

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
22 August 2024 (22.08.2024)



(10) International Publication Number
WO 2024/172750 A1

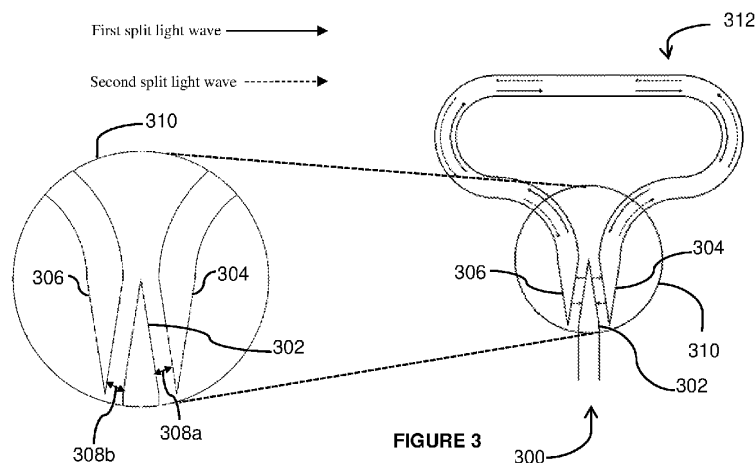
- (51) **International Patent Classification:**
H01S 5/183 (2006.01) *H01S 5/30* (2006.01)
- (21) **International Application Number:**
PCT/SG2023/050078
- (22) **International Filing Date:**
14 February 2023 (14.02.2023)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (71) **Applicants:** **COMPOUNDTEK PTE. LTD.** [SG/SG]; 5 International Business Park, #02-07A Mewah Building, Singapore 609914 (SG). **NANYANG TECHNOLOGICAL UNIVERSITY** [—/SG]; 50 Nanyang Avenue, Nanyang, Technological University, Singapore 639798 (SG).
- (72) **Inventors:** **BRIAN SIA, Jia Xu**; c/o Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 (SG). **WANG, Hong**; c/o Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 (SG). **ANG, Kian Siong**; 30 Sturdee Road, #19-05, Singapore 207852 (SG).
- (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, 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).

Published:
— with international search report (Art. 21(3))

(54) **Title:** REFLECTOR FOR USE IN LASER ARCHITECTURE



(57) **Abstract:** The present invention relates to a reflector (300) for laser architecture. The reflector (300) includes a coupling section (310) formed of waveguides and including three ports (302-306) and a loop section (310) formed of a waveguide and optically coupled to the coupling section (310). The reflector (300) is an ultra-broadband on-chip laser coupling section reflector or an ultra-broadband coupling section laser reflector and is operable in an O band, C band or L band.

WO 2024/172750 A1