

OPT↓MAN

YOUR SIDEKICK FOR
LASER OPTICS DEVELOPMENT

***LOW ABSORPTION AND ENHANCED LIFETIME COATINGS
FOR ER:YAG MEDICAL LASERS AT 2940NM***

EPIC MEMBERS NEW PRODUCT RELEASE

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2023.04.04





WHAT DOES OPTOMAN DO?

OPTOMAN

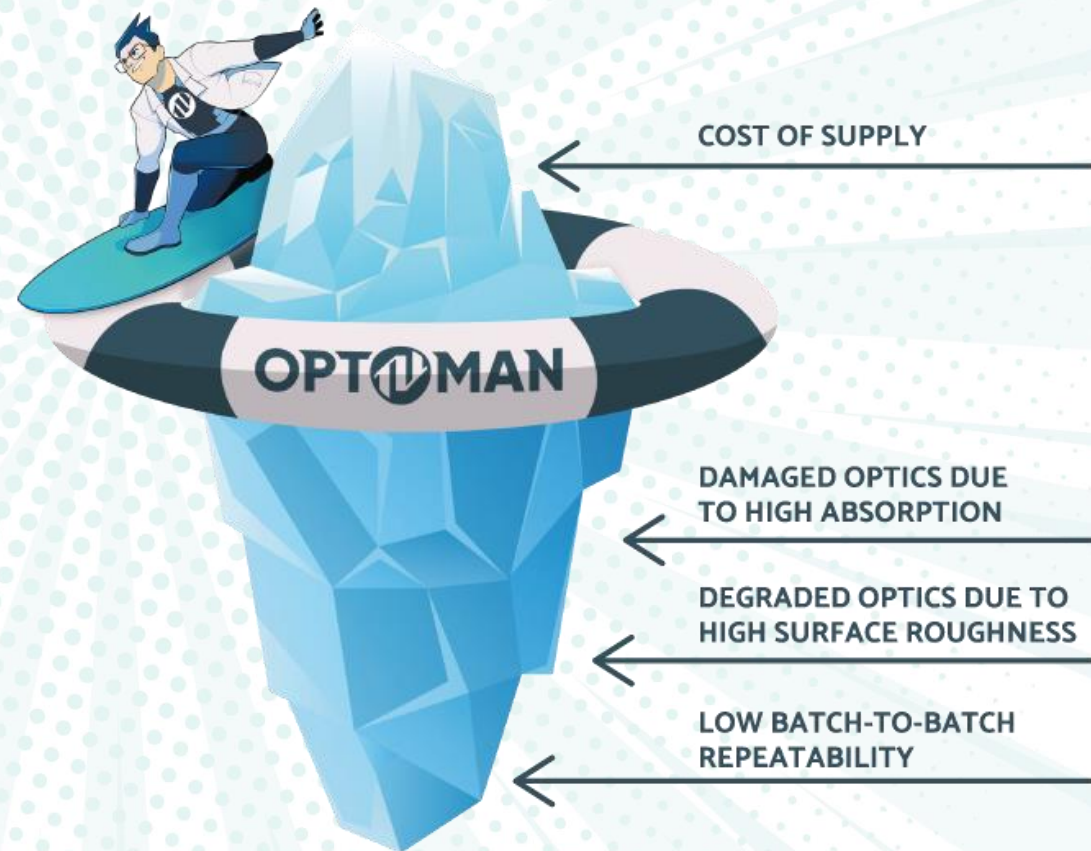
WHAT DOES OPTOMAN DO?

OPTOMAN does highly customized and application optimized IBS coated laser optics

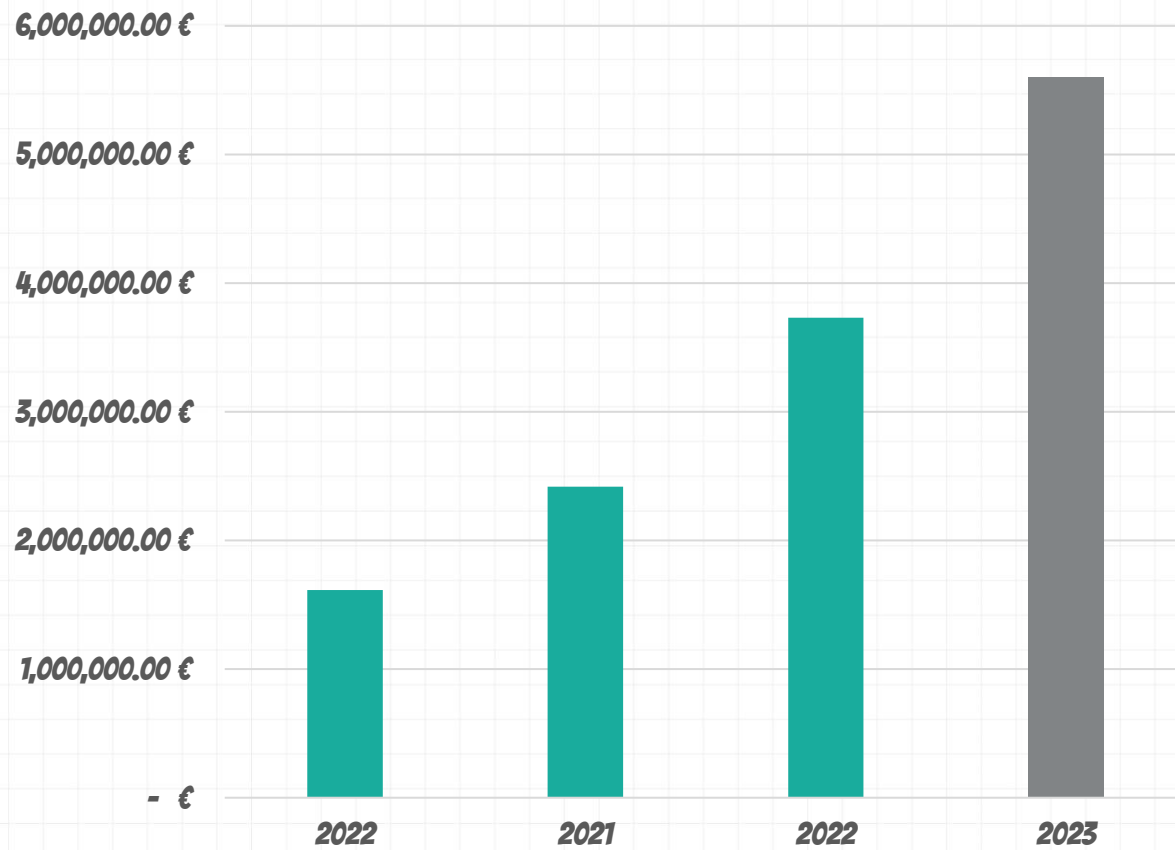
OPTOMAN aims to increase **longevity and reliability** of our partners' laser systems, eventually resulting in a **lower total cost of ownership**.



