserts that, if the meaning of "lead" in Present Invention 2, Invention 3 before the present correction, and Invention 3 after the present correction is correctly found, the present LED does not infringe Present Patents 2 and 3.

However, regarding the "lead" referred to in each of the aforementioned inventions, it should be understood from the description in paragraphs [0013] and [0050] in Present Description 2 and Present Description 3 that the member which was the lead frame at a stage prior to separation to individual pieces becomes the "lead" by the separation to individual pieces by cutting and that the present LED fulfills constituent feature 2E of Present Invention 2, constituent feature F of Invention 3 before the present correction, and constituent feature F' of Invention 3 after the present correction as held in No. 3, 2(4)A (pages 99 to 100 in the judgment in prior instance), 3(4) (pages 106 to 107 in the judgment in prior instance), and 6(3)D (page 219 in the judgment in prior instance) in the judgment in prior instance cited after correction.

On the other hand, the first court Defendant points out the description in the other

Unexamined Patent Application Publications (Exhibits Otsu 69, Otsu 101), but the meaning of "lead" in Present Invention 2, Invention 3 before the present correction, and Invention 3 after the present correction or fulfillment of the constituent features of the present LED is not affected by those described contents.

Therefore, the aforementioned assertion of the first court Defendant cannot be employed.

(2) Violation of support requirement by Present Invention 1 (related to dispute 4-1 and dispute 4-4)

A. The first court Defendant asserts that Present Invention 1 fails to fulfill the support requirement in the point that the GAG fluorescent body and the YGG fluorescent body are included.

However, Present Invention 1 is not considered to fail to fulfill the support requirement as held in No. 3, 4(1) (pages 109 to 128 in the judgment in prior instance) in the judgment in prior instance cited after correction.

B. On the other hand, the first court Defendant asserts that particularly the GAG fluorescent body and the YGG fluorescent body are fluorescent bodies that do not emit yellow light even if they are excited by blue light emission from the light emitting element, but it is not enough to immediately approve the aforementioned fact even by the evidences (Exhibits Otsu 71, Otsu 72, and Otsu 98) submitted by the first court Defendant.

Moreover, Present Description 1 describes that, if an amount of Gd or Ga is increased, the wavelength shifts to a longer wavelength or a shorter wavelength, while the brightness is lowered (paragraphs [0050] to [0054], [Table 1], paragraph [0083]) and thus, a person ordinarily skilled in the art can select the amount of Gd or Ga in accordance with the wavelength of a blue LED to be used, and an intended white color tone or brightness as appropriate, and it can be found that a person ordinarily skilled in the art can select use of the GAG fluorescent body or the YGG fluorescent body in the course of process. Thus, it cannot be considered that Present Invention 1 fails to fulfill the support requirement on the ground of the aforementioned point pointed out by the first court Defendant.

Therefore, the aforementioned assertion of the first court Defendant cannot be employed.

(3) Lack of inventive step of Present Invention 2 (related to dispute 5-3 and dispute 5-4)

A(a) The first court Defendant asserts that the term "lead frame with resin molded body" used in the technical field of the light emitting device can be prepared without

using a "die" and thus, it is an error to understand that the "lead frame with resin molded body" referred to in Present Invention 2 refers to those using a die.

