

HOLLOW POINT PELLET Specs & Performance Chart: .22cal / 5.5mm

■ Principles for Effective Hollow Point Performance ■

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■ What kills is a Permanent HOLE in the quarry – nothing else = the permanent wound cavity, not simply “energy.” ■ For the HOLE to kill – it must be in the right place in the quarry (shot placement!!).	■ Better HOLES are made by • larger , • faster , • bulldozer-nose (= large meplat), and • expanding HP projectiles (that last part is the point of hollow points!).	■ Better hollow point (HP) expansion is achieved by • faster , • softer HP projectiles with • wider , • deeper HP cups, and • expansion aids (detachable tips, slits).	■ Minimum <i>impact</i> velocities needed to achieve hollow point (HP) expansion: • 800fps+ on impact: → most .22 HP pellets expand, and well • 700–800fps : → many HP expand, and fairly well • 600–700fps : → few expand, and often not by much	■ Exception – if it needs to break through a tough skull: In that case the projectile should: • have higher impact velocity (=threshold velocity) • be harder lead • be domed or pointed rather than with large meplat • have higher sectional density	Abbreviations: ME = muzzle energy in FPE MV = muzzle velocity in fps IV = impact velocity in fps IE = impact energy in FPE RBFx = rebranded from x RBAx = rebranded as x HP = hollow point ⌀ = average \$ = expensive Color Coding for Specs Evaluation: Most specs are color coded to indicate if a spec is positive or negative – mostly for <i>pellet expansion</i> for a larger permanent wound cavity and for more <i>tissue crushing</i> : green = very conducive or positive black = normal, or neither exceptionally positive nor negative orange = somewhat negative or marginal red = quite negative
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■ Hollow Point Pellet Specs | Sorted acc. to Weight ■