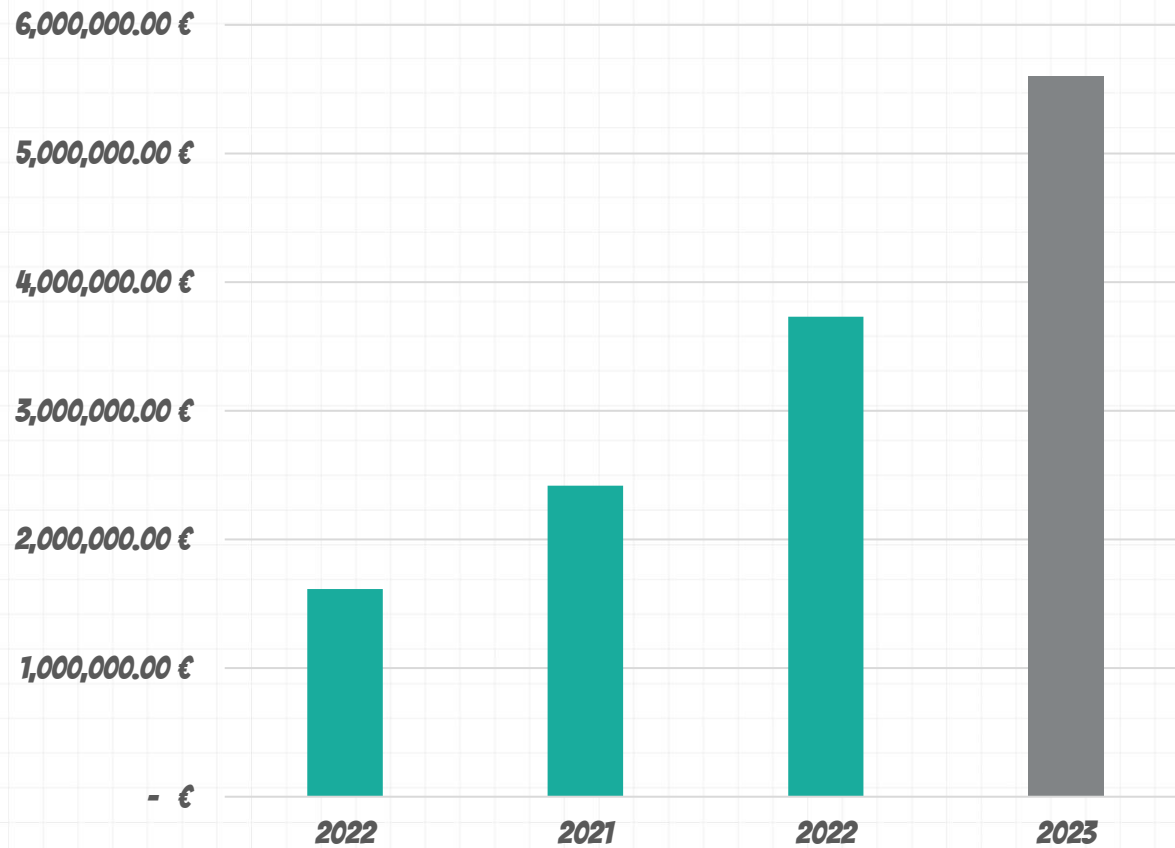
LOWER TOTAL COST OF OWNERSHIP



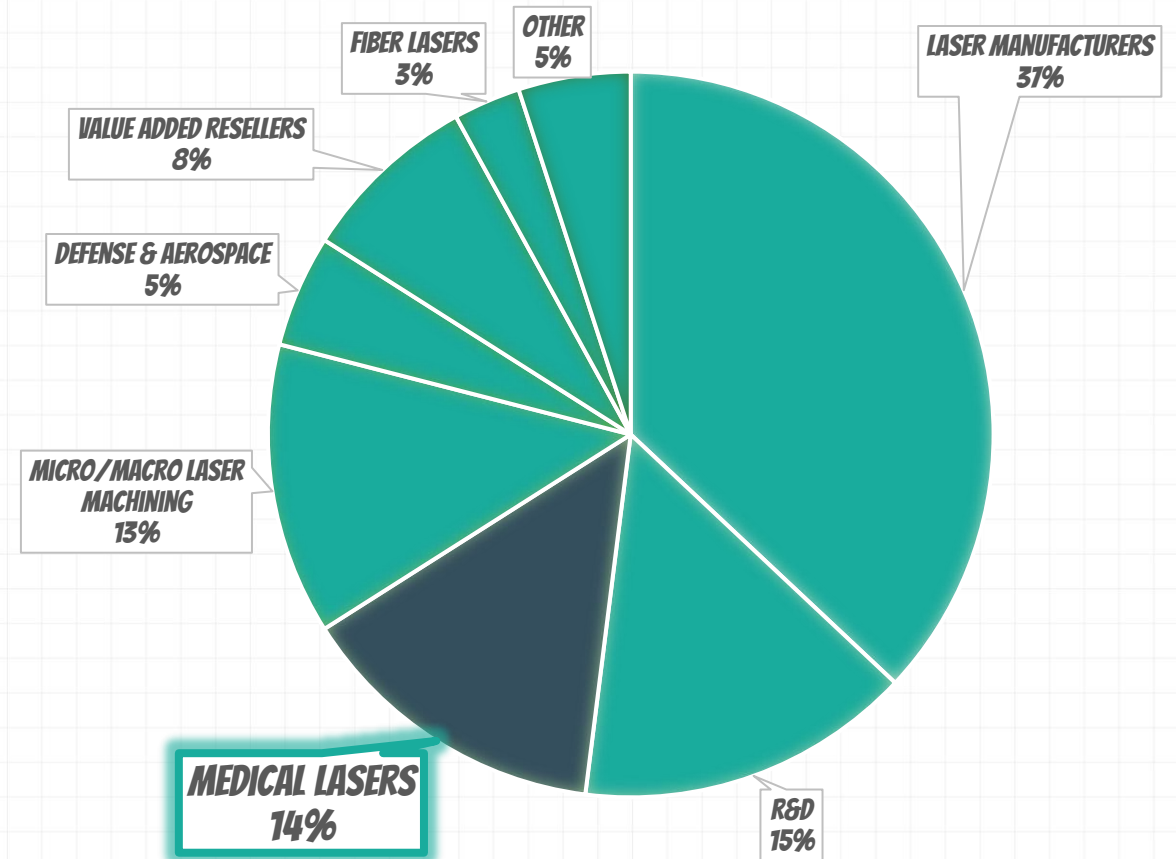
TOTAL REVENUE



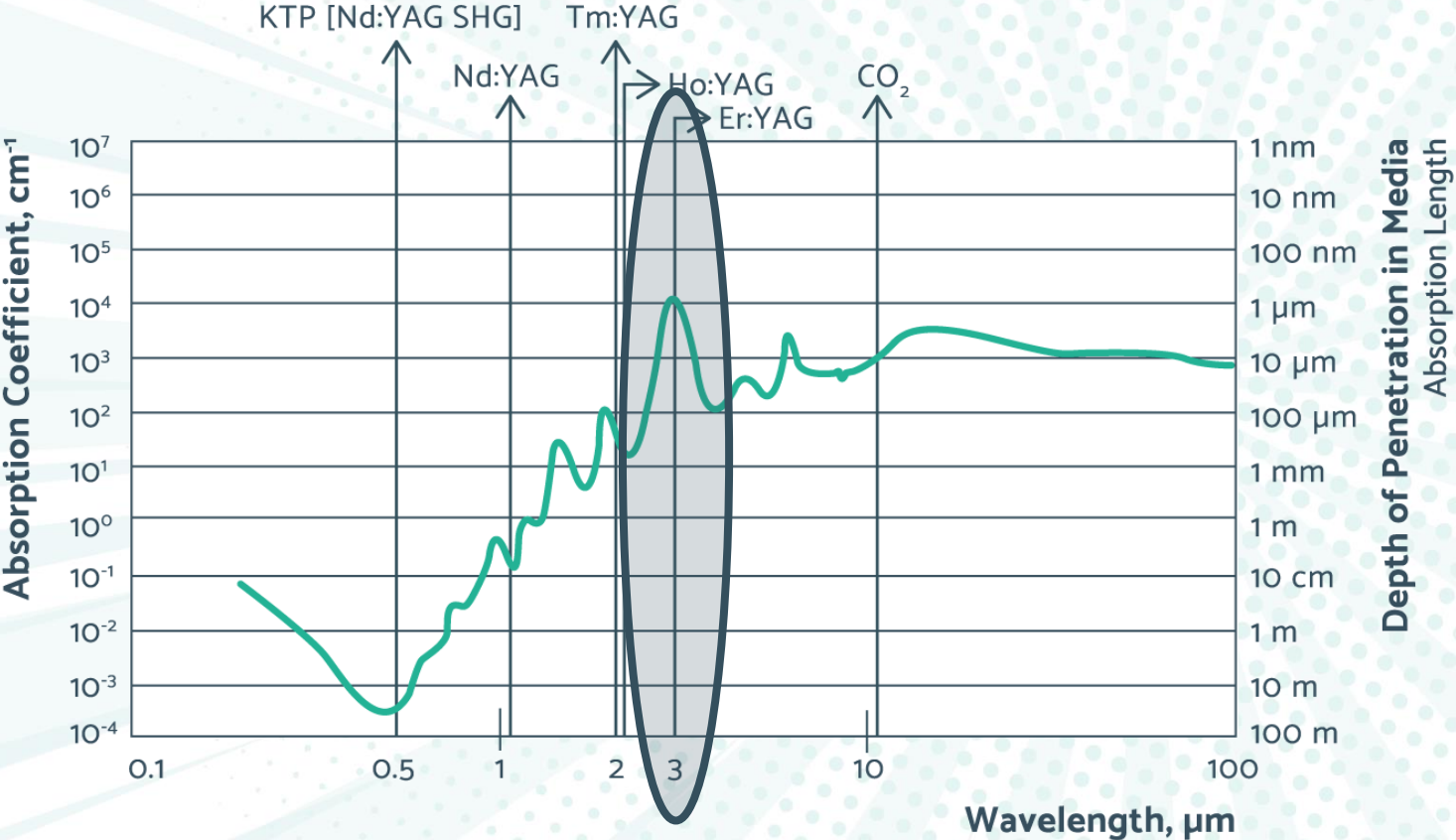