(b) Regarding the "molding", [i] "Illustrated plastic terminology" by Maki, Hiroshi et al. by Nikkan Kogyo Shimbun (published in 1981, Exhibit Ko 95) describes that "in general, it refers to softening or melting/fluidizing a plastic molding material by applying heat and pressure and then, to forming it into a desired shape by using a mold or a die. Usually, molding such as compression molding using a die, transfer molding, injection molding, blow molding, and the like are referred to as mo(u)lding."; [ii] "Chemical Dictionary" edited by OKI, Michinori et al, by Tokyo Kagaku Dojin (published in 1989, Exhibit Ko 96) describes that "molding of plastic and rubber and molding of glass and ceramics are included, but both of them are methods in which they are heated into a fluidized state, press-fitted into a die, and solidified, and the solidification includes a case of cooling and solidifying and a case of causing them to react and to be hardened. The former methods include injection molding, extrusion molding, blow molding, heat molding, and compression molding for plastic, and injection, extrusion, and compression moldings are also used for the case of reaction hardening."; and [iii] "Plastic Dictionary" edited by Plastic Dictionary Editorial Committee, by Kogyo Chosakai Publishing Co., Ltd. (published in 1994, Exhibit Ko 97) describes that "To fluidize a molding material by applying heat and pressure and to mold it into a predetermined shape by using a die or the like. The materials to be molded include a thermoplastic resin, a thermosetting resin, rubber, and powders of ceramics or metal given fluidity by mixing a binder and the like. The molding methods include injection molding, extrusion molding, compression molding, transfer molding, blow molding, heat molding, laminate molding, foaming molding, rotational molding, casting, dip molding, and the like."

On the basis of the general meaning of the term "molding" as above, the "lead frame with resin molded body" referred to in Present Invention 2 can be considered to refer to those made by applying heat or pressure to a thermosetting resin so as to fluidize and solidify it, and use of a die at that time is assumed, and a person ordinarily skilled in the art would also understand as such.

(c) Regarding the above, on the basis of Exhibit Otsu 99 which is an Unexamined Patent Application Publication filed after the date of original filing of Present Patent 2, the "lead frame with resin molded body" used in the technical field of the light emitting device is not understood to be "molding" with a meaning different from that of the general term "molding" as in the aforementioned (b), and there is no evidence sufficient to find other circumstances that should be understood as above. Moreover,

Claims 6 and 7 in Present Patent 2 are found to illustrate a specific step on the premise that a die is used in the "step of preparing a lead frame with resin molded body" referred to in Claim 1.

(d) Therefore, the aforementioned assertion of the first court Defendant on the meaning of the "lead frame with resin molded body" in Present Invention 2 cannot be employed.

B. And on the basis of the meaning of the "lead frame with resin molded body" in Present Invention 2 as in the aforementioned A, the inventive step of Present Invention 2 is not denied by the Exhibit Otsu 47 gazette and the Exhibit Otsu 48 gazette, as held in No. 3, 5(3) and (4) (pages 169 to 182 in the judgment in prior instance) in the cited judgment in prior instance after correction. All the supplementary assertions of the first court Defendant on these points in this court lack premise and cannot be employed.

4. Presence/absence of occurrence of damage and the amount thereof (dispute 8) (including the judgment in this court on the supplementary assertion of parties)

(1) "The amount equivalent to the amount of money which would have been entitled to receive for the working of the patented invention" prescribed in Article 102, paragraph (3) of the Patent Act

Article 102, paragraph (3) of the Patent Act is the provision legally mandating the minimum amount of damages that the patentee can claim in the case of patent right infringement, and the damage pursuant to the paragraph should be calculated by multiplying sales of the infringement product as a reference by a rate which would have been entitled to receive for the working in principle.

And regarding the "amount equivalent to the amount of money which would have been entitled to receive for the working of the patented invention" prescribed in the paragraph, at a stage where it is not obvious yet whether belonging to the technical scope or the patent should be invalidated or not, unlike the case of a license agreement of a patented invention in which a license fee rate is determined in advance under circumstances usually with various contractual restrictions such that a licensee pays a minimum guarantee amount and cannot claim return of the paid license fee even in the case where the patent is invalidated, in view that the infringer is not responsible for the contractual restriction as above if the patent right infringement is applicable since the patent belongs to the technical scope and should not be invalidated and the history of revision of the paragraph by the 1998 Law No. 51, the calculation of the damage on the ground of the paragraph should not necessarily be based on the license fee rate in the license contract on the patent right. Such fact

should be considered that the rate which should be determined ex-post for those who committed patent right infringement and would have been entitled to receive for the working would be naturally higher than a usual license fee rate, and a rational license fee rate should be determined by comprehensively considering [i] the license fee rate in the actual license of the patented invention, or when it is not obvious, the market price of the license fee and the like in the industry; [ii] the value of the patented invention itself; that is, the technical contents, importance, alternativeness, and the like of the patented invention; [iii] sales, contribution to profits, and the mode of infringement when the patented invention is used for the product; and [iv] circumstances appearing in the suit such as competitive relations between the patentee and the infringer, business policies of the patentee, and the like.

