ADAC – Euro NCAP

Bewertung von aktiver Sicherheit im europäischen Verbraucherschutz

Thomas Unger
ADAC Technik Zentrum

ADAC

Euro NCAP
Safety Assist

Safety Assist

Seatbelt Reminder (SBR)

Electronic Stability Control (ESC)

Speed Assist Systems (SAS)

From 2014:

AEB Inter-Urban

Lane Departure Warning

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Seatbelt Reminder

Seatbelt reminder

Must be standard on the tested vehicle

Maximum of 3 points available:

1 for driver

1 for frontal passenger

1/n for 2nd and 3rd row

(n=seats in 2nd/3rd row)

Only possible to score as follows:

2 points (driver + passenger)

3 points (driver + passenger + rear)

Seatbelt reminder

Requirements front seating positions:

Loud and clear audiovisual signal for at least 90 seconds

Must recommence immediately after change of status

Requirements rear seating positions:

Visual signal clearly indicating the positions in use/or not in use for 30 seconds

Audible signal at change of status

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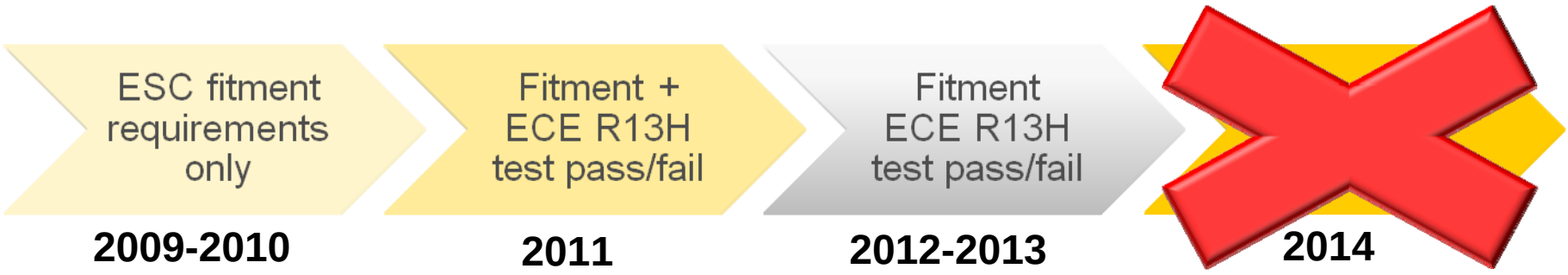
Electronic Stability Control

ESC Survey

Make	Std	Opt	NA	Average ESC Ratings
Bentley	100	0	0	
BMW	100	0	0	
Daimler	100	0	0	
Ferrari	100	0	0	
Lexus	100	0	0	
Maserati	100	0	0	
Maybach	100	0	0	
Mercedes Benz	100	0	0	
Rolls Royce	100	0	0	
Smart	100	0	0	
Volvo	100	0	0	
Jaguar	98	2	0	
Audi	97	3	0	
Saab	97	3	0	
Honda	90	2	9	
Alfa Romeo	89	11	0	
Land Rover	80	20	0	
Porsche	80	0	20	
VW	67	33	0	
Aston Martin	67	0	33	
Toyota	62	39	0	
Opel/Vauxhall	60	28	11	
Mazda	60	12	28	
Nissan	53	14	34	
Mitsubishi	53	4	43	
Seat	51	46	4	
Renault	49	33	17	
Peugeot	49	31	20	
Citroen	48	15	38	
Ford	46	31	23	
Kia	45	15	40	
Skoda	30	63	7	
Fiat	26	40	35	
Hyundai	25	22	53	
Subaru	25	2	73	
Suzuki	19	9	72	
Daihatsu	6	7	86	
Mini	0	100	0	
Chevrolet	0	30	70	
Lotus	0	0	100	
Proton	0	0	100	
Chrysler	0	0	0	No Data
Dodge	0	0	0	No Data
Jeep	0	0	0	No Data
Ssangyong	0	0	0	No Data