TOTAL REVENUE



SALES DISTRIBUTION BY MARKETS



ER:YAG LASER



BEATING DR. ABSORPTION



DR. ABSORPTION

ABSORPTION - DRIVER OF THERMAL EFFECTS

HIGH ABSORPTION - LOW DUTY CYCLE

MAIN CAUSE OF LASER DAMAGES

IBS - WEAPON AGAINST DR. ABSORPTION

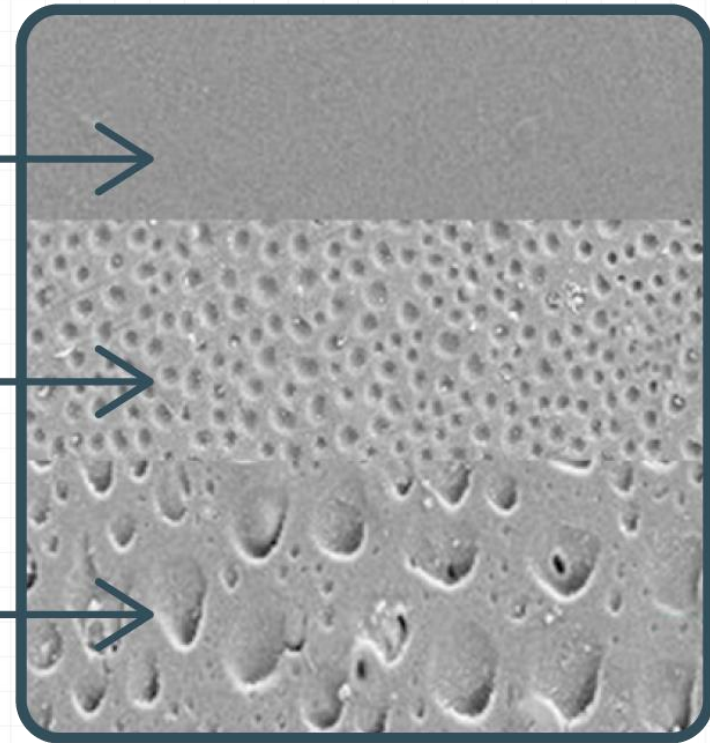


BULK-LIKE DENSITY

**ION-BEAM
SPUTTERING**

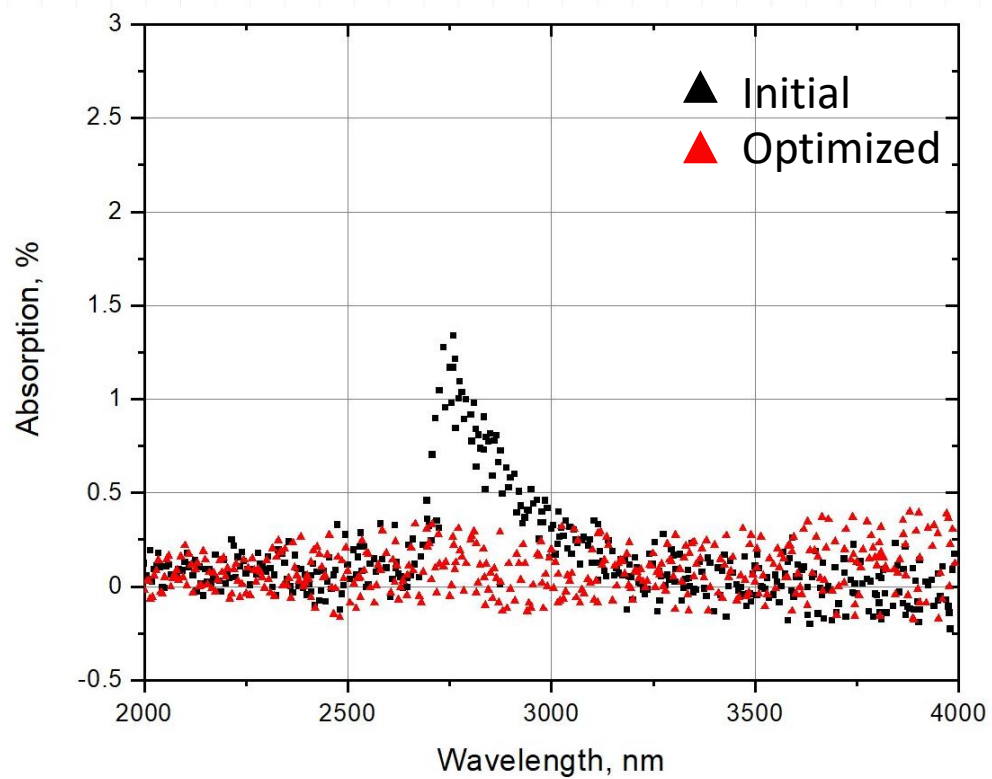