(2) Circumstances which should be considered in calculation of the license fee rate

According to the evidences listed in the parentheses and the entire import of the oral argument, the following facts are found.

A. Numerical value and the like related to license fee rate

(a) "License fee rate [fifth edition]" issued by Japan Institute of Invention and Innovation (issued on September 30, 2003, Exhibit Ko 79) has a description with the following gist on the license fee rate in the field of the "Components for electronics/communication".

a. An average value of the license fee rate in the case where there is no initial payment condition is 4.9% for the period from fiscal 1988 to fiscal 1991 and 3.3% for the period from fiscal 1992 to fiscal 1998. As the result of lowered average value, this is one of the technical fields with the lowest license fees among all the technical fields.

b. This technical field has more contract cases among all the technical fields, but the license fee rate is kept low as compared with the other technical fields with contract cases in the upper rank. The reasons for that are considered to include [i] in this technical field, more importance is placed on obtainment of high-priced license incomes and popularization of technologies as well as standardization of target arts than is the case in other technical fields; [ii] business investment is large in the semiconductor industry, and a risk of loss of licensees is larger.

c. By subdividing the 21 contract cases in total (regardless of presence of the initial payment condition) with license fee rate of 8% or more in the period from fiscal 1992 to fiscal 1998 in terms of technical contents, one case was for an electron tube, 18 cases for semiconductors, and 2 cases for the other electronic/communication components; that is, most of them were for semiconductors.

(b) According to "Royalty Rate Data Handbook - Patent right/trademark right/program copyright/technical knowhow -" published on August 31, 2010, the license fee rate in the field of "electric" related to Present Inventions 1 to 3 was 2.9% for an average value, 9.5% for a maximum value, and 0.5% for a minimum value (Exhibit Otsu 89).

(c) In the case of reconciliation of the first court Plaintiff with the other party in a lawsuit or the like, if replacement on the side of the other party of the infringement product with the LED manufactured by the first court Plaintiff is possible, the reconciliation might be made with the amount of compensation for damage obtained by multiplying the sales of the infringement product by the license fee rate of approximately 5% on condition that the LED should be purchased by the other party. However, if such replacement is difficult, the reconciliation might be made with the amount of compensation for damage obtained by multiplying the sales of the infringement product by the license fee rate higher than the above on condition of stop of manufacture/sales of the product (Exhibit Ko 84-1).

The first court Plaintiff reconciled with the other party in court with the amount obtained by adding an amount of 8% equivalent to the consumption tax to the amount obtained by multiplying the total sales by the license fee rate of 10% in relation with the case of the sales of LED bulbs infringing two patents including Present Patent 1, in May of 2016 (Exhibits Ko 84-1, Ko 84-3).

(d) Phillips, which is a competitive manufacturer of the first court Plaintiff, published a license program of the LED lighting and the LED retrofit bulb on June 21, 2016, which indicates that the license fee rate on the basis of the total income of the LED lighting is 3% for single-light lighting (white or nonwhite fixed colors) (Exhibit Otsu 102).

B. Circumstances related to values/importance and the like of Present Inventions 1 to 3

(a) After the development of the blue LED by the first court Plaintiff, realization of development of the white LED by the first court Plaintiff by using the blue LED and a fluorescent body without using three types; that is, red, green, and blue LEDs, has an extremely important industrial meaning, greatly contributed to rapid expansion of the subsequent LED market (Exhibits Ko 24, Ko 26), and the development of the white LED by the first court Plaintiff was taken up even in "2019 White Paper on Science and Technology" issued by the Ministry of Education, Culture, Sports, Science and Technology (Exhibit Ko 86).

