

**SPECIFICATION****Lenses for the H1 Squeezer**

APPROVALS	DATE	RE V	DCN NO.	BY	CHECK	DCC	DATE
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CHECKED:							
APPROVED: D.SIGG							
DCC RELEASE							

1 Description

Super-polished fused silica-UV grade lenses, AR/AR coated for 1064nm and 532nm

2 Material

High purity fused silica, UV grade

Grade 0A (Low inclusion class: <0.3 mm² cross section, 0.1 mm max. size;
Homogeneity < 1ppm)

3 Lens – 1 Plano / Convex

12.7mm +0.0/-0.1mm Ø X 6.35mm ± 0.1mm tk. (edge), ROC=+25mm ± 1%
Focal length (@1064nm) = +55.6mm ± 2%
Focal length (@532nm) = +54.3mm ± 2%

Lens – 2 Plano / Convex

12.7mm +0.0/-0.1mm Ø X 6.35mm ± 0.1mm tk. (edge), ROC=+38mm ± 1%
Focal length (@1064nm) = +84.5mm ± 2%
Focal length (@532nm) = +82.5mm ± 2%

Lens – 3 Plano / Convex

25mm +0.0/-0.1mm Ø X 6.35mm ± 0.1mm tk. (edge), ROC=+50mm ± 1%
Focal length (@1064nm) = +111.2mm ± 2%
Focal length (@532nm) = +108.5mm ± 2%

Lens – 4 Plano / Convex

25mm +0.0/-0.1mm Ø X 6.35mm ± 0.1mm tk. (edge), ROC=+75mm ± 1%
Focal length (@1064nm) = +166.8mm ± 2%
Focal length (@532nm) = +162.8mm ± 2%

Lens – 5 Plano / Convex

25mm +0.0/-0.1mm Ø X 6.35mm ± 0.1mm tk. (edge), ROC=+100mm ± 1%
Focal length (@1064nm) = +222.4mm ± 2%
Focal length (@532nm) = +217.1mm ± 2%



SPECIFICATION

Lenses for the H1 Squeezer**Lens – 6 Plano / Convex**

25mm +0.0/-0.1mm \varnothing X 6.35mm \pm 0.1mm tk. (edge), ROC=+150mm \pm 1%
Focal length (@1064nm) = +333.6mm \pm 2%
Focal length (@532nm) = +325.6mm \pm 2%

Lens – 7 Plano / Convex

25mm +0.0/-0.1mm \varnothing X 6.35mm \pm 0.1mm tk. (edge), ROC=+250mm \pm 1%
Focal length (@1064nm) = +556.0mm \pm 2%
Focal length (@532nm) = +542.6mm \pm 2%

Lens – 8 Plano / Concave

25mm +0.0/-0.1mm \varnothing X 6.35mm \pm 0.1mm tk. (edge), ROC=-25mm \pm 1%
Focal length (@1064nm) = -55.6mm \pm 2%
Focal length (@532nm) = -54.3mm \pm 2%

Lens – 9 Plano / Concave

25mm +0.0/-0.1mm \varnothing X 6.35mm \pm 0.1mm tk. (edge), ROC=-50mm \pm 1%
Focal length (@1064nm) = -111.2mm \pm 2%
Focal length (@532nm) = -108.5mm \pm 2%

Lens – 10 Plano / Concave

25mm +0.0/-0.1mm \varnothing X 6.35mm \pm 0.1mm tk. (edge), ROC=-100mm \pm 1%
Focal length (@1064nm) = -222mm \pm 2%
Focal length (@532nm) = -217.1mm \pm 2%

Lens – 11 Plano / Concave

25mm +0.0/-0.1mm \varnothing X 6.35mm \pm 0.1mm tk. (edge), ROC=-150mm \pm 1%
Focal length (@1064nm) = -333.6mm \pm 2%
Focal length (@532nm) = -325.6mm \pm 2%

**Lenses for the H1 Squeezer****4 Surface Roughness****Side 1**

Super polish

Surface Roughness: $<2\text{\AA}$ RMS in CA

Surface Quality: 10-5

Side 2

Super polish

Surface Roughness: $<2\text{\AA}$ RMS in CA

Surface Quality: 10-5

5 Surface Figure**Side 1**Flat $< \lambda/10$ at 632.8 over central 80%**Side 2**Flat $< \lambda/10$ at 632.8 over central 80%**6 Coating****Side 1 and Side 2**AR coating/ 0° (IBS)R $< 0.1\%$ @ 1064nmR $< 0.2\%$ @ 532nm**Coating vendor to provide:**

1. Three spectrophotometer graphs of the reflectance of the AR coatings; one covering the spectrum from 300nm to 1200nm; the other two, with increased sensitivity, showing wavelengths from 450nm to 650nm and 900nm to 1100nm
2. Spectrophotometer graphs of the reflectance of the AR coating taken as cited above.