

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 January 2026 (02.01.2026)



(10) International Publication Number
WO 2026/003408 A1

- (51) International Patent Classification:
G01B 11/06 (2006.01) *G01B 11/25* (2006.01)
- (21) International Application Number:
PCT/FI2024/050362
- (22) International Filing Date:
28 June 2024 (28.06.2024)
- (25) Filing Language: English
- (26) Publication Language: English
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- (81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG,
KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY,
MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA,

NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,
RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

- (84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, CV,
GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST,
SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ,
RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT,
LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE,
SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- of inventorship (Rule 4.17(iv))

Published:

- with international search report (Art. 21(3))
— in black and white; the international application as filed
contained color or greyscale and is available for download
from PATENTSCOPE

(54) Title: OPTICAL SENSOR

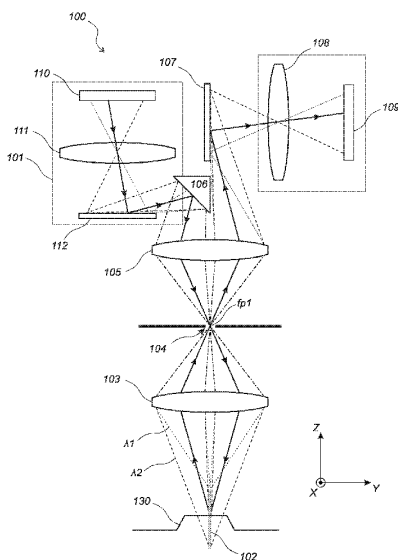


FIG. 1

(57) Abstract: The invention relates to the field of optical displacement sensors for measuring the displacement of a measurement object relative to the sensor. The invention may be used in the context of a displacement sensor for measuring the displacement of the measurement object relative to the optical sensor, for measuring the 2D profile of the measurement object, or for measuring the 3D shape of the measurement object. An optical sensor according to the present invention is configured to project polychromatic measurement light within a measurement region; using an objective lens component, focus measurement light reflected from the intersection of a surface of the measurement object and the measurement region at a first focus point such that the wavelength of the focused measurement light at the first focus point depends on the distance of the intersection of the surface of the measurement object and the measurement region from the objective lens component, wherein the first focus point is located within a first aperture; using a second lens component, focus measurement light received from the first aperture onto the surface of a diffractive or non-specular reflective component at different distances from the second lens component depending on the wavelength of the received measurement light; image measurement light diffracted or reflected from the diffractive or non-specular reflective component onto an active surface of a photodetector; and sense the intensity of light received at different positions on the active surface of the photodetector.



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