

**6.5 Creedmoor Hornady - Nosler BalTip 120gr - RS60**

WARNING: Since we have no control over equipment or data which may be used with this program, no responsibility is implied or assumed for results obtained through its use. Input data and results may be incorrect or wrong. Therefore the use of this data for loading ammunition can cause serious injury to personnel and material. The computer-results had to be checked against data available in current loading manuals.

**LOT-TO-LOT VARIATIONS OF POWDERS, PRIMER SUBSTITUTION AND COMPONENT CHANGE OFTEN RAISE PRESSURES TO UNSAFE LEVELS. THE USER MUST ASSUME THE ENTIRE RISK OF USING THIS DATA FOR LOADING PURPOSES.**

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<b>User Data:</b>	<b>Date:9-Jan-2018</b>	<b>Time:10:31:36</b>	<b>File: *.dat</b>
<b>Comment</b>	<b>24" barrel - 70.71mm COL - 42.0gr start load - 861m/s - 2973bar</b>		
<b>Cartridge / Caliber</b>	<b>6.5 Creedmoor Hornady</b>	<b>Bullet</b>	<b>.264, 120, Nosler BalTip 2612</b>
Maximum Average Pressure, allowed	4350 bar	63091 psi. (Piezo CIP)	with boattail
Groove Caliber	6,71 mm	0,264 in.	7,78 gm 120,0 gr.
Case Capacity, overflow	3,474 cm³	53,5 gr. H2O	Bullet Weight
Case Length	48,77 mm	1,920 in.	Bullet Length
Cartridge O.A. Length	70,73 mm	2,785 in.	Bullet Seating Depth
Shot Start / Init Pressure	250,0 bar	3626 psi.	Barrel/Tube Length
		Cross Section Area of Bore	609,6 mm 24,0 in.
			0,3466 cm² 0,05372 in.²

<b>Propellant type</b>	<b>ReloadSwiss RS 60</b>		
Charge Weight	2,722 gm	42,0 gr.	Load Density
Heat of Explosion, Potential	3990 J/gm	258,5 J/gr.	Energy Density of Charge
Propellant Solid Density	1,61 gm/cm³	407,15 gr./in.³	Used Ratio of Specific Heats cp/cv
Burning Rate Factor Ba	0,468 1/s		Weighting Factor
Burning Function Limit Z1	0,695		Prog.-/ Degressivity Factor a0
Factor b	2,192		Bulk Density
			0,860 gm/cm³ 217,5 gr./in.³
			3430 J/cm³ 56208 J/in.³
			1,2291
			0,5
			0,669
			0,965 gm/cm³ 244,0 gr./in.³

**Calculated and Estimated Data:**

Bullet Shank Seating Depth	7,0 mm	0,276 in.	Capacity Displaced by Seated Bullet	0,308 cm³	0,0188 in.³
Useable Case Capacity	3,166 cm³	0,1932 in.³	Bullet Travel at Muzzle Exit	569,86 mm	22,44 in.
Loading Ratio("Density") / Filling	89.1 %		Charge Fraction Burnt at Shot Start	1,48 %	

<b>Predicted Data:</b>					
Maximum Chamber Pressure	2973 bar	43126 psi.	Bullet Travel at Pmax	54,2 mm	2,13 in.
<b>at Muzzle Exit:</b>					
Bullet Velocity	860,9 m/s	2824 fps.	Pressure at Muzzle	685 bar	9935 psi.
Bullet Energy	2882 Joule	2126 ft.lbs.	Bullet Barrel Time	1,285 ms	
Propellant Burnt	99,8 %		Ballistic Efficiency	26,5 %	

Check Loading Manuals for Safe Minimum Charge Weight to Avoid Hazardous Ignition Conditions like Secondary Explosion Effects !  
Real maximum (peak) of pressure is reached while bullet moves within barrel.  
End of combustion occurs after the bullet's base passes muzzle.

**Table of incremented charges ranging from +10,0% to -20,0% of above specified charge**

**D A N G E R !** : Table data may exceed maximum average pressures ! Pressures exceeding SAAMI or CIP specs are printed underlined!

Diff. %	Charge Gramm	Weight Grains	Muzzle Vel. m/s	Muzzle Vel. fps	Muzzle Energy Joule	Muzzle Energy ft.lbs	Max. Pressure bar	Max. Pressure psi	Muzzle Pressure bar	Muzzle Pressure psi	Prop.Burnt %	B_TimeL.R./Filling ms	B_TimeL.R./Filling %
-20,0	2,18	33,6	689	2261	1847	1362	1645	23856	543	7876	91,3	1,647	71
-18,0	2,23	34,4	706	2317	1940	1431	1745	25314	562	8148	92,7	1,609	73
-16,0	2,29	35,3	724	2374	2036	1502	1851	26846	580	8409	94,0	1,571	75
-14,0	2,34	36,1	741	2431	2134	1574	1964	28486	597	8657	95,2	1,534	77
-12,0	2,39	37,0	758	2487	2235	1649	2083	30218	613	8892	96,2	1,499	78
-10,0	2,45	37,8	775	2544	2338	1725	2210	32058	628	9111	97,2	1,465	80
-8,0	2,50	38,6	793	2601	2443	1802	2345	34009	642	9313	98,0	1,431	82
-6,0	2,56	39,5	810	2657	2551	1881	2488	36084	655	9498	98,6	1,398	84
-4,0	2,61	40,3	827	2713	2660	1962	2640	38290	666	9664	99,2	1,359	86
-2,0	2,67	41,2	844	2769	2770	2043	2802	40633	676	9810	99,6	1,321	87
<b>Nominal</b>	<b>2,72</b>	<b>42,0</b>	<b>861</b>	<b>2824</b>	<b>2882</b>	<b>2126</b>	<b>2973</b>	<b>43126</b>	<b>685</b>	<b>9935</b>	<b>99,9</b>	<b>1,285</b>	<b>89</b>
+2,0	2,78	42,8	878	2879	2995	2209	3156	45781	692	10038	100,0	1,250	91
+4,0	2,83	43,7	894	2934	3109	2293	3351	48607	698	10122	100,0	1,216	93
+6,0	2,88	44,5	911	2987	3224	2378	3559	51620	703	10202	100,0	1,183	94
<b>+8,0</b>	<b>2,94</b>	<b>45,4</b>	<b>927</b>	<b>3040</b>	<b>3340</b>	<b>2463</b>	<b>3781</b>	<b>54834</b>	<b>709</b>	<b>10279</b>	<b>100,0</b>	<b>1,151</b>	<b>96</b>
<b>+10,0</b>	<b>2,99</b>	<b>46,2</b>	<b>943</b>	<b>3093</b>	<b>3456</b>	<b>2549</b>	<b>4017</b>	<b>58267</b>	<b>714</b>	<b>10353</b>	<b>100,0</b>	<b>1,120</b>	<b>98</b>

**Results caused by ±10% powder lot-to-lot burning rate variation using nominal charge**

Data for burning rate increased by 10% relative to nominal value :													
Nominal	2,72	42,0	903	2961	3168	2336	3592	52102	656	9509	100,0	1,185	89
Data for burning rate decreased by 10% relative to nominal value :													
Nominal	2,72	42,0	800	2625	2489	1836	2433	35292	675	9789	94,6	1,409	89