**ION-ASSISTED
DEPOSITION**

**ELECTRON BEAM
EVAPORATION**

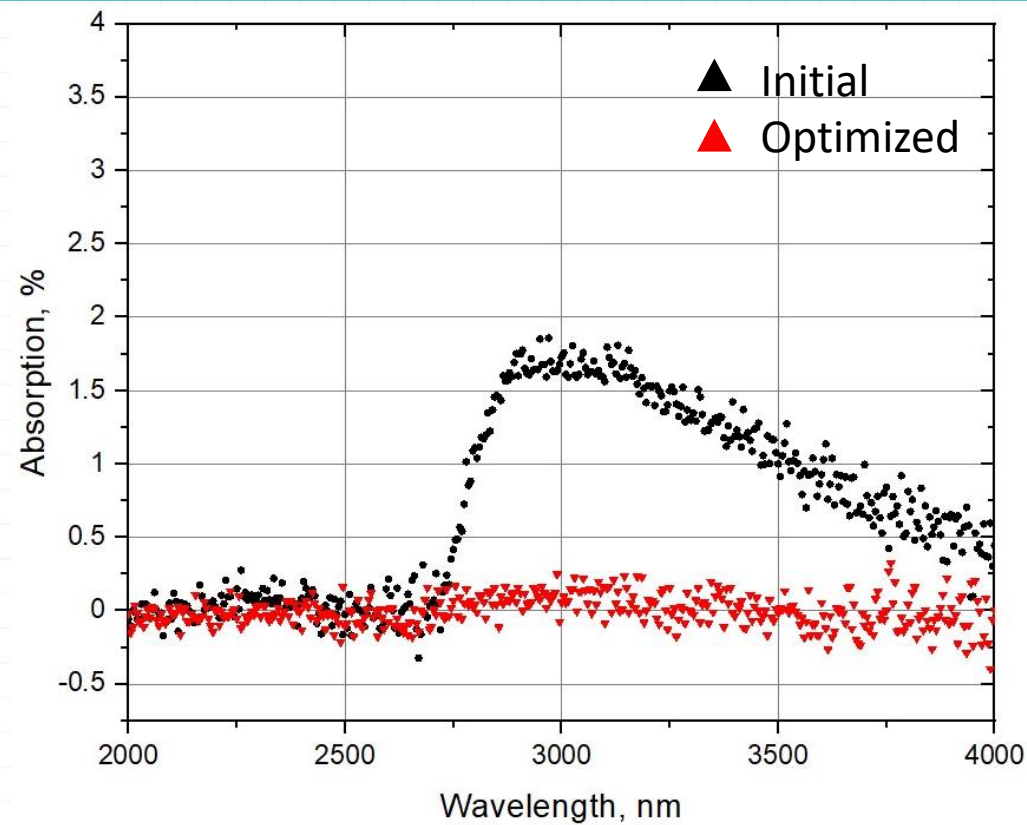


BEATING DR. ABSORPTION

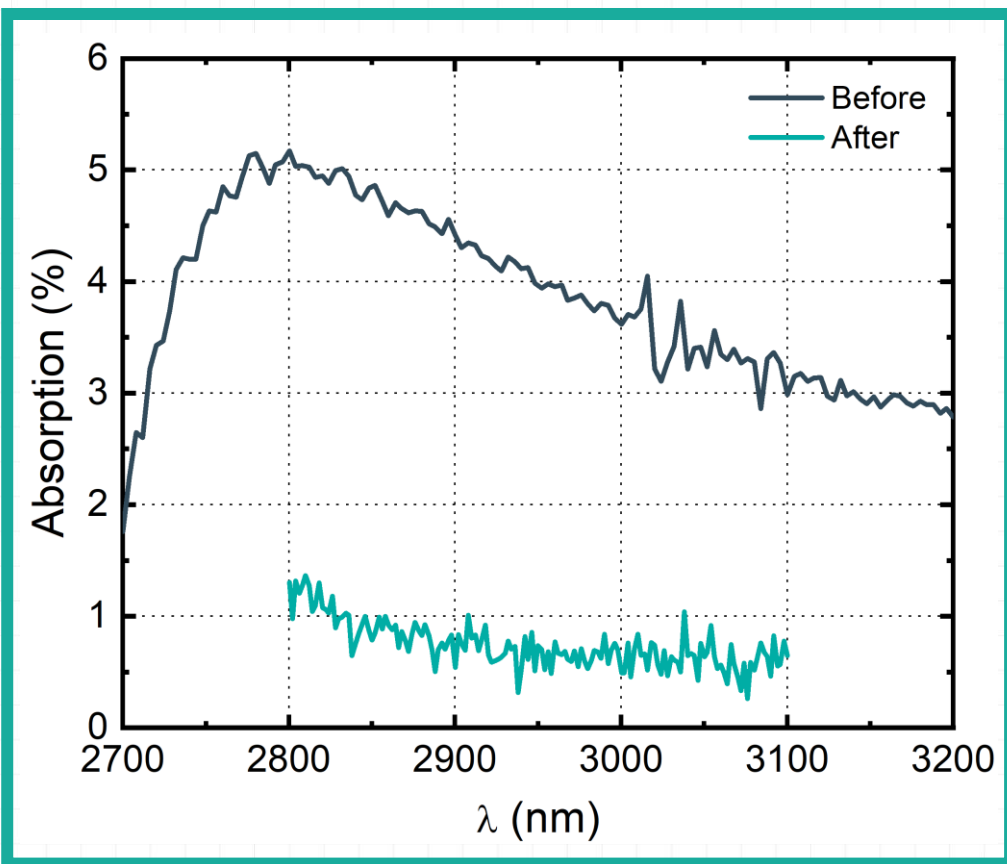