(b) The materials of the fluorescent body to be combined with the blue LED chip in

order to structure the white LED include TAG (terbium, aluminum, garnet), sialon, BOS (barium, orthosilicate), and the like, other than the YAG (Exhibit Otsu 105). On this point, OSRAM Opto Semiconductors GmbH in Germany granted a license of the white LED by the TAG fluorescent body to a plurality of companies from around 2003 to 2004 (Exhibit Otsu 108), and Vishay Intertechnology, Inc. in the U.S. launched the white LED using the TAG fluorescent body intended for a flash light of a camera, a brake lamp, a direction indicator, a backlight of an instrument panel, an emergency light in an automobile, and the like in 2008 (Exhibits Otsu 109-1, Otsu 109-2). In 2006, there was a news report that white LEDs using the TAG fluorescent material and the like entered into the market one after another (Exhibit Otsu 106), and in 2012, YAG, TAG, and silicate gained high evaluation that they were three best fluorescent bodies in the world (Exhibit Otsu 107).

(c) The thesis titled "Current Situations and Latest Trends of LED Product Development" published in 2015 (TOYODA GOSEI TECHNICAL REPORT No. 57. Exhibit Otsu 91) has a description with the following gist.

a. By means of development of the white LED of a type in which a fluorescent body is excited with the blue LED as a light source, a small-sized/energy saving white light source was put to practical use, and applications were further expanded. Typical examples include a liquid crystal display. The improved efficiency of the white LED promoted rapid substitution of the light source for backlight. Advantages realized by the change to LED are mainly high light emission efficiency and thinning. In addition to the high energy efficiency of the light source itself of the LED, incident efficiency to the backlight is improved by light distribution directivity and thus, ease of promotion of the energy-saving as a device is also a big advantage. At the present when the LED has become commonplace, expectation/needs for improvement in efficiency of the LED are still high in order to cover deterioration in panel transmittance (a screen becomes dark) associated with improvement in panel image quality (higher definition/wider color gamut).

b. Recently, improvement of color qualities has been promoted by combination of the blue LED, a green fluorescent body, and a red fluorescent body, which are three primary colors of light, from the combination of the conventional blue LED and a yellow fluorescent body.

When quasi white light in which the yellow fluorescent body is added to the conventional blue LED is used for a liquid crystal, color purity is low and a color gamut on the liquid crystal panel is narrow in general. In order to expand the color gamut, there is a method of increasing concentration of a color filter of the liquid

crystal panel, but is not desirable, since a light loss is large. Thus, in order to improve the color gamut, new white light in which the green fluorescent body and the red fluorescent body are combined with the blue LED has been developed.

C. Sales of first court Defendant's Product and positioning of the present LED and the like

(a) Sales of first court Defendant's Product (Exhibit Otsu 87)

a. First court Defendant's Product 1

A sales period of the first court Defendant's Product 1 was from January in 2014 to March in 2016, a total volume of units sold was 433,971 units, an average sales price per unit was 33,902 yen, and the total sales were 14,712,305,518 yen. Breakdown of the sales was 14,704,047,272 yen from January in 2014 to September in 2015, 2,936,815 yen in October of the same year, and 5,321,431 yen from November of the same year to March in 2016.

b. First court Defendant's Product 2

The sales period of the first court Defendant's Product 2 was from May in 2015 to December in 2016, the total volume of units sold was 296,608 units, the average sales price per unit was 34,461 yen, and the total sales were 10,221,381,519 yen. Breakdown of the sales was 2,414,361,080 yen from May in 2015 to September in 2015, 932,680,350 yen in October of the same year, 6,849,222,715 yen from November of the same year to November in 2016, and 25,117,374 yen in December of the same year.