Most pellets available in the US

Brand + Quality in color	Gamo	RWS	Crosman	Crosman	Crosman	Gamo	Coal	Norica	Daisy	Gamo	Gamo	JSB	JSB	JSB	H&N	H&N	SIG	Skenco	JSB	Crosman	Norica	Skenco	H&N	H&N	H&N	Skenco	JSB							
Model	PBA Armor (\$)	Super-H-Point	Hollow Point	Piranha	Des-troyer	Rocket (\$)	Hollow Point	Hollow Point, RBF Apollo	Hollow Point [€ Spain V2]	Red Fire (\$)	Expander	Hades	JSB Pred. Polymag Short (\$)	JSB Pred. Polymag (\$)	Hornet (\$\$)	Terminator	Zero Lead	UltraShock Hollow Point	JSB Pred. Metalmag (\$)	Gold Tipped (\$\$)	HollowPoint Copper, RBF Apollo	UltraMag Metal Tip	Crow Magnum	Baracuda Hunter	Baracuda Hunter Extreme	NewBoy Hollow Point	Ultra Shock Heavy (\$)							
Weight (gr) [For discrepancies cf. Notes]	10.65	14.20	14.30	14.30	14.30	14.53	14.66	15.00	15.40 ^{v2}	15.42	15.42 ^{v2} 15.43 ^{v1}	15.89	15.89	16.00	16.20 ^{v2} / 16.00 ^{v1}	16.36	16.66	16.66	17.00	17.40	18.00	18.20	18.21	18.21	18.52 ^{v2} / 19.09 ^{v1}	20.37	25.39							
Meplat Width (=flat part of nose)	0.18"= 4.5mm	0.13"= 3.4mm	0.13"= 3.2mm	0.14"= 3.5mm	0.17"= 4.5mm	0.18"= 4.5mm	?	0.17"= 4.4mm	0.15"= 3.9mm	0.18"= 4.6mm	0.17"= 4.3mm	No Meplat, 3 Holes	0.18"= 4.5mm	0.18"= 4.5mm	0.17"= 4.3mm	0.18"= 4.5mm	?	0.18"= 4.6mm	0.17"= 4.2mm	0.16"= 4.1mm	0.17"= 4.2mm	0.19"= 4.7mm	0.19"= 4.8mm	0.17"= 4.4mm	0.15"= 3.9mm	0.21"= 5.3mm	0.19"= 4.7mm							
Lead Hardness	Extra Hard ^{50%}	Harder?	Harder	Harder	Harder	Softer?	Harder?	Harder	Softer	Softer	Softer?	Softer	Softer	Softer	Harder	Harder	Softer?	Harder	Softer	Harder	Harder	Harder	Harder	Harder	Harder	Harder	Softer?							
Cup Width If detachable tip: width of main cup, not tip channel	0.15"= 3.9mm w/ Ball	0.12"= 3.0mm	0.09"= 2.3mm	0.07"= 3.0mm	0.16"= 4.0mm	0.15"= 3.9mm w/ Ball	?	0.12"= 3.1mm	0.13"= 3.4mm	0.15"= 3.9mm w/ Tip	0.15"= 3.8mm	40% of 0.16"= 4.1mm	0.14"= 3.5mm w/ Tip	0.14"= 3.5mm w/ Tip	0.14"= 3.5mm w/ Tip	ø0.13"= ø3.2mm	?	0.10"= 2.5mm	0.14"= 3.5mm w/ Tip	0.14"= 3.5mm w/ Tip	0.14"= 3.5mm w/ Tip	0.10"= 2.4mm w/ Tip	0.14"= 3.6mm	0.11"= 2.9mm	0.08"= 1.9mm; Slits: 0.15"= 3.9	0.15"= 3.8mm	0.08"= 2.0mm							
Cup Depth If detachable tip: +add Tip Channel Depth (Narrow) for =Total Depth	0.10"= 2.4mm	0.03"= 0.7mm	0.06"= 1.5mm Conical	0.06"= 1.5mm	0.02"= 0.5mm	0.10"= 2.4mm	?	0.05"= 1.1mm	0.07"= 1.8mm Conical	ø0.05" + ø0.10" = 0.15" // ø1.3mm + ø2.2mm = ø3.4mm	? Almost completely Closed by the Tip	0.04"= 1.0mm	0.04"= +0.11" = 0.15" // 1.0mm +2.5mm = 3.5mm	0.05"= +0.10" = 0.15" // 1.3mm +2.2mm = 3.5mm	? [deep]	0.02"= 0.5mm	?	? [deep]	0.05"= +0.10" = 0.15" // 1.3mm +2.2mm = 3.5mm	? [deep]	0.05"= 1.2mm	? [deep]	0.05"= 1.4mm	0.10"= 2.5mm	0.10"= 2.4mm	0.06"= 1.6mm	? [deep]							
Expansion Aids: •Slits? (predet. tearing pts.)		Head Breaks Off		8xSlits Domed								3xHoles Domed				5x Corners	5x Corners			copper coat=hard				4xSlits										
•Tip Detaches?	Yes				No	Yes				Yes	No		Yes	Yes	Yes	No	No		Yes	Yes		Yes												
Tip: Shape, Material	Short Blunt, Copper Ball				Short Blunt, Metal	Short Blunt, Copper Ball				Long Sharp, Plastic	Short Blunt, Metal		Long Sharp, Plastic	Long Sharp, Plastic	Long Sharp, Metal	Short Blunt ^{v2} , Metal	Short Blunt, Metal		Long Blunt, Metal	Long Blunt, Metal		Short Sharp, Metal												
BC (some BC in [brackets] had to be estimated; sources of BC data below)	0.015 / 0.018 ^{36, 37}	0.012 ¹ / 0.011 ^{13.5gr: 2}	0.020 ⁶⁰ / 0.023 ¹ / 0.013 ⁴ / 0.027 ⁶⁰ / 0.019 ¹⁵	0.014 ¹	0.017 / 0.027 ¹	0.019 ^{1,36}	?	[0.017]	?	[0.017]	?	[0.018]	0.019 / 0.016 ¹	0.019 / 0.023 ^{36, 37}	0.023 / 0.021 ¹⁰⁵	0.023 ¹	0.024 ⁶⁰ / 0.022 ² / 0.026 ⁹ / 0.028 ^{1, 36}	0.024 ⁶⁰ / 0.021 ¹ / 0.021 ^{1, 36}	0.020 ⁶⁰ / 0.021 ¹	?	[0.020]	?	[0.020]	0.028 ^{1, 34}	?	[0.023]	?	[0.026]	0.021 ^{OL} / 0.022 ^{2, 3, 4, 5, 12} / 0.012 ^{1, 60} / 0.017 ^{60, 15}	0.024 ² / 0.023 ¹ / 0.026 ^{OL} / 0.027 ^{7L} / 0.028 ²⁶	0.026 ^{v2 2} / 0.023 ¹ / 0.027 ^{v1} / 0.033 ²⁶	?	[0.022]	0.027 ⁷⁰ / 0.022 ^{76, 7K}

