RAM® Prime★

Retinal Acuity Meter

Clinically Proven

21 Years of Testing

- ✓ Quick-Change Chart
- ✓ Choice of Charts
- ✓ 20/20 to 20/400
- ✓ Dial-in Brightness
- ✓ Rechargeable
- ✓ Lanyard Switch
- ✓ Tripod Mount
- ✓ Three Years Warranty

AMA OPTICS

~ Measure with Confidence ~

71 Owners judge their *Retinal Acuity Meters*

"Simply the Best"

Improves Patient Care	✓	100% (71/71)
Improves Informed Consent	✓	100% (71/71)
Improves Surgical Cases Selection	✓	100% (71/71)
Identifies Operable Surgical Cases "Thought" Inoperable	✓	92% (65/71)
Changed My Practice Pattern	✓	100% (71/71)

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MODELS

1. **RAM® Prime**
   Single Chart
2. **RAM® Prime XL**
   Exchangeable Charts
2. **RAM®ETDRS Mobile**
   5 RTDRS Charts

Chart Options

1. Potential Vision Charts
2. Current Vision Charts (more opaque)

Chart Types

1. Letters
2. Numbers
3. Landolt C
4. Tumbling E
5. ETDRS
6. Custom

Packing List:	RAM® **Prime**	RAM® **Prime XL**	RAM® **ETDRS**
1. Instrument			
2. Charts	1	1	5
3. Extra Charts	No	Option	Option
4. Carrier Frames	Yes	Yes	Yes
5. Trial Frame Pinhole	Yes	Yes	Yes
5. Traditional Pinhole Clip-on (2)	Yes	Yes	Yes
6. Panoramic Pinhole Clip-on	Option	Option	Yes
7. Occluding, Magnetic	Yes	Yes	Yes
8. Low Vision adaptor	Option	Option	Yes
8. Charger	Yes	Yes	Yes
9. Lanyard	Option	Option	Yes
10. Lens Cloth	Yes	Yes	Yes
11. Manual	Yes	Yes	Yes

The **RAM®** measures the function of the macula for (1) diagnostic purpose and for (2) forecasting the outcome of cataract surgery. In comparison, OCT does not predict outcomes (function), the scan shows the shape of the eye in fine detail. The **RAM®** predicts function best when pre-op acuity is 20/200 or better.

Ease of Operation: The **RAM®** is simple to operate and takes only 1 minute per eye. The **RAM®** is used in conjunction with a multi-perforated Pinhole-Lens Clip-on and near vision correction.

Push-Button Switch: Momentary function with a touch, full ON with a deep press (may need to use the small finger).

Chart Brightness: The standard **RAM®** brightness is 3000 cd/m^2 for potential vision testing, lower brightness is used to measure current acuity and higher brightness is available to penetrate more opaque cataracts. By adjusting the slide-switch the voltage changes to achieve the desired brightness. The graph on the label Illustrates the relation between voltage and brightness.

Testing Distance: Two retracting cords, 16 and 8 inches are built-in and rest in the retractor cave. Testing at 16 inches measures acuity from 20/20 to 20/200. Testing at 8 inches measures acuity from 20/200 to 20/400. Parking the retractor over the slit, keeps the retractor out of the retractor cave for easy reuse. A Low Vision adaptor is available for acuities to 20/1600.

Quick-Change Charts: RAM® Prime has the option of exchangeable charts. Charts are available for either potential vision (brighter) or current acuity (dimmer). The chart types are Letters, Numbers, Tumbling E, Landolt C, custom and ETDRS series of 5 charts.

Chart Label: The label on the back shows the acuity index and Volts/Brightness graph. The label is reversible: on the standard model, one side has letters and the reverse side has Landolt C.

Lanyard Option: Maintaining the precise testing distance is easy with the adjustable lanyard. From around the patient's neck, the lanyard attaches to lanyard switch of the **RAM®**. Use the retractable cord of the **RAM®** to set the testing distance, then slide the lanyard fastened to fix the distance. With the patient holding the **RAM®**, the chart light turns on when the lanyard is extended and taunt. Lanyards are sold separately.

TESTING PROTOCOL

A. Retinal Acuity Measurement (Potential Vision)

Pre Test details

- Test in a semi dark room.
- Avoid Bright Light Exposure Prior To Testing

(No retinal exam or glare testing within 5 minutes of retinal acuity testing).