LOW REFRACTIVE INDEX MATERIAL



HIGH REFRACTIVE INDEX MATERIAL



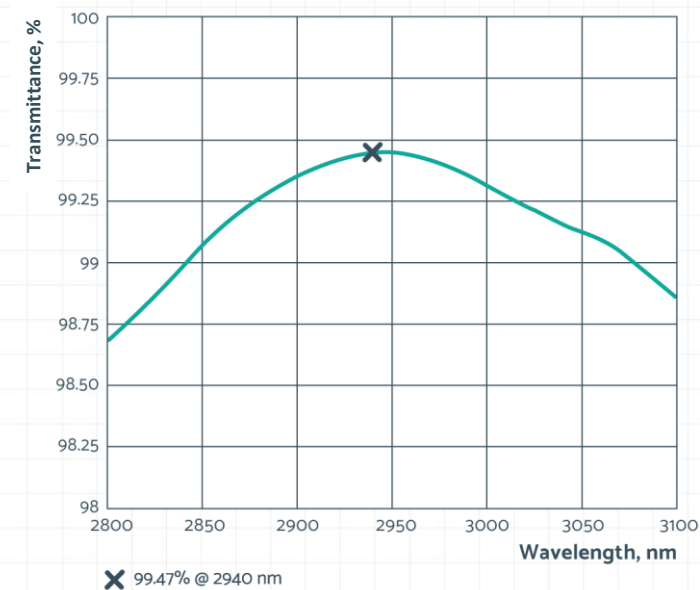
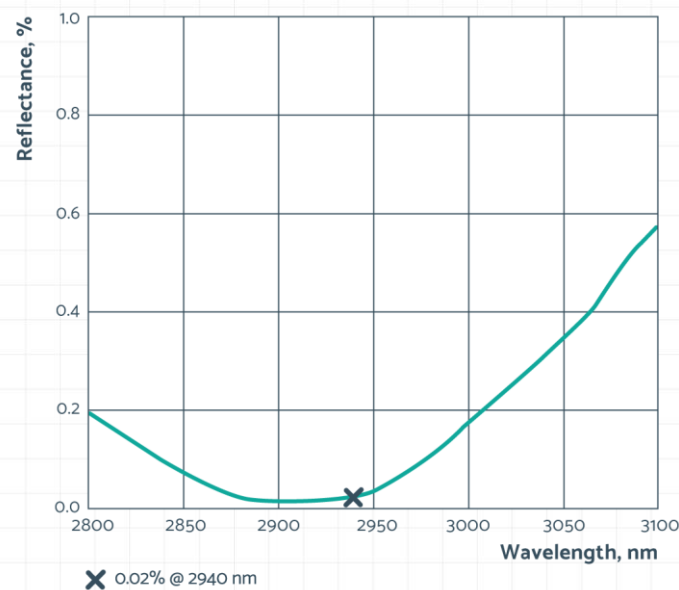
WINDOW @ 2940 NM



