



VERIFICATION

The undersigned, of the below address, hereby certifies that he/she well knows both the English and Japanese languages, and that the attached is an accurate English translation of the Japanese Patent application filed on October 9, 2003 under No. P2003-350647.

The undersigned declares further that all statements made herein of his/her own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 20th day of February, 2008.

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ZEISS 1108

PATENT OFFICE  
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This is to certify that the annexed is a true copy of the following application as filed with this Office.

Date of Application: October 9, 2003

Application Number: Japanese Patent Application  
No2003-350647

Applicant(s): NIKON CORPORATION

Commissioner,

Patent Office

(Seal)

(Document Name) Patent Application  
(Reference Number) 03-0671NK  
(Presentation Date) October 9, 2003  
(Directly) Commissioner of the Patent Office  
(IPC) H01L 21/027  
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(Pre-Paid Master Note Number) 168687

(Amount to be paid) 21,000 yen

(Lists of the Article to be presented)

(Name of Article) Claims 1

(Name of Article) Specification 1

(Name of Article) Drawing 1

(Name of Article) Abstract 1

(General Power of Attorney Number) 0016868

[Claims]

[Claim 1]

A catadioptric projection optical system for forming an image of a first plane on a second plane, comprising:

5           a first imaging optical system comprising two mirrors, for forming an intermediate image of the first surface; and

          a second imaging optical system for forming the intermediate image on the second surface,

          wherein the second imaging optical system comprises the  
10 following components in order of passage of a ray from the intermediate image side:

          a first field mirror of a concave shape;

          a second field mirror;

          a first lens unit comprising at least two negative lenses, and  
15 having a negative refracting power;

          a second lens unit having a positive refracting power;

          an aperture stop; and

          a third lens unit having a positive refracting power.

[Claim 2]

20 The catadioptric projection optical system according to Claim 1,

          wherein the first imaging optical system comprises a fourth lens unit having a positive refracting power, a negative lens, a concave mirror, and an optical path separating mirror, and

          wherein the first imaging optical system is arranged as follows:  
25 light traveling in the first imaging optical system passes through the fourth lens unit and the negative lens, is then reflected by the concave

mirror, and passes again through the negative lens to be guided to the optical path separating mirror; the light reflected by the optical path separating mirror is reflected by the first field mirror and the second field mirror and thereafter directly enters the first lens unit in the second  
5 imaging optical system.

[Claim 3]

The catadioptric projection optical system according to Claim 1 or 2,

wherein the first field mirror outputs light entering the first field mirror, so as to bend the light into a direction toward the optical axis of  
10 the catadioptric projection optical system.

[Claim 4]

The catadioptric projection optical system according to any one of Claims 1 to 3,

wherein the second field mirror has a convex shape.

15 [Claim 5]

The catadioptric projection optical system according to any one of Claims 1 to 4,

wherein said two mirrors in the first imaging optical system are a mirror of a concave shape and a mirror of a convex shape which are  
20 arranged in order of incidence of light from the first surface, and wherein the second field mirror in the second imaging optical system is a mirror of a convex shape.

[Claim 6]

The catadioptric projection optical system according to any one of  
25 Claims 1 to 5,

wherein the aperture stop is disposed between the first field

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