(b) Positioning of the present LED in the first court Defendant's Product and the like

a. The first court Defendant's Products are all digital high-definition liquid crystal TV sets, and the backlights of the first court Defendant's Products 1 and 2 had 24 units of LEDs (A) or LEDs (B) mounted for each unit. The methods of the liquid crystal TV are categorized to a directly under type and an edge type by the type of the backlight, and the first court Defendant's Product was of the directly under type (Exhibit Ko 85).

b. The LED used in the TV set is preferably inexpensive, since a plurality of LEDs are used in one unit of the TV set, while durability is required as an extremely important characteristic since the LED provided inside the TV set cannot be replaced.

c. Staff in charge in the TV business division in Toshiba insisted that the white LED would become a trend of the backlight of the liquid crystal TV set in April of 2009 and clearly announced recognition that the white LED could realize higher image quality than the LED light source of RGB three colors (Exhibit Ko 32).

The first court Defendant emphasized beautiful images as one of sales points in sales of the series of the liquid crystal TV set products including the first court

Defendant's Product, and the first court Defendant's Product has a function of automatic adjustment to an image quality suitable for ambient brightness, called "OMAKASE Auto Picture". This function used characteristics of the LED which emits light linearly (Exhibits Ko 77, Ko 78, Ko 92).

Some of reviews by users who purchased the first court Defendant's Product 1 pointed out a good image quality and good cost performance (Exhibit Ko 93).

d. The first court Defendant's Product ranks high (third) in the hot-selling ranking from July to November in 2015 (Exhibit Ko 94).

e. In the LED of a general size for a liquid crystal TV set employing the directly under type backlight, the LED using the art related to Present Inventions 2 and 3 are used in many cases (Exhibits Ko 87 to Ko 89).

f. The first court Defendant's Product is an OEM product, and the first court Defendant did not know a unit price of the present LED or which manufacturer made the present LED.

D. Market related to the LED and the like

(a) A worldwide average price of white LED for TV backlight was 0.1 dollars in 2014, 0.08 dollars in 2015, and 0.068 dollars in 2016 (Exhibits Otsu 85-1 to Otsu 85-3, Otsu 104). The annual average exchange rate (TTS) was 106.85 yen/dollar in 2014, 122.05 yen/dollar in 2015, and 109.84 yen/dollar in 2016 (Exhibit Otsu 90).

(b) “2017 LED Related Market Total Research" issued by Fuji Chimera Research Institute, Inc. (issued on January 25, 2017, Exhibit Ko 84-2) has a description with the following gist.

a. Backlight unit for TV set

For the backlight unit for TV set, the directly under type white LED package has been employed. A high output, a wide color gamut, and a long life are requested for the LED for TV in many cases, which makes it a high-end product as compared with the LED for the other backlight units.

At the time of the fourth quarter in 2016, a main price range of the directly under type backlight unit for a 32-inch TV set was 1,400 to 1,700 yen per unit. However, the price is largely varied by configuration of an optical sheet, specification of the LED package, and the number of mounted units. Moreover, the price of the backlight unit for high-end TV set uniquely designed by each TV set manufacturer becomes higher. The trend to a lower price is expected to continue due to reduction in the number of mounted optical sheets realized by function combination and reduction in the mounted quantity by performance improvement of the LED package.

b. White LED package

The white LED package is an LED package emitting quasi white light. The white light is quasi-realized by using a fluorescent body mainly for a visible light (GaN-based) LED chip. For the white LED package, development for improving light emission efficiency has been carried out in Japan. On the other hand, color rendering properties (color reproductivity) are also required, but the color rendering properties and the light emission efficiency are in a trade-off relationship. In China, self-manufacture of various component members including a lead frame by LED package manufacturers has been spreading for the purpose of cost compression.

In the world as a whole, the white LED package market has continued to show favorable expansion on the quantity basis. However, shipments for the backlight which has held a large share have largely declined. The main factors of the shrinking market include, in addition to reduction in set devices, reduction in the number of mounting processes and transfer to OLED for the medium-to-small sized backlights, and reduction in the mounting number along with an increase in a light flux amount per package for the TV backlights.

