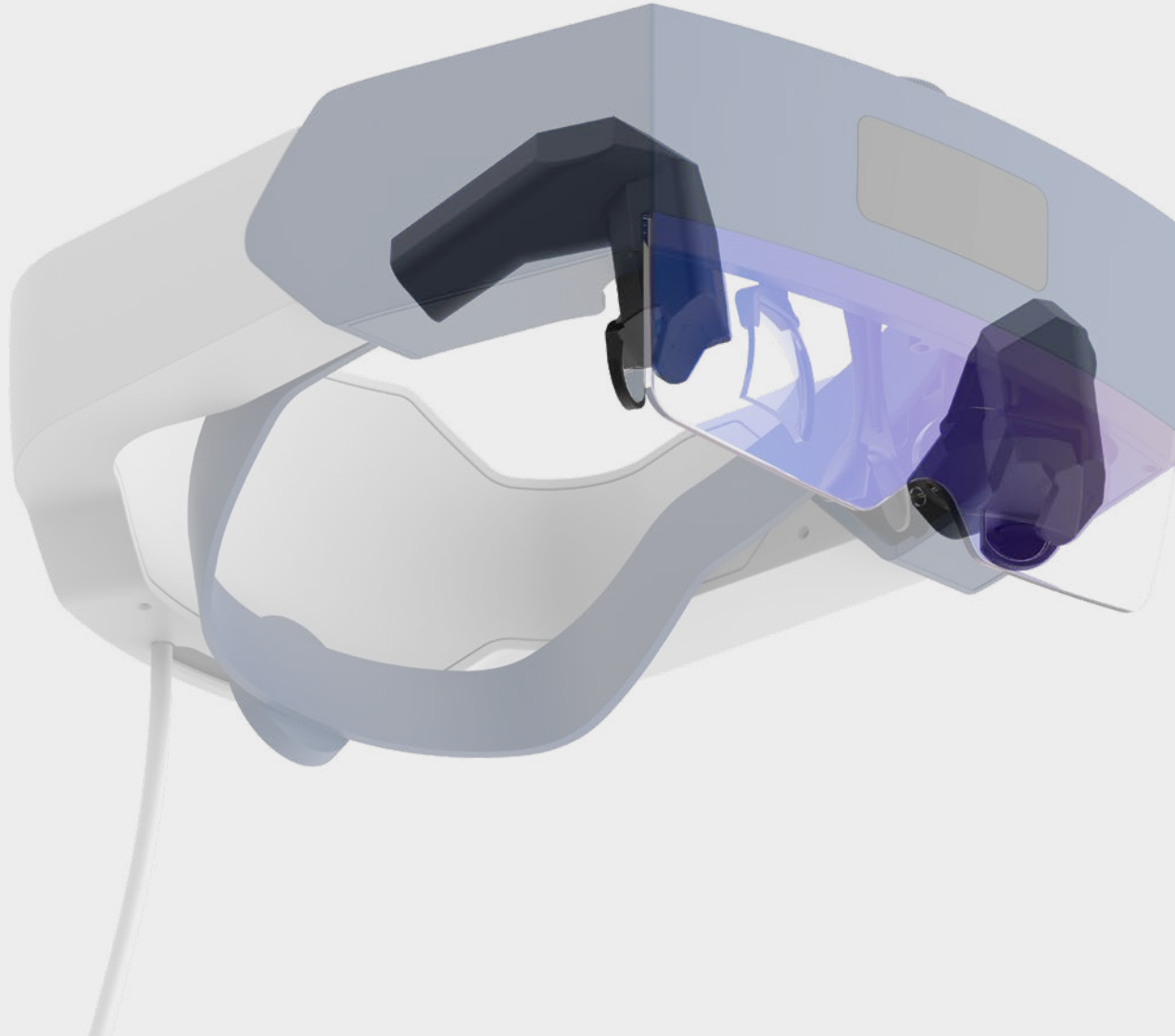




AR WITHIN ARM'S REACH





Per eye	Today	Target (early 2023)
Angular resolution at infinity	20 px/°	60 px/°
Angular resolution at 25 cm	10 px/°	50 px/°
Modulator resolution	~ HD	~ HD
Depth resolution	continuous	continuous
FoV (diagonal)	55°	60° foveated: l.-f. in 30° FoV
Eyebox (at exit pupil)	5 mm	10 mm
Eye relief	30 mm	20 mm
Colors	1 million	2 millions
Rendering load (equivalent to flat image)	4 K	HD
Frame rate	120 Hz	120 Hz



Per eye	Today	Target (early 2023)
Sub-frame rate	2.9 kHz	6.5 kHz
Brightness	100 nits	1000 nits
Contrast	1 000/1	10 000/1
Combiner type	curved semi-reflective	HOE
Transparency	50%	80%
Power consumption	3800 mW	900 mW
- light source and driver	500 + 400 mW	50 + 50 mW
- modulator and driver	600 + 1600 mW	400 + 400 mW
Module volume (l.-f. engine)	60 cm ³	10 cm ³
Module weight (l.-f. engine)	81 g	32 g