Material: Sapphire

S1/S2: AR<0,25% @ 2940+ AR<4%@ 510-530+630+650, AOI = 0°

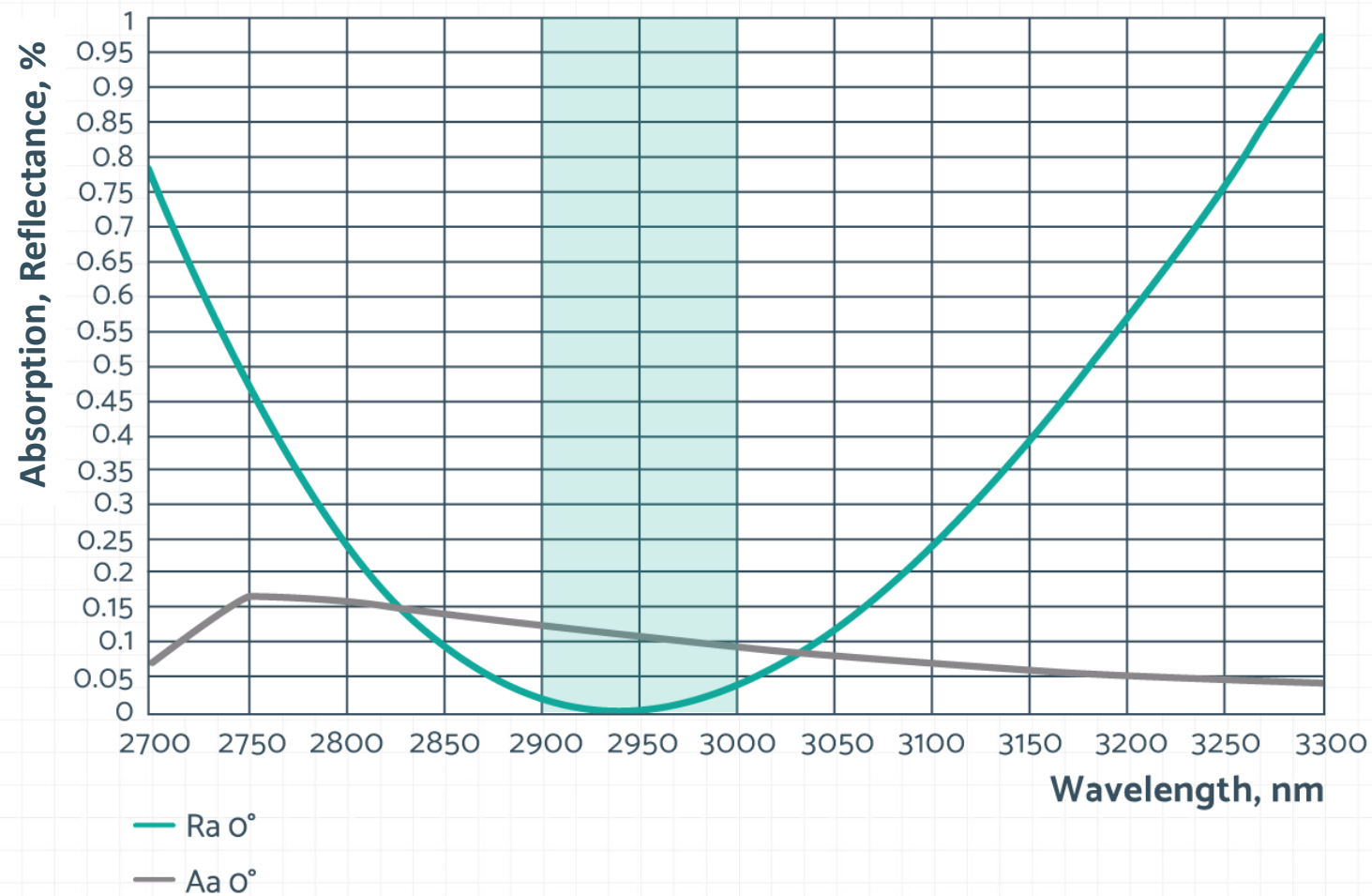
Absorption <0,5%@ 2940 nm (per surface)



WINDOW @ 2940 NM

WHAT'S NEXT?

Absorption <0,2% @ 2940 nm (per surface)



OUTPUT COUPLER @ 2940 NM

Substrate material: Sapphire (c-cut, IR grade)

Diameter: 12.7 mm +0/-0.1 mm

Thickness: 3 mm +/-0.1 mm

1

Coatings (IBS):