Regarding the white LED package at the time of the fourth quarter in 2016, the price of the directly under type white LED package for backlight was 18 to 24 yen per unit.

c. Fluorescent body employed for the white LED package

In many cases, a single body of the yellow fluorescent body is employed for products requiring high light emission efficiency/low price. When color rendering properties and wide color gamut are required, combination of yellow and red or red and green is employed.

An importance of the fluorescent body for LED has been increasing in the production quantity by area in China.

In the shipment result in 2015, the YAG fluorescent body held an 83.5% share in the yellow fluorescent body, with the silicate-based at 10.2% and others at 6.3%. At this point, the silicate-based ones are on a declining trend. That is because reliability under a high-temperature high-humidity condition is lower than with the YAG and the like. Upon expiry of major YAG patents held by the first court Plaintiff in 2017, particularly the LED package for lighting such as a bulb with color temperature of approximately 3000K has possibility to transfer to the YAG with good efficiency on the background.

(c) “Fiscal 2017 White LED/Current Situation and Prospects of Applied Market" issued by SOGO GIKEN K.K. (Exhibit Otsu 86) has a description with the following gist.

a. Regarding the share trend of white LED manufacturers, there are more than ten manufacturers in total other than the first court Plaintiff, and the first court Plaintiff continuously ranked first in the share from 2012 to 2016. In this regard, the share was 23.7% in 2012, 24.2% in 2013, 25.4% in fiscal 2014, 19.6% in fiscal 2015, and 19.1% in fiscal 2016.

b. Regarding the white LED applied market analysis by field/applications, the market size by field from 2012 to 2017 decreased from 61.2% to 44.4% for application of the liquid crystal backlights and increased from 34.5% to 50.8% for application of general lighting. On the other hand, the quantity basis of the liquid crystal backlights for application of the liquid crystal TV sets was around 40% from 2012 to 2016, which is much larger than the other applications (laptop PC, liquid crystal monitor, tablet terminal, smartphone, and the like).

(d) Regarding the directly under type backlight, there are backlight manufacturers manufacturing the directly under type backlight besides the LED manufacturers in distribution channels, and the backlight manufacturers supply the directly under type backlights as component members to the TV set manufacturers.

E. License policy and the like of first court Plaintiff

(a) The first court Plaintiff ranked second in the world and held the share of 14.1% in 2016 with the income of LED for backlight (including TV set, monitor, laptop PC, and tablet) (Exhibit Otsu 84).

(b) The first court Plaintiff repeated institution of patent lawsuits and negotiations with follower manufacturers in many countries from about 1996, but since the technological level of the LED by the follower manufacturers improved in 2002, the first court Plaintiff reconciled with the manufacturers having supplementary technologies with each other by concluding cross-license contracts. At that time, with very few exceptions, the first court Plaintiff did not grant a license to the LED manufacturer in a form other than cross-license. That is because of the management policy that the patent is means for protecting their own technologies, not depending on the license revenue, and the profits should be gained by sales of their own products (Exhibit Ko 84-1).

(3) Calculation of license fee rate

In addition to the meanings and the like of Present Inventions 1 to 3 held in the judgment in prior instance, No. 3 cited after correction, the amount equivalent to the license fee shall be examined below on the basis of the circumstances found in the aforementioned (2).

A. Basis to be multiplied by license fee rate (royalty basis)

(a) In addition to the point pointed out on Article 102, paragraph (3) of the Patent Act in the aforementioned (1), in view of the circumstances that [i] the present LED was mounted on the directly under type backlight and used in the first court Defendant's Product, but it should be considered that the directly under type backlight is one of main components mounted inside the first court Defendant's Product which is a liquid crystal TV set and cannot be easily separated from the first court Defendant's Product; [ii] performances of the LED largely influence the image quality of the liquid crystal TV, and what LED would be used and how it would be manufactured also influences manufacturing costs; and [iii] the first court Defendant sold the first court Defendant's Product as a finished product utilizing the characteristics of the present LED as will be described later in B, and in view that the first court Defendant has gained profits from the sales of the first court Defendant's Product and the like, it is reasonable to calculate the amount equivalent to the license fee in Article 102, paragraph (3) of the Patent Act on the basis of the sales of the first court Defendant's Product.

