

# 2024 HELMET LABORATORY TESTING PERFORMANCE RESULTS

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**RECOMMENDED<sup>2</sup>** 

Riddell Axiom 3D (R61227) New, 1
Xenith Orbit Pro <sup>New</sup>
VICIS ZER02-R (19301)
VICIS ZERO2-R MATRIX ID (19014) <sup>1</sup>
Riddell SpeedFlex Precision Diamond (R41106) <sup>1</sup>
LIGHT Gladiator (LS-Pro)
Riddell SpeedFlex Precision (R41156) <sup>1</sup>
LIGHT Gladiator (ATK) New
Riddell Axiom (R61247) <sup>1</sup>
Riddell SpeedFlex Diamond (R41175)
Xenith Shadow XR
Riddell SpeedFlex True (R61365) <sup>1</sup>
Schutt F7 UR1 (208300) <sup>1</sup>
Schutt F7 2.0 (209000)
Schutt F7 UR2 (308300) <sup>1</sup>
Schutt F7 UR1 2.0 2024 (209301) New, 1
Riddell SpeedFlex (R41195)
Schutt F7 VTD II (208801)
Xenith Shadow
Schutt Air XP Pro Q11 LTD (788600)
Riddell Speed Jeen (D41107)

### **NEWLY PROHIBITED**<sup>3</sup>

Schutt Vengeance VTD II Xenith X2E+ Riddell Speed Classic Icon

Riddell Revolution Xenith X2E Riddell Revolution IQ

Actual performance and ranking may vary since these helmets are customized for each player's head shape.

 $^{2}\text{These}$  helmets are not permitted for new players and players who did not wear them during the 2023 NFL season.

<sup>3</sup>Together with a list of previously-prohibited helmets, these helmets are prohibited for all players.

Note: Models worn by less than 1% of NFL players are greyed-out.

THE NFL, IN COLLABORATION WITH THE NFLPA, THROUGH THEIR RESPECTIVE APPOINTED BIOMECHANICAL EXPERTS, ANNUALLY COORDINATE EXTENSIVE LABORATORY RESEARCH TO EVALUATE WHICH HELMETS BEST REDUCE HEAD IMPACT SEVERITY. THE RESULTS OF THOSE TESTS, WHICH ARE GENERALLY SUPPORTED BY ON-FIELD PERFORMANCE, ARE SET FORTH ON THIS POSTER.

The helmet models are listed in order of their performance, with a shorter bar representing better performance. The rankings are based exclusively on the ability of the helmet to reduce head impact severity measures in laboratory testing. Performance variation related to helmet fit, retention, temperaturedependence, and long-term durability are not addressed in these rankings.

All helmets in green are recommended for use by NFL players. These topperforming helmets performed similarly to top-ranked helmets based on a statistical grouping analysis. Helmets with poorer laboratory performance were placed in the Not Recommended (yellow) or Prohibited (red) groups. Yellow helmets are not permitted for new players and players who did not wear them during the 2023 season. Red helmets are prohibited for all players.

The laboratory test conditions were intended to represent potentially concussive head impacts in the NFL. The results of this study should not be extrapolated to collegiate, high school, or youth football.



### **POSITION-SPECIFIC HELMET TESTING**

This year, top-performing helmets were evaluated using position-specific test methodologies for quarterbacks, and offensive and defensive linemen. Position-specific helmet rankings are available at this link.