■ ME (FPE) Needed for Various Impact Velocities at Different Ranges ■

Brand	Gamo	RWS	Crosman	Crosman	Crosman	Gamo	Coal	Norica	Daisy	Gamo	Gamo	JSB	JSB	JSB	H&N	H&N	SIG	Skenco	JSB	Crosman	Norica	Skenco	H&N	H&N	H&N	Skenco	JSB
Model	PBA Armor	Super-H-Point	Hollow Point	Piranha	Des-troyer	Rocket	Hollow Point	Hollow Point, RBFApollo	Hollow Point [€ Spain V2]	Red Fire	Expander	Hades	JSB Pred. Polymag Short	JSB Pred. Polymag	Hornet	Terminator	Zero Lead	UltraShock Hollow Point	JSB Pred. Metalmag	Gold Tipped	HollowPoint Copper, RBFApollo	UltraMag Metal Tip	Crow Magnum	Baracuda Hunter	Baracuda Hunter Extreme	NewBoy Hollow Point	Ultra Shock Heavy
ME ^{MV} for 800fps @ 30y	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	33.4 ⁹⁴¹	—	—	36.9 ⁹⁵⁵	—	37.4 ⁹⁶²	37.5 ⁹⁵⁵	—	50.7 ⁹⁴⁸
ME ^{MV} for 800fps @ 25y	—	—	29.1 ⁹⁵⁸	—	—	—	—	—	—	—	—	30.6 ⁹³²	30.6 ⁹³²	30.4 ⁹²⁵	30.8 ⁹²⁵	33.3 ⁹⁵⁸	33.9 ⁹⁵⁸	33.9 ⁹⁵⁸	30.8 ⁹⁰⁴	33.6 ⁹³²	35.9 ⁹⁴⁸	34.3 ⁹²²	36.3 ⁹⁴⁸	34.1 ⁹¹⁹	34.3 ⁹¹³	39.8 ⁹⁴⁰	46.5 ⁹⁰⁸
ME ^{MV} for 800fps @ 20y	—	—	27.4 ⁹²⁹	—	29.1 ⁹⁵⁸	28.3 ⁹³⁸	29.9 ⁹⁵⁹	30.6 ⁹⁵⁹	31.2 ⁹⁵⁶	30.1 ⁹³⁷	30.0 ⁹³⁷	29.1 ⁹⁰⁹	29.1 ⁹⁰⁹	29.0 ⁹⁰³	29.4 ⁹⁰⁴	31.3 ⁹²⁹	31.9 ⁹²⁹	31.9 ⁹²⁹	29.7 ⁸⁸⁷	31.9 ⁹⁰⁹	34.0 ⁹²¹	32.3 ⁸⁹⁴	34.3 ⁹²¹	32.6 ⁸⁹⁸	32.9 ⁸⁹⁴	37.7 ⁹¹⁵	44.6 ⁸⁹⁰
ME ^{MV} for 700fps @ 50y	—	—	—	—	—	—	—	—	—	—	—	31.6 ⁹⁴⁷	31.6 ⁹⁴⁷	30.9 ⁹³³	31.3 ⁹³³	—	—	—	29.8 ⁸⁸⁸	34.7 ⁹⁴⁸	—	33.2 ⁹⁰⁷	—	34.1 ⁹¹⁹	33.9 ⁹⁰⁸	42.0 ⁹⁶⁵	45.5 ⁸⁹⁸
ME ^{MV} for 700fps @ 40y	—	—	26.9 ⁹²⁰	—	—	28.3 ⁹³⁷	—	—	—	—	—	27.4 ⁸⁸²	27.4 ⁸⁸²	27.0 ⁸⁷²	27.3 ⁸⁷²	30.7 ⁹¹⁹	31.3 ⁹²⁰	31.3 ⁹²⁰	26.8 ⁸⁴²	30.1 ⁸⁸²	32.7 ⁹⁰⁵	29.6 ⁸⁵⁶	33.1 ⁹⁰⁵	30.1 ⁸⁶³	30.1 ⁸⁵⁵	35.9 ⁸⁹³	40.6 ⁸⁴⁹
ME ^{MV} for 700fps @ 30y	20.0 ⁹¹⁹	—	23.0 ⁸⁵¹	28.2 ⁹⁴²	24.9 ⁸⁸⁵	23.9 ⁸⁸⁶	25.5 ⁸⁸⁵	26.1 ⁸⁸⁵	26.0 ⁸⁷²	25.3 ⁸⁶⁰	25.3 ⁸⁶⁰	24.1 ⁸²⁷	24.1 ⁸²⁷	23.9 ⁸²¹	24.2 ⁸²¹	26.3 ⁸⁵¹	26.8 ⁸⁵¹	26.8 ⁸⁵¹	24.2 ⁸⁰¹	26.4 ⁸²⁷	28.3 ⁸⁴²	26.5 ⁸¹⁰	28.7 ⁸⁴²	26.9 ⁸¹⁵	27.0 ⁸¹⁰	31.3 ⁸³⁴	36.6 ⁸⁰⁶
ME ^{MV} for 700fps @ 20y	16.3 ⁸³⁰	24.0 ⁸⁷²	20.0 ⁷⁹⁴	22.5 ⁸⁴²	21.0 ⁸¹³	20.6 ⁷⁹⁹	21.5 ⁸¹³	22.0 ⁸¹³	22.2 ⁸⁰⁶	21.8 ⁷⁹⁹	21.8 ⁷⁹⁹	21.5 ⁷⁸⁰	21.5 ⁷⁸⁰	21.4 ⁷⁷⁷	21.7 ⁷⁷⁷	22.9 ⁷⁹⁴	23.3 ⁷⁹⁴	23.3 ⁷⁹⁴	22.1 ⁷⁶⁵	23.5 ⁷⁸⁰	24.8 ⁷⁸⁹	24.0 ⁷⁷¹	25.2 ⁷⁸⁹	24.2 ⁷⁷⁴	24.4 ⁷⁷¹	27.7 ⁷⁸⁴	33.2 ⁷⁶⁸
ME ^{MV} for 600fps @ 40y	16.4 ⁸³³	26.9 ⁹²³	18.5 ⁷⁶³	23.3 ⁸⁵⁶	20.2 ⁷⁹⁸	19.3 ⁷⁷³	20.7 ⁷⁹⁸	21.2 ⁷⁹⁸	21.1 ⁷⁸⁵	20.4 ⁷⁷³	20.4 ⁷⁷³	19.2 ⁷³⁸	19.2 ⁷³⁸	19.0 ⁷³²	19.3 ⁷³²	21.1 ⁷⁶²	21.5 ⁷⁶³	21.5 ⁷⁶³	19.0 ⁷¹⁰	21.0 ⁷³⁸	22.7 ⁷⁵⁴	20.9 ⁷²⁰	23.0 ⁷⁵⁴	21.3 ⁷²⁶	21.3 ⁷²⁰	25.0 ⁷⁴⁵	28.8 ⁷¹⁵
ME ^{MV} for 600fps @ 30y	13.8 ⁷⁶³	20.9 ⁸¹⁵	16.3 ⁷¹⁷	19.2 ⁷⁷⁷	17.4 ⁷⁴¹	16.9 ⁷²⁴	17.9 ⁷⁴¹	18.2 ⁷⁴⁰	18.3 ⁷³²	17.9 ⁷²⁴	17.9 ⁷²⁴	17.3 ⁷⁰⁰	17.0 ⁶⁹⁵	17.2 ⁶⁹⁵	17.4 ⁶⁹⁵	18.7 ⁷¹⁷	19.0 ⁷¹⁷	19.0 ⁷¹⁷	17.5 ⁶⁸⁰	18.9 ⁷⁰⁰	20.1 ⁷¹⁰	19.1 ⁶⁸⁷	20.4 ⁷¹¹	19.3 ⁶⁹¹	19.4 ⁶⁸⁷	22.4 ⁷⁰⁵	26.4 ⁶⁸⁴