(b) On the other hand, the first court Defendant asserts that contribution of Present Patents 1 to 3 is limited to the LED chip, but that cannot be employed. Moreover, the first court Defendant asserts that the LED chip independently has objective market value and is distributed, but even so, in view of the circumstances in the aforementioned (a)[i] to [iii], it is not reasonable to have the price of the LED be the basis of the royalty in this case. The directly under type backlight is also found to have an independent market value, but in view of the aforementioned circumstances in (a)[i] to [iii], it is not reasonable, either, to have the price of the directly under type backlight be the basis of the royalty. Moreover, the first court Defendant asserts that if the final product is used as the basis for calculating the license fee, the higher the price of the final product in which the present LED is mounted, the higher the amount of the license fee becomes, but if the present LED is mounted on the product with a higher price and yields a higher amount of income, it is not irrational to claim the license fee according to the contribution degree of the present LED to the sales of the product.

B. License fee rate

(a)a. With few exceptions, the first court Plaintiff did not grant a license to an LED manufacturer in the form other than cross-license (aforementioned (2)E(b)), and if the patent right was infringed, when replacement with the LED manufactured by the first court Plaintiff can be done, the license fee rate at approximately 5% was used on that premise, while if the replacement was difficult, reconciliation was made by using the license fee rate higher than that. In the case related to the sales of the LED bulb

which infringes two patent rights including Present Patent 1 in 2016, the license fee rate of 10% was assumed, and the amount equivalent to the consumption tax of 8% was added, and reconciliation was made in the court (aforementioned (2)A(c)).
b. Until the fiscal year 1998, there were not a few contracts with the license fee rate of 8% or more for the semiconductor in the electronic/communication component fields (aforementioned 2A(a)c).
c. Present Patent 1 is a patent related to a light emitting device with little deterioration in characteristics during long-time use and with extremely low color shift or lowered brightness, and Present Patents 2 and 3 are patents related to a method of providing an inexpensive light emitting device in which separation at dicing is prevented, resins to be disposed are reduced, and production efficiency is drastically improved, and at the device. These characteristics can be considered to be greatly utilized as the white LED for a back monitor of a liquid crystal TV set, and particularly Present Patent 1 had an extremely important industrial meaning and made great contribution to rapid expansion of the subsequent LED market (aforementioned (2)B(a), (c)a, the same C(b)b, c, e, the same D(b)a).

On this point, it is found that the white LED using the fluorescent body other than the YAG-based fluorescent body was present (the same B(b), (c)), but the first court Plaintiff continuously had the first rank in the share of the white LED manufacture from 2012 to 2016 and had the second rank in the world share for the income from the LED for backlight in 2016 (the same D(c)a, the same E(a)), and the YAG-based fluorescent body held the most of the yellow fluorescent bodies in the shipment result in 2015 (the same D(b)c). In view of the above, it is found that, in the period from January in 2014 to December in 2016, which is a sales period of the first court Defendant's Product, the first court Plaintiff's product ranked considerably advantageously as compared with the other products regarding the white LED for back light of a liquid crystal TV set.
d. By comprehensively examining those described in the aforementioned a to c combined with the description on the license fee rate made on the Article 102, paragraph (3) of the Patent Act in the aforementioned (1) and the other circumstances related to the characteristics and the range of the license fee rates, values of the white LED using the YAG-based fluorescent body and the like in the related technical fields found in the aforementioned (2), it is found that the license fee rates of Present Inventions 1 to 3 in the period from January in 2014 to December in 2016 (however, for Present Patent 3, October 23, 2015 and after, and for Present Patent 2, December 16, 2016 and after) should be considerably high numerical values not falling under

10%.