# 2024 POSITION-SPECIFIC HELMET TESTING RESULTS FOR DEFENSIVE LINEMEN C.

Xenith Orbit Pro <sup>New</sup>
VICIS ZERO2 TRENCH MATRIX ID 2024 (19017) New, 1
Riddell Axiom 3D OL/DL (R61227L) New, 1
Riddell Axiom 3D (R61227) New. 1
VICIS ZERO2 TRENCH LP MATRIX ID 2024 (19018) New, 1
VICIS ZERO2 TRENCH 2024 (19303) New
LIGHT Gladiator (ATK) <sup>New</sup>
VICIS ZERO2 TRENCH LP 2024 (19501) New
VICIS ZERO2-R MATRIX ID (19014) <sup>1</sup>
Riddell Axiom (R61247) <sup>1</sup>
Riddell SpeedFlex Precision Diamond (R41106) <sup>1</sup>
Xenith Shadow XR
VICIS ZER02-R (19301)
Riddell SpeedFlex Precision OL/DL (R41157L) New, 1
Riddell SpeedFlex Precision (R41156) <sup>1</sup>
Riddell SpeedFlex True (R61365) <sup>1</sup>
Schutt F7 2.0 (209000)
Riddell SpeedFlex (R41195)
Schutt F7 UR1 2.0 2024 (209301) <sup>New, 1</sup>

 $^{\rm l}$  Actual performance and ranking may vary since these helmets are customized for each player's head shape.

Note: Models worn by less than 1% of NFL defensive linemen are greyed-out.

THE NFL, IN COLLABORATION WITH THE NFLPA, THROUGH THEIR RESPECTIVE APPOINTED BIOMECHANICAL EXPERTS, ANNUALLY COORDINATE EXTENSIVE LABORATORY RESEARCH TO EVALUATE WHICH HELMETS BEST REDUCE HEAD IMPACT SEVERITY.

This year, top-performing (green) helmets were evaluated using position-specific test methodologies. This poster outlines the results of currently manufactured general- purpose helmet models and models designed specifically for defensive linemen. The helmet models are listed in order of their performance, with a shorter bar representing better performance. The rankings are based exclusively on the ability of the helmet to reduce head impact severity measures in laboratory testing. Performance variation related to helmet fit, retention, temperature-dependence, and long-term durability are not addressed in these rankings.

All helmets on this poster tested in the topperforming (green) group in the general helmet test used to rank helmets on the main poster. This poster ranks those helmets according to how they performed under additional laboratory impact conditions that are representative of high-severity impacts defensive linemen are likely to experience on-field. These positionspecific results are meant to supplement the information provided on the main poster to help players distinguish between top-performing helmets that may offer impact severity reduction specifically for the types of impacts they are likely to sustain while playing a particular position.

The laboratory test conditions were intended to represent potentially concussive head impacts in the NFL. The results of this study should not be extrapolated to collegiate, high school, or youth football.

### **POSITION-SPECIFIC HELMET TESTING**

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# 2024 POSITION-SPECIFIC HELMET TESTING RESULTS FOR OFFENSIVE LINEMEN C

Xenith Orbit Pro <sup>New</sup>			
VICIS ZERO2 TRENCH MATRIX ID 2024 (19017) New, 1			
Riddell Axiom 3D OL/DL (R61227L) <sup>New, 1</sup>			
Riddell Axiom 3D (R61227) New, 1			
VICIS ZERO2 TRENCH 2024 (19303) New			
VICIS ZERO2 TRENCH LP MATRIX ID 2024 (19018) New, 1			
VICIS ZERO2 TRENCH LP 2024 (19501) New			
LIGHT Gladiator (ATK) <sup>New</sup>			
VICIS ZERO2-R MATRIX ID (19014) <sup>1</sup>			
Riddell SpeedFlex Precision Diamond (R41106) <sup>1</sup>			
Xenith Shadow XR			
Riddell Axiom (R61247) <sup>1</sup>			
VICIS ZERO2-R (19301)			
Riddell SpeedFlex True (R61365) <sup>1</sup>			
Riddell SpeedFlex Precision OL/DL (R41157L) <sup>New, 1</sup>			
Riddell SpeedFlex Precision (R41156) <sup>1</sup>			
Riddell SpeedFlex (R41195)			
Schutt F7 2.0 (209000)			
Schutt F7 UR1 2.0 2024 (209301) <sup>New, 1</sup>			

<sup>1</sup>Actual performance and ranking may vary since these helmets are customized for each player's head shape.

Note: Models worn by less than 1% of NFL defensive linemen are greyed-out.