Brand + Quality in color	Gamo	RWS	Crosman	Crosman	Crosman	Gamo	Coal	Norica	Daisy	Gamo	Gamo	JSB	JSB	JSB	H&N	H&N	SIG	Skenco	JSB	Crosman	Norica	Skenco	H&N	H&N	H&N	Skenco	JSB
Model	PBA Armor (\$)	Super-H-Point	Hollow Point	Piranha	Des-troyer	Rocket (\$)	Hollow Point	Hollow Point, RBFApollo	Hollow Point [@ Spain V.2]	Red Fire (\$)	Expander	Hades	JSB Pred. Polymag Short (\$)	JSB Pred. Polymag (\$)	Hornet (\$\$)	Termina-tor	Zero Lead	UltraShock Hollow Point	JSB Pred. Metalmag (\$)	Gold Tipped (\$\$)	HollowPoint Copper, RBFApollo	UltraMag Metal Tip	Crow Magnum	Baracuda Hunter	Baracuda Hunter Extreme	NewBoy Hollow Point	Ultra Shock Heavy(\$)
ME ^{MV} for 600fps @ 20y	11.7 ⁷⁰²	16.9 ⁷³²	14.5 ⁶⁷⁵	16.0 ⁷¹¹	15.1 ⁶⁸⁹	14.9 ⁶⁷⁹	15.5 ⁶⁸⁹	15.8 ⁶⁸⁹	16.0 ⁶⁸⁴	15.8 ⁶⁷⁹	15.8 ⁶⁷⁹	15.6 ⁶⁶⁴	15.6 ⁶⁶⁴	15.6 ⁶⁶²	15.8 ⁶⁶²	16.5 ⁶⁷⁴	16.9 ⁶⁷⁵	16.9 ⁶⁷⁵	16.0 ⁶⁵²	17.0 ⁶⁶⁴	18.0 ⁶⁷¹	17.4 ⁶⁵⁷	18.2 ⁶⁷¹	17.6 ⁶⁵⁹	17.7 ⁶⁵⁷	20.1 ⁶⁸⁸	24.0 ⁶⁵⁴
Range for 800fps @ 26FPE	—	10	17	12	14	15	13	12	11	12	12	12	12	12	10	8	7	7	8	4	1	1	—	—	—	—	—
Range for 750fps @ 26FPE	—	16	27	19	23	25	22	20	20	21	21	23	23	24	22	18	17	17	22	16	12	13	11	13	12	2	—
Range for 700fps @ 26FPE	—	23	38	27	32	35	31	30	30	32	32	36	36	37	36	29	28	28	37	29	24	28	23	27	26	14	—
Range for 650fps @ 26FPE	—				43	47		40	41	43			50	51		42							36	43		28	
ME for 950fps MV	—	28.5	28.7	28.7	28.7	29.1	29.4	30.1	30.9	30.9	30.9	31.8	31.8	32.1	32.5	32.8	33.4	33.4	34.1	34.9	36.1	36.5	36.5	36.5	37.1	40.7	50.9
Length mm										8.9			8.8	10.4	9.6				10.2	9.8		7.6					8.47
Length in										.349"			0.345"	0.409"	0.378"				0.402"	0.385"		0.299"					0.334"
Brand	Gamo	RWS	Crosman	Crosman	Crosman	Gamo	Coal	Norica	Daisy	Gamo	Gamo	JSB	JSB	JSB	H&N	H&N	SIG	Skenco	JSB	Crosman	Norica	Skenco	H&N	H&N	H&N	Skenco	JSB
Model	PBA Armor	Super-H-Point	Hollow Point	Piranha	Des-troyer	Rocket	Hollow Point	Hollow Point, RBFApollo	Hollow Point [@ Spain V.2]	Red Fire	Expander	Hades	JSB Pred. Polymag Short	JSB Pred. Polymag	Hornet	Termina-tor	Zero Lead	UltraShock Hollow Point	JSB Predator Metalmag	Gold Tipped	Hollow Point Copper	UltraMag Metal Tip	Crow Magnum	Baracuda Hunter	Baracuda Hunter Extreme	NewBoy Hollow Point	Ultra Shock Heavy