It is to be noted that [i] Phillips published that the license fee rate of the single-color LED lighting was 3% in 2016 (aforementioned (2)A(d)); and [ii] average values of the license fee rates in the technical field to which the LED belongs are numerical values such as 3.3% and 2.9% (the same A(a)a, (b)). However, the numerical values in the aforementioned [i] are numerical values used when the patent of Phillips is to be licensed, and the aforementioned [ii] is the average values of the license fee rates in a variety of fields and neither of them influences the aforementioned finding.

(b) The first court Defendant's Product, which is a liquid crystal TV set, is made of a large number of components other than the present LED, and it is not reasonable to apply the license fee rate in the aforementioned (a) as is, but as described in the aforementioned (a)c, the arts of Present Inventions 1 to 3 can be considered to be greatly utilized as the white LED for a back monitor of a liquid crystal TV set and moreover, the first court Defendant's Product sold well with beautiful images as one of sales points (aforementioned (2)C(b)c, d) and thus, the contribution of the arts of Present Inventions 1 to 3 to the sales of the first court Defendant's Product is considerably large, and even if the circumstances related to the price of the white LED and the like found in the aforementioned (2) are considered, it is reasonable to find that the license fee rate on the basis of the sales of the first court Defendant's Product in the period from January in 2014 to January in 2016 (however, for Present Patent 3, October 23, 2015 and after, and for Present Patent 2, December 16, 2016 and after) does not fall under 0.5%.

C. Assertion of first court Defendant

The first court Defendant asserts that, since the chip different from the LED chip asserted/verified by the first court Plaintiff is used in the first court Defendant's Product 2, and the sold quantity of the first court Defendant's Product 2 in which the LED (B) asserted/verified by the first court Plaintiff is used is not known, the claim for compensation for damage related to the first court Defendant's Product 2 may not be approved. However, from the holding in the judgment in prior instance No. 3, 1(5) (judgment in prior instance, page 93) cited after correction, it should be presumed that LED (B) that infringes Present Patents 1 to 3 was used in the first court Defendant's Product 2 through its sales period, and the aforementioned assertion by the first court Defendant and the evidences (Exhibits Otsu 66, Otsu 70) supporting that are not enough to overcome the presumption.

Moreover, the assertion by the first court Defendant is not enough to influence the finding in the aforementioned B.

(4) Calculation of the amount that the first court Plaintiff can claim against the first court Defendant

On the ground of the above, the amount that the first court Plaintiff can claim from the first court Defendant is as follows.

A. Regarding the amount equivalent to the license fee, the total sales of the first court Defendant's Products are 24,933,687,037 yen in total, among which the amount of the first court Defendant's Product 1 is 14,712,305,518 yen and the amount of the first court Defendant's Product 2 is 10,221,381,519 yen, and by multiplying the amount by the license fee rate of 0.5% in the aforementioned (3), it makes 124,668,435 yen (rounded off to the nearest whole number).

B. The amount equivalent to the attorney's fee is reasonably found to be 12,000,000 yen as asserted by Plaintiff.

C. Therefore, the first court Plaintiff can claim 136,668,435 yen in total at least as a compensation for damage against the first court Defendant, but since this amount exceeds the amount of claim by the first court Plaintiff, the claim for compensation for damage by the first court Plaintiff has grounds for the whole without even determining on addition of the amount equivalent to the consumption tax.

No. 4 Conclusion

Thus, the first court Plaintiff's claim for compensation for damage requesting payment of 132,000,000 yen and the delay damages thereto at the rate of 5% per annum prescribed in the Civil Code before revision by the 2017 Law No. 44 from August 29, 2017 to completion of the payment has grounds, but the judgment in prior instance which was different from that and partially approved the claim to the limit of 17,956,641 yen and the delay damages to that and dismissed the remaining is partially unreasonable, and the present appeal by the first court Plaintiff has grounds. Therefore, the judgment in prior instance shall be modified, the appeal by the first court Defendant shall be dismissed since it has no grounds, and the judgment shall be rendered as in the main text.

Intellectual Property High Court, Second Division
Presiding Judge: MORI Yoshiyuki
Judge: SANO Shin
Judge: NAKAJIMA Tomohiro