S1 (arrow marks): **PR = $81 \pm 1.5\%$ @ 2940 nm**, AOI = 0°

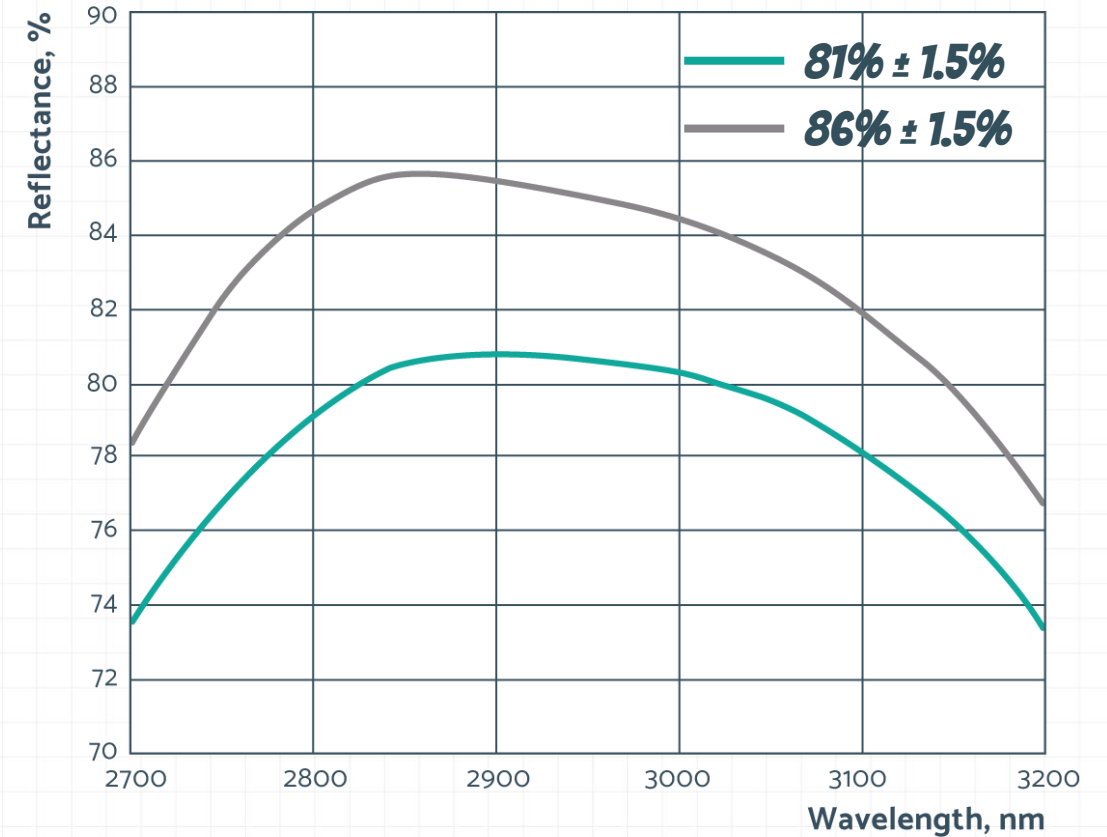
S2: AR<0.2% @ 2940 nm, AOI = 0°

2

Coatings (IBS):

S1 (arrow marks): **PR = $86 \pm 1.5\%$ @ 2940 nm**, AOI = 0°

S2: AR<0.2% @ 2940 nm, AOI = 0°



CAVITY MIRROR @ 2940 NM

Substrate material: IRFS (JGS3)

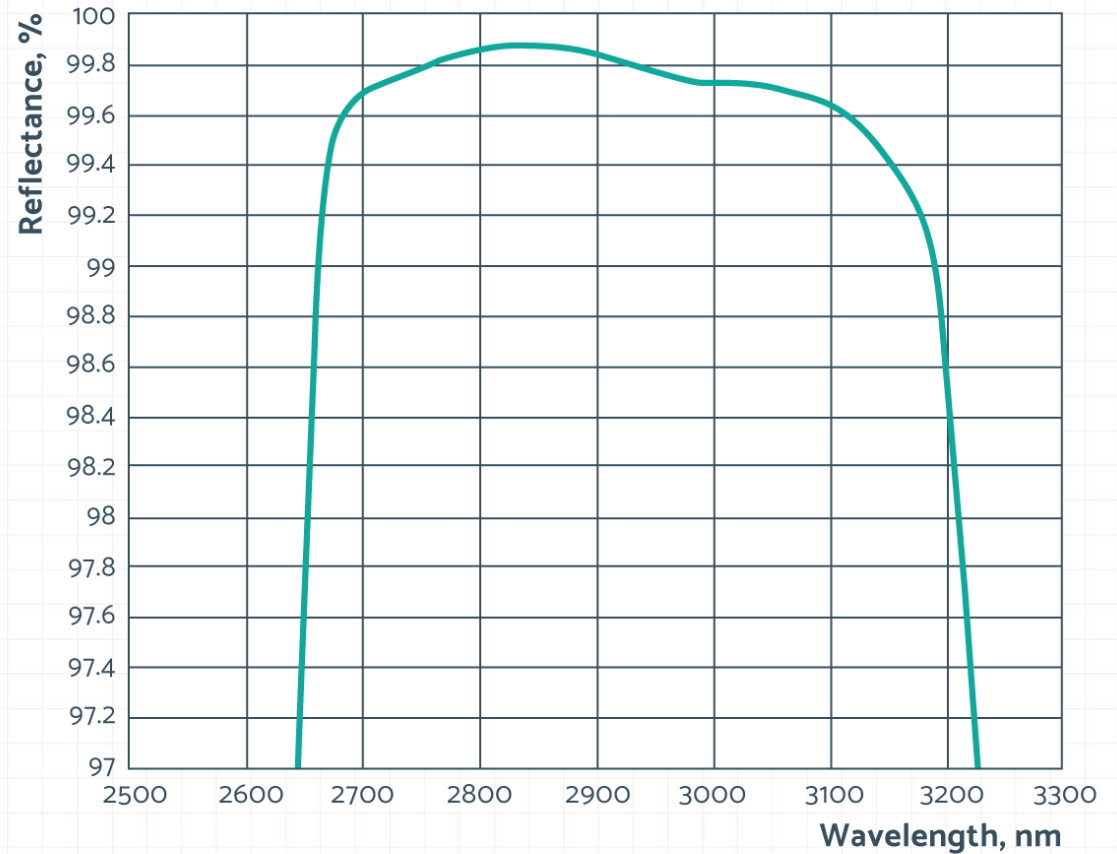
Diameter: 12.7 mm +0/-0.1 mm

Edge thickness: 6.35 mm +/-0.1 mm

Radius of curvature, S1: ROC = -1000 mm +/-1%

Coatings (IBS):

HR>99,8% @ 2940 nm, AOI = 0°



***LASER IS AS
DURABLE AS ITS
WEAKEST LINK!***



LIDARIS
LIDT Service

OPTIMAN



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