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## Optima Ballistic Glass Colombia S.A., Armor Protection Ballistic Resistance Test

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***NTS-Chesapeake Testing***  
4603B Compass Point Road  
Belcamp, MD 21017

5 September 2019

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Optima Ballistic Glass Colombia S.A., September 2019.*

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# BALLISTIC RESISTANCE TEST

## NTS-Chesapeake Testing

4603B Compass Point Road  
Belcamp, MD 21017

Client: Optima Ballistic Glass Colombia S.A.

Job No.: 3350-012-1

Test Date: 8/19/2019

### Test Panel

Description: Transparent Armor.

Manufacturer: Optima Ballistic Glass Colombia S.A.

Sample No.: 5864-144

Size: 19.75 x 19.75 in  
Avg. Thick: 0.727 in  
Thickness: 0.729 in; 0.728 in;  
0.727 in; 0.726 in

Weight: 20.94 lbs  
Plies/Laminates: NA

Date Received:  
Via: DHL  
Returned: DHL

### Setup

Shot Spacing: NIJ-STD-0108.01 Level IIIA  
Witness Panel: 0.02 in 2024-T3 Al  
Backing Material: NA  
Condition: Ambient

Primary Vel. Screens (ft): 6.500, 9.500  
Primary Vel. Location (ft): 8.000  
Range to Target (ft): 16.400  
Target to Witness (in): 6.000

Range No.: 6  
Temp: 69.8 °F  
BP: 29.8 inHg  
RH: 45.9%  
Barrel/Gun: 2003  
Gunner: J. McDowell  
Recorder: S. McDowell

### Ammunition

Projectile	Lot No.	Powder
(1) .44-mag., 240-grain SWCGC	Rim Rock Bullets	IMR 4227

### Applicable Standards or Procedures

- (1) NIJ-STD-0108.01 Level IIIA (Modified)
- (2) Customer request

Shot No.	Ammo	Weight (gr)	Time 1 (µs)	Vel. 1 (ft/s)	Time 2 (µs)	Vel. 2 (ft/s)	Avg. Vel. (ft/s)	Penetration	Obliq. (°)	Footnotes
1	1	242.1	2159	1390	2142	1401	1395	None	0.0	
2	1	242.5	2120	1415	2120	1415	1415	None	0.0	
3	1	240.5	2167	1384	2164	1386	1385	None	0.0	
4	1	243.1	2137	1404	2135	1405	1404	None	0.0	
5	1	242.1	2147	1397	2128	1410	1404	None	0.0	

Remarks:

Required velocity: 1350 to 1450 ft/s

Footnotes: