

Comparison of Q-Series Injury Assessment Reference Values

Tables derived from:

Visvikis, C., Pitcher, M., Carroll, J., Cuerden, R., Barrow, A. (2014). *New UN regulation on child restraint systems - assessment of amendments to the new regulation, front and side impact procedures and Q-Series dummy family injury criteria (Client Project Report 1801)*. Report to be published on-line here: http://ec.europa.eu/enterprise/sectors/automotive/documents/calls-for-tender-and-studies/index_en.htm

Supplementary Q10 data derived from:

EEVC WG12 (2014). *Q10 dummy report – Advanced child dummies and injury criteria for frontal impact*. Draft report not currently published.

Source	Risk of injury	Head		Neck		Chest		Abdom.
		HIC (15/36)	A 3 ms (g)	+Fz (N)	+My (Nm)	Dx (mm)	A 3 ms (g)	P (bar)
Q0 dummy								
UN R129 limits		600	75	*	*	-	55	-
EEVC	UN R94 (scaled)	477	79	433	13	-	-	-
	AIS≥3 20% LR	523	85	498	17	-	-	-
	AIS≥3 50% LR	671	104	546	20	-	-	-
Q1 dummy								
UN R129 limits		600	75	*	*	-	55	-
EEVC	UN R94 (scaled)	447	67	951	42	52	-	-
	AIS≥3 20% LR	491	72	1,095	53	40	-	-
	AIS≥3 50% LR	629	88	1,201	64	59	-	-
CASPER	AIS≥3 20% SA	-	-	1,000	-	-	-	-
	AIS≥3 50% SA	-	-	1,300	-	-	-	-
	Proposal	-	-	1,200	-	-	-	-
Q1.5 dummy								
UN R129 limits		600	75	*	*	-	55	-
EEVC	UN R94 (scaled)	526	70	1,080	48	49	-	-
	AIS≥3 20% LR	578	76	1,244	61	31	-	-
	AIS≥3 50% LR	741	93	1,364	74	56	-	-

* For monitoring purposes only

Source	Risk of injury	Head		Neck		Chest		Abdom.
		HIC (15/36)	A 3 ms (g)	+Fz (N)	+My (Nm)	Dx (mm)	A 3 ms (g)	P (bar)
Q3 dummy								
UN R129 limits		800	80	*	*	-	55	-
EEVC	UN R94 (scaled)	710	75	1,350	63	46.5	-	-
	AIS \geq 3 20% LR	780	81	1,555	79	36	-	-
	AIS \geq 3 50% LR	1,000	99	1,705	95	53	-	-
CASPER	AIS \geq 3 20% SA	-	75	-	-	-	-	0.90
	AIS \geq 3 50% SA	-	120	-	-	-	-	1.30
	Proposal	-	102	-	-	-	-	1.13
Q6 dummy								
UN R129 limits		800	80	*	*	-	55	-
EEVC	UN R94 (scaled)	986	82	1,824	94	42	-	-
	AIS \geq 3 20% LR	1,083	89	2,101	118	33	-	-
	AIS \geq 3 50% LR	1,389	109	2,304	143	49	-	-
CASPER	AIS \geq 3 50% SA	-	-	-	-	-	-	1.09
Q10 dummy								
UN R129 limits		To be defined during Phase 2				-	-	-
EPOCH	?	-	80	-	125	56	45	-
EEVC	AIS \geq 3 20% HIII		126**	2,241 ^x	123	28	-	-
	AIS \geq 3 50% HIII		212**	2,241 ^x	123	56	-	-
	AIS \geq 3 20% Q3		138	2,590	157	23	-	TBC
	AIS \geq 3 50% Q3		169	2,840	191	37	-	TBC

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** peak (not 3ms)

^x 3% AIS \geq 3 – 20% data not available