ESC & Dynamic Handling



Plan

WG focus on development of 2014 procedures

Candidate tests defined

- **Brake in a turn (and power-off)**
- **Highway exit**
- **Step-steer + Power-off**
- **Double lane change**

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Speed Assist System

Speed Assist Systems

Speed Limit Information Function (SLIF)

Manual Speed Assistance (MSA)

Intelligent Speed Assistance (ISA)

- SLIF and MSA combined

Speed Limit Information Function (SLIF)

Camera based

- Speed limit indication of 20s minimum
- Map based or combination of map & camera
- Speed limit indication when available
- Information from vehicle integrated or mobile device

Safety Assist - SAS

Manual Speed Assistance (MSA)

Warning function

- Visual and supplementary warning
- Speed limitation function
- Shall be possible to exceed for safety reasons
- May not vary more than +/- 3 km/h
- Stabilized speed shall not exceed set-speed

Safety Assist – SAS scoring

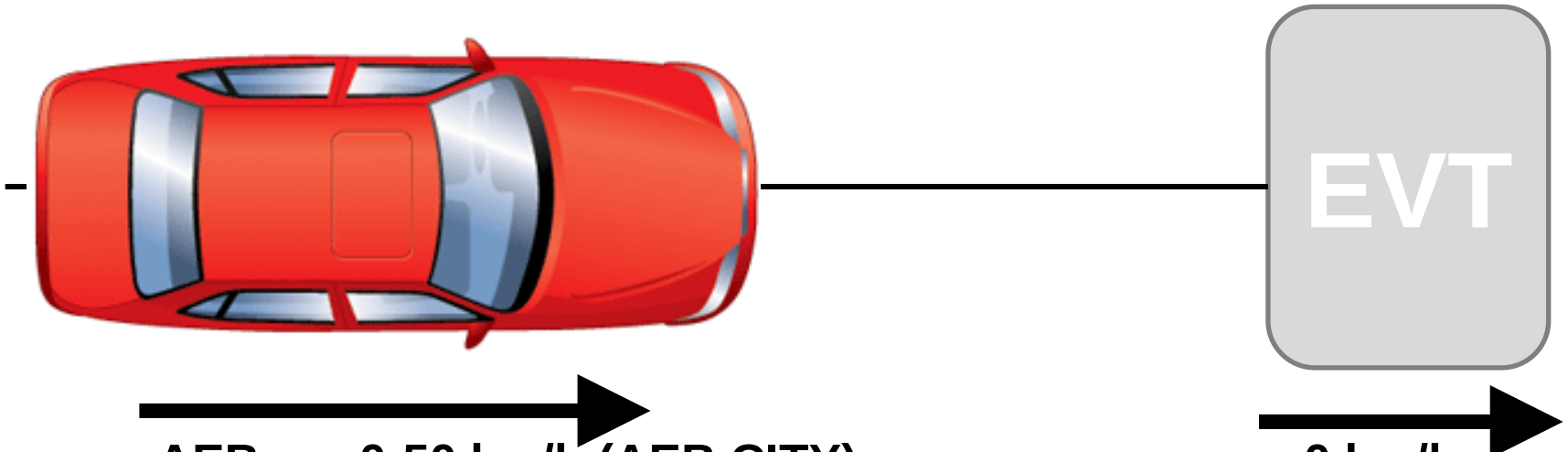
	SLIF	MSA	ISA
Communicating speed limit	1.5		1.5
Camera based	**0.5**		**0.5**
Digital Map based	**0.5**		**0.5**
Camera and Digital Map based	**1.5**		**1.5**
Warning		1	2
Driving Support (limitation)		1	1
Max score available	1.5	2	4.5