## THE NFL, IN COLLABORATION WITH THE NFLPA, THROUGH THEIR RESPECTIVE APPOINTED BIOMECHANICAL EXPERTS, ANNUALLY COORDINATE EXTENSIVE LABORATORY RESEARCH TO EVALUATE WHICH HELMETS BEST REDUCE HEAD IMPACT SEVERITY.

This year, top-performing (green) helmets were evaluated using position-specific test methodologies. This poster outlines the results of currently manufactured generalpurpose helmet models and models designed specifically for offensive linemen. The helmet models are listed in order of their performance, with a shorter bar representing better performance. The rankings are based exclusively on the ability of the helmet to reduce head impact severity measures in laboratory testing. Performance variation related to helmet fit, retention, temperaturedependence, and long-term durability are not addressed in these rankings.

All helmets on this poster tested in the top-performing (green) group in the general helmet test used to rank helmets on the main poster. This poster ranks those helmets according to how they performed under additional laboratory impact conditions that are representative of high-severity impacts offensive linemen are likely to experience on-field. These position-specific results are meant to supplement the information provided on the main poster to help players distinguish between top-performing helmets that may offer impact severity reduction specifically for the types of impacts they are likely to sustain while playing a particular position.

The laboratory test conditions were intended to represent potentially concussive head impacts in the NFL for offensive linemen. The results of this study should not be extrapolated to collegiate, high school, or youth football.

### **POSITION-SPECIFIC HELMET TESTING**



This year, top-performing helmets were evaluated using position-specific test methodologies for quarterbacks, and offensive and defensive linemen. Position-specific helmet rankings are available at this link.







## 2024 POSITION-SPECIFIC HELMET TESTING RESULTS FOR QUARTERBACKS 👁

## VICIS ZERO2 MATRIX ID QB (19016)<sup>1</sup> Xenith Orbit Pro<sup>New</sup> Riddell Axiom 3D QB (R61227Q) New,1 Riddell Axiom 3D (R61227) New,1 Riddell Axiom (R61247)<sup>1</sup> Riddell SpeedFlex Precision Diamond (R41106)<sup>1</sup> VICIS ZERO2-R MATRIX ID (19014)<sup>1</sup> Schutt F7 UR1 2.0 2024 (209301) New,1 LIGHT Gladiator (ATK) New Riddell SpeedFlex (R41195) Schutt F7 2.0 (209000) VICIS ZERO2-R (19301) Riddell SpeedFlex Precision QB (R41157Q) New, 1

Riddell SpeedFlex Precision (R41156)<sup>1</sup>

Xenith Shadow XR

Riddell SpeedFlex True (R61365)<sup>1</sup>

<sup>1</sup>Actual performance and ranking may vary since these helmets are customized for each player's head shape.

Note: Models worn by less than 1% of NFL defensive linemen are greyed-out.

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This year, top-performing (green) helmets were evaluated using position-specific test methodologies. This poster outlines the results of currently manufactured general- purpose helmet models and models designed specifically for quarterbacks. The helmet models are listed in order of their performance, with a shorter bar representing better performance. The rankings are based exclusively on the ability of the helmet to reduce head impact severity measures in laboratory testing. Performance variation related to helmet fit, retention, temperature-dependence, and long-term durability are not addressed in these rankings.

All helmets on this poster tested in the topperforming (green) group in the general helmet test used to rank helmets on the main poster. This poster ranks those helmets according to how they performed under additional laboratory impact conditions that are representative of high-severity impacts quarterbacks are likely to experience on-field. These position-specific results are meant to supplement the information provided on the main poster to help players distinguish between top-performing helmets that may offer impact severity reduction specifically for the types of impacts they are likely to sustain while playing a particular position.

The laboratory test conditions were intended to represent potentially concussive head impacts in the NFL for quarterbacks. The results of this study should not be extrapolated to collegiate, high school, or youth football.

### **POSITION-SPECIFIC HELMET TESTING**



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