■ Notes ■

Versions: Mfctrs update or change their pellet designs sometimes, without renaming them. This list refers to these variations as *versions*, e.g., V.1, V.2, V.3, etc.

Rebranding (RBA = rebranded as):
H&N: Baracuda Hunter → RBA Remington: Baracuda Hunter JSB: Ultra Shock Heavy → RBA Cometa: Ultra Shock Heavy
H&N: Crow Magnum → RBA Remington: Crow Magnum Crosman: Destroyer → RBA Benjamin: Pointed Expanding
H&N: Baracuda Hunter → RBA Stoeger: X-Hollow Crosman: Hollow Point → RBA Benjamin: Hollow Point
Daisy: Hollow Point → RBA BSA: Interceptor → RBA Gamo: Hollow Point 10X Multishot

ME (Muzzle Energy in FPE) Needed for Various Impact Velocities at Different Ranges:
Calculations based on the (tentative) BC values listed in the table. | Atm.: 29.95"Hg (1013mBar), 68°F (20°C), 65% RH | Calc.: ChairGun Mobile, GA drag model. | No MV is given above 960fps, as precision and BC deteriorate at transonic velocities, especially for such blunt projectiles as HP. | The calculations assume a constant BC, however drag increases disproportionately at transonic velocities. This is *especially* so for totally blunt projectiles like wadcutters and their slightly less blunt cousins, the hollow point pellets. Therefore, when the chart calls for an MV of over 850 or 900fps the required energy/ muzzle velocity is probably quite optimistic.

BC Data: Comments: ●For the expansion of the HP the impact velocity (IV) is immensely important. IV depends strongly on the pellet's BC, especially beyond extreme short ranges. Therefore, instead of relying on weak data, I suggest you measure actual velocity with your actual gun at different ranges, using a (protected!) chronograph. | ●Due to the less than aerodynamic shape of most hollow points it is likely that the BC will significantly deteriorate above 900fps, as most have "the aerodynamic grace of a frying pan" so some of the usable range data might be a bit optimistic as it assumes a constant BC (thanks to nervoustrigger

[GTA] for the graphic illustration). | ●The BC values in this table are based on tests under a variety of conditions and with sometimes questionable methods. | ●Where BC data was not available, I made a conservative estimation (indicated with the brackets and the ?), in line with the weight and the BC of similarly shaped pellets. | ●The BC data in the table stems from the following sources:
0F,0H,0I,0K,0L H&N (2013-12). Test. 30FPE. 50y | **0O** H&N (2013-12). Test. 31FPE. 50y | **0V,0W, 0Y** H&N (2015-04). 30FPE (probably). 50y | **1** HardAir Magazine (2019-00). Test. ChairGun Calc, GA-Model. 29FPE. 30y | **2** ChairGun V 4.3.1. (2017). List. GA-Model Calc. Some data from the APP | **3** ChairGun (2009-07). List. G1-Model Calc. | **4** ChronoConnect.com (2012 and Older). List | **5** Airgunforum.co.uk (2006-02 -- 2008-11). List | **6C** Bob Sterne (2007 c.). Test. ChairGun Calc, G1-Model. 8FPE. 25y | **6D** Bob Sterne (2007 c.). Test. ChairGun Calc, G1-Model. 25FPE. 25y | **7G** ASRA (2017). Test. GA-Model. 32FPE. 31y | **7K** ASRA (2017). Test. GA-Model. 35FPE. 50y | **7L** ASRA (2017). Test. GA-Model. 32FPE. 38y | **7Q** ASRA (2016). Test. ChairGun 4 Calc, GA-Model. 49FPE. 32y | **12** MTC Optics.com (2017 and Much Older). List | **15** AirEnlaces.Blogspot (2015 and Older). List | **26** Bob Sterne (2013). Test. ChairGun3, G1-Model. 26FPE. 25y | **34** Test T (2019). BC Calc through POI Change, ChairGun Calc, GA-Model. 28FPE. 28,55,110y | **36** Strelak Pro (2020-06 and much earlier). List. | **37** Gamo.com (2019 and earlier). Optimistic test without any specifics whatsoever | **105** Test V (2019). GA-Model. Labrador. 30FPE. 11,22,33,44,55,111y

Weight Discrepancies: Some weights are stated wrong on sellers' websites. The weights in the table are taken from the manufacturers' websites, or from photos of pellet can labels. Gamo Rocket is 14.50gr, not 14.30gr. Gamo PBA Armor is 10.85gr, not 10.65gr.

Disclaimers: I try to be cautious with the details, but I'm only human...! The data for meplat and HP cup width are usually calculated by measuring size relations in photos, and the HP cup depth I measured with rather inadequate tools, so if someone has accurate data, I gladly include it! For getting the lead hardness spec beyond a guesstimation, I'll try to get some tools to measure it.