- Pupil dilation is optional

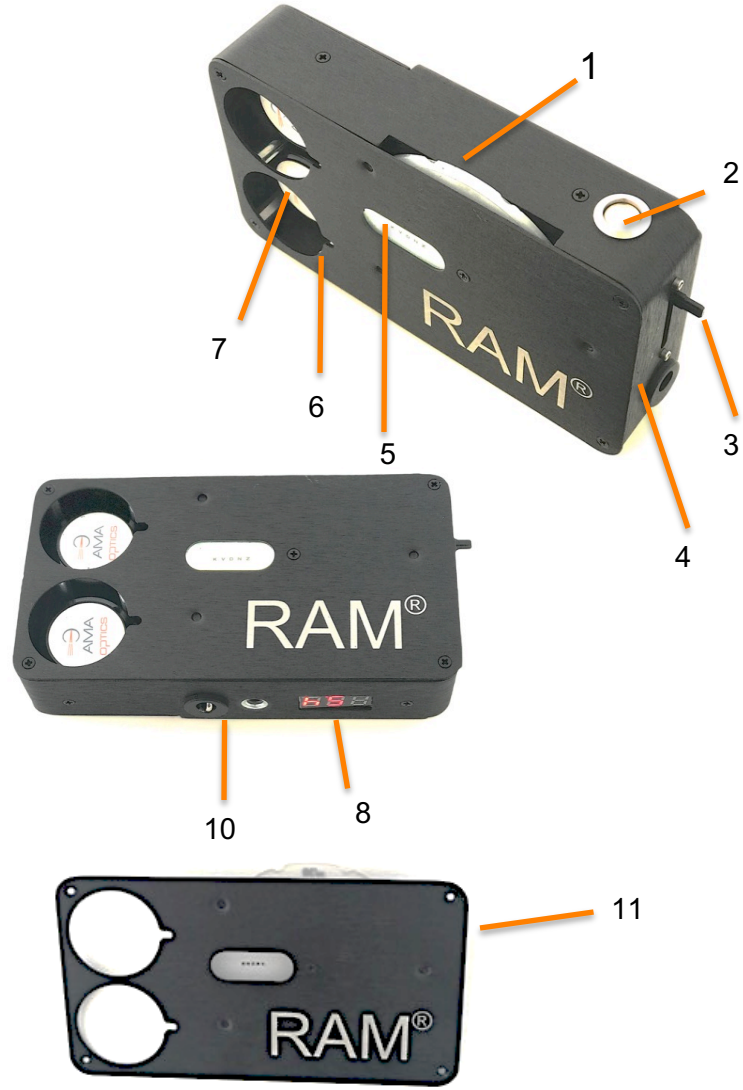
Setup

- Use Potential Vision Chart with ≥3000 cd/m^2 brightness
- Distance lens correction plus +2.5 lens
  1. Trial frames with corrective lenses
  2. Pinhole-Lens Clip-on over
     1. Distance glasses or bifocals (Clip-on Lens Down)
     2. Reading glasses (Clip-on Lens Up)
  3. Occlude the opposite eye
- Pinhole, Traditional or Panoramic
- Position RAM®
  1. 16 inches for up to 20/200 acuity
  2. 8 inches for low vision, worse than 20/200 acuity

Test

Instruct the patient to find the bright light through the pinholes and read the line of letters. Inform the patient that some of the pinholes provide a better view of the letters. Ask the patient to select the clearest view. Start with the 20/200 letters and progress to the smallest letters. Challenge the patient to read smaller letters because some letters are more readable. For example, if letters are missed on the 20/60 line, try the 20/50 and 20/40 lines before stopping.

Either the Non-transparent traditional pinhole disc or the Panoramic Pinhole disc may be used. The Panoramic pinhole disc is transparent between the pinholes. The benefit of the Panoramic pinhole disc is that the patient views their current vision **between** the pinholes and their potential vision **through** the pinhole. This allows the patient to compare their current acuity to the acuity they can expect after cataract surgery. Normal: better acuity between the pinhole. Defective media: better vision within the pinhole.



Quick-Change Top (XL Model)

1. Chart Disc
2. On-Off Switch
3. Slide switch (rheostat)
4. Charging connector
5. Viewing window
6. Slit for cord
7. Retracting cord
8. Voltmeter
9. Tripod mount
10. Lanyard switch
11. Quick-Change Top

TESTING PROTOCOL

B. Visual Acuity Measurement (Current Vision)

Setup

- Trial Frames with near correction or Patient's distance plus +2.50 Diopter add.
  1. Use Current Acuity Chart
  2. Adjust light to 85 cd/m^2 using voltmeter and graph
  3. No pinhole
  4. Occlude opposite eye
- Position RAM®
  1. 16 inches for up to 20/200
  2. 8 inches for 20/200 to 20/400
  3. 2 inches for 20/400 to 20/1600 (with low vision adaptor)

Test

Start at 16 inches with the 20/200 letters and progress to 20/20 letters. Challenge the patient to read smaller letters because some letters are more readable. For example, if letters are missed on the 20/60 line, try the 20/50 and 20/40 lines before stopping.

Carrier Frames with Pinhole-Lens clip-ons

12. Panoramic Pinhole-Lens Clip-on
13. Occluder, magnetic
14. + 2.5 D Lens of Pinhole-Lens Clip-on
15. Traditional Pinhole-Lens Clip-on

Battery Charging:

Use only the charger provided. Simply attach the charging cable to the RAM®. Recharge before the maximum voltages declines below 6.5 volts. When fully charged, the voltmeter will read between 8.7 and 9.2 volts.

Depending upon the use, weekly recharging is usually sufficient.

For 220, use a simple connecting adaptor between the wall electrical outlet and the prongs of the charger.

Charger is indoor use only
Keep away from children

Specifications

Brightness (adjustable)

- ETDRS 85 cd/m^2
- RAM® (Potential Vision) 3000 cd/m^2
- Super Bright RAM® >3000 cd/m^2 (adjustable)

Testing Distance

- 16 inches (Up to 20/200)
- 8 inches (Up to 20/400)
- 2 inches (Up to 20/1600) (with low vision adaptor)

Battery: 9 volt NiMH rechargeable