Raw score scaled to max. 3 points in SA

Safety Assist

AEB Inter-Urban

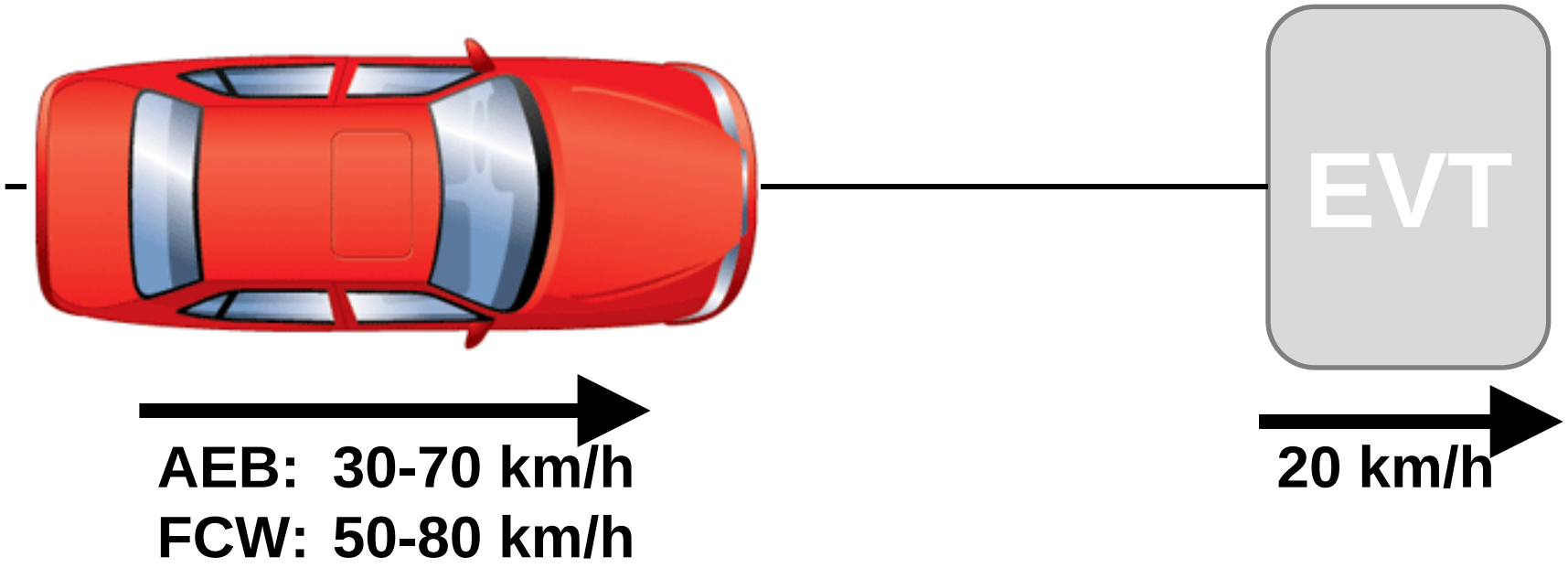
AEB Inter Urban – CCRs



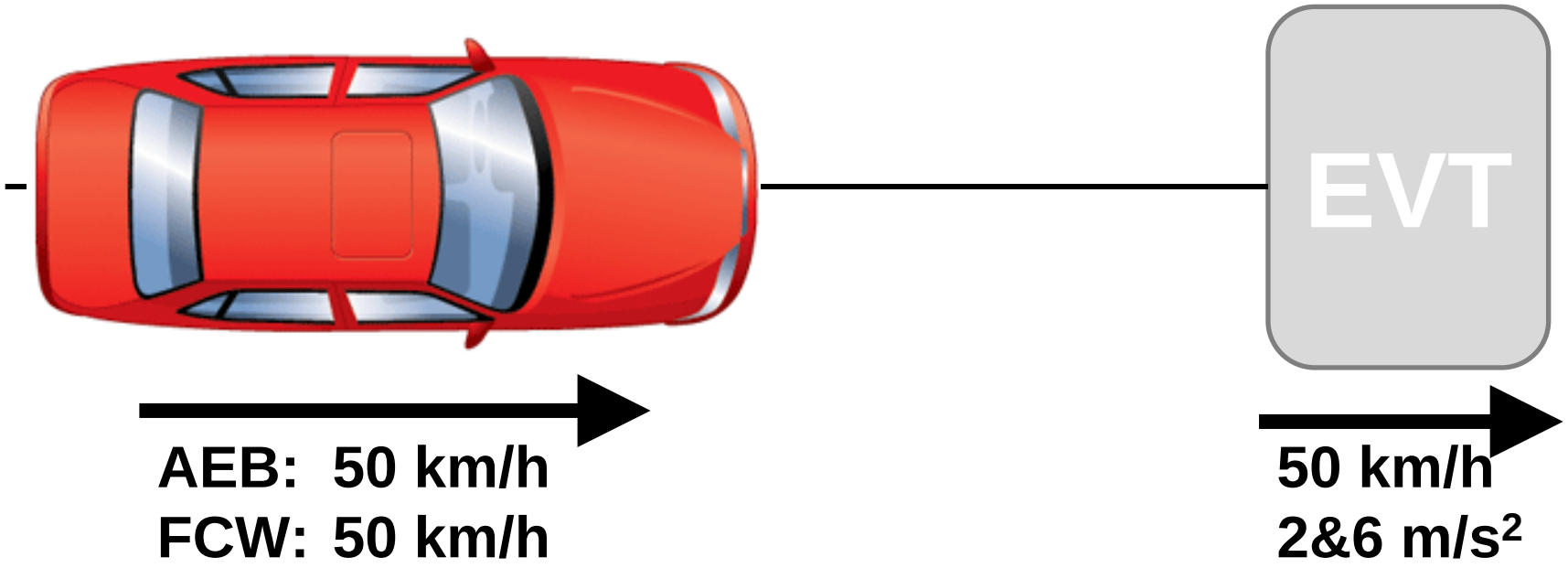
AEB: 0-50 km/h (AEB CITY)
FCW: 30-80 km/h

0 km/h

AEB Inter Urban – CCRm



AEB Inter Urban – CCRb



AEB Inter Urban – EVT

Impactable up to 50 km/h differential speed

The OEM needs to demonstrate their system is active and is reducing significant speed in high speed tests

Works with:

Radar (24 & 77 GHz)

LIDAR

Camera

PMD

AEB Inter Urban – Test tolerances

Boundary conditions

Speed of VUT (GPS-speed)	Speed + 1.0 km/h
Speed of EVT (GPS-speed)	Speed + 1.0 km/h
Lateral deviation from test path	0 ± 0.1 m
Relative distance VUT and EVT (CCRb)	0 ± 0.5m
Yaw velocity	0 ± 1.0 °/s
Steering wheel velocity	0 ± 15.0 °/s

Steering robot required to meet tolerences

Eligible for scoring if:

System fitment rates:

- 2014 50% fitment
- 2015 50% fitment
- 2016 70% fitment
- 2017 100% fitment

AEB Inter Urban – HMI

Prerequisites:

AEB function default ON after every journey

FCW system warning needs to be loud and clear

HMI Assessment:

Activation/deactivation AEB and/or FCW function

Supplementary warning for FCW

Reversible pre-tensioning of the belt in the pre-crash phase

AEB City - Scoring

Test speed	Points	
	AEB	FCW
10	**1**	**-**
15	**2**	**-**
20	**2**	**-**
25	**2**	**-**
30	**2**	**-**
35	**2**	**-**
40	**1**	**-**
45	**1**	**-**
50	**1**	**-**

CCR stationary

Linear interpolation of speed to calculate score in case of mitigation.

AEB Inter-Urban - Scoring

Test speed	Points	
	AEB	FCW
30	-	2
35	-	2
40	-	2
45	-	2
50	-	3
55	-	2
60	-	1
65	-	1
70	-	1
75	-	1
80	-	1

CCR stationary

Linear interpolation of speed to calculate score in case of mitigation.

AEB Inter-Urban