	Real light-field	No eye-tracking required	Depth resolution (planes)	Spatial resolution	Complexity (HW/SW)	Image quality	Eye box
	✓	✓	Unlimited*	> 1 Mpix	✓	✓	—
Holography	✓	✓	Unlimited*	> 1 Mpix	✗	—	—
Microlens array	✓	✓	> 10	< 100 Kpix	—	✗	—
Multiple depth planes	✗	—	2-4	> 1 Mpix	✗	✓	✓
Varifocal elements	✗	—	> 100	> 1 Mpix	✓	✓	✓

* Resolution is finite, however much higher than an eye can resolve



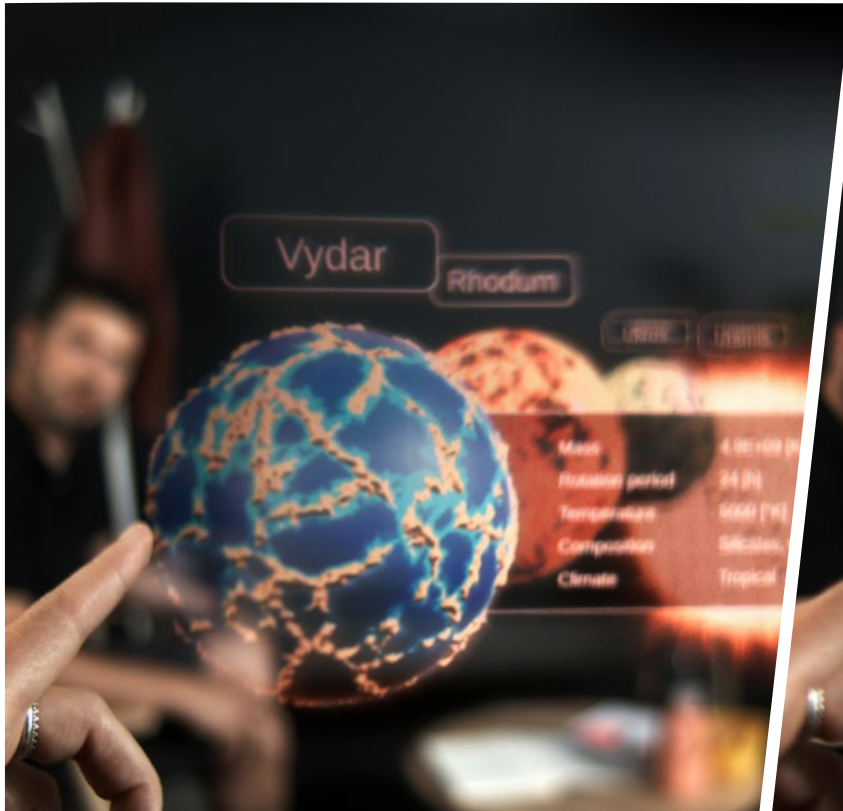
Eye focus

0.5 M



Eye focus

3 M



Eye focus

0.3 M



Eye focus

0.5 M



Eye focus

3 M

Q1 2020



Table-top demo

Q1 2021



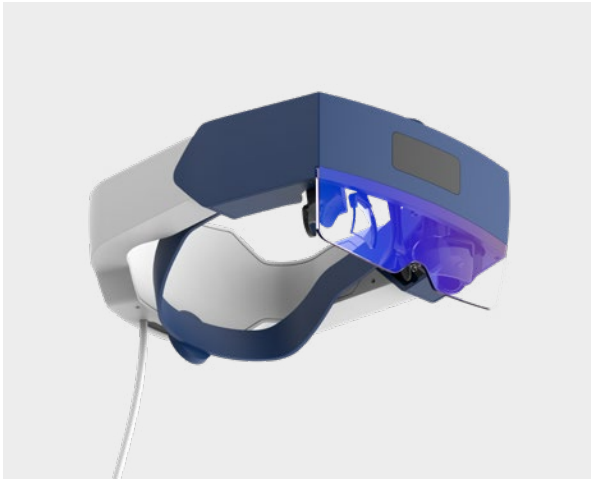
AR evaluation kit

Q1 2023

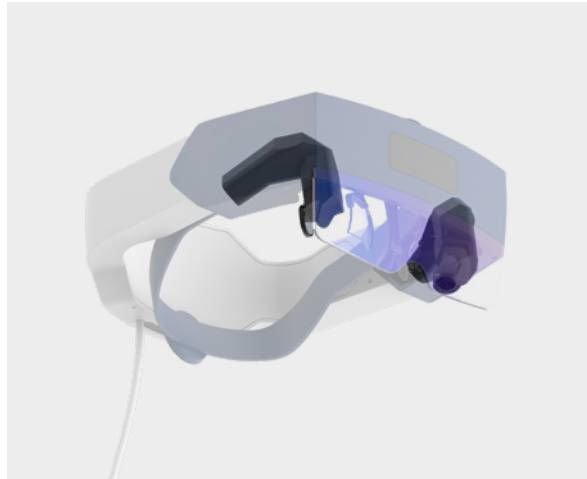


AR glasses

Q1 2021



Evaluation kit available

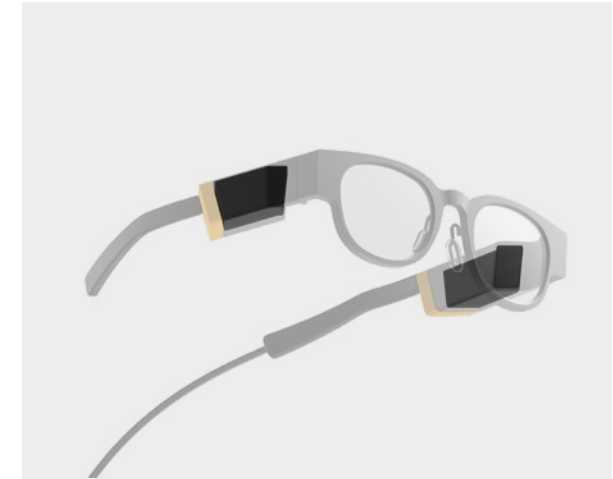


Light-field optical engine
available for integration

Q1 2023



Evaluation kit available



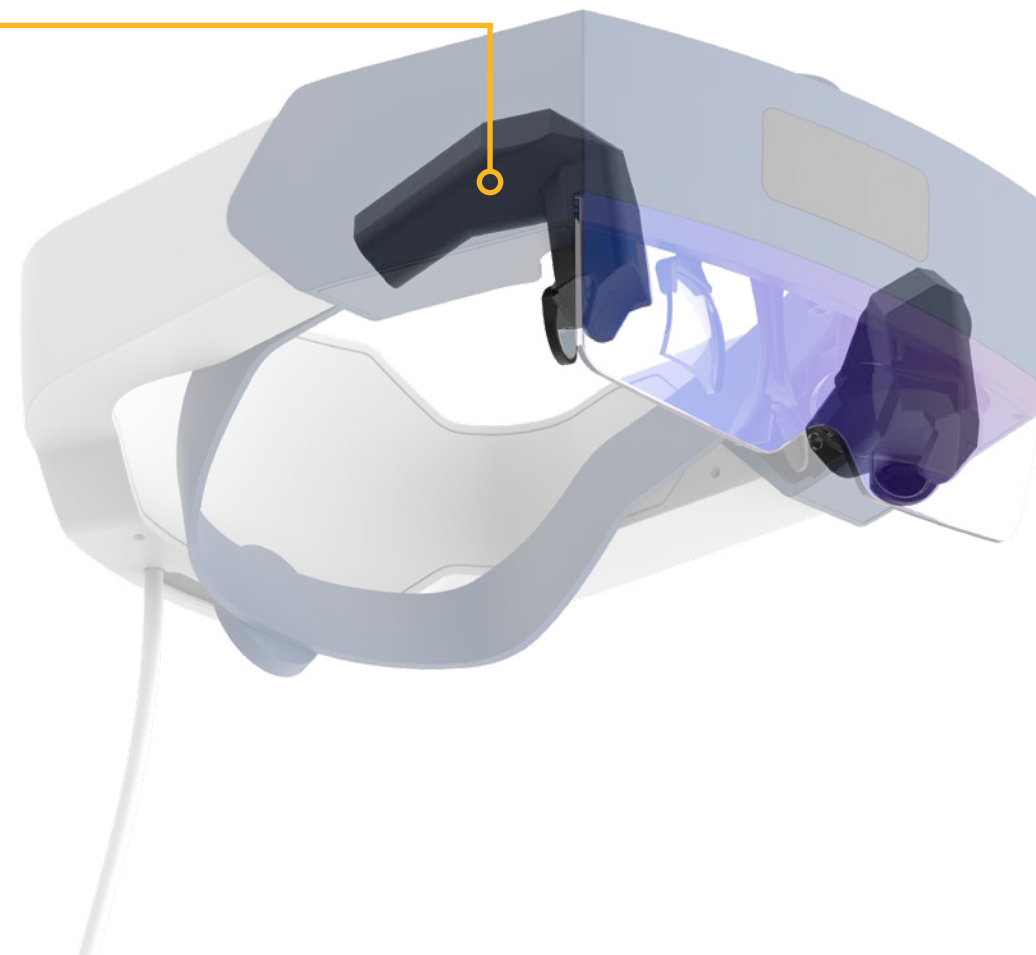
Light-field optical engine
available for integration

+ Complete light-field optical engine solution

Light-field can make **your next generation headset a market success**. It will be the first to allow comfortable extended interaction with virtual objects in the personal space.

Please ask us at sales@creal.com for:

- 1 AR technology evaluation kits
- 2 Engineering and integration support
- 3 Specifications for the smart glass light-field optical engine planned for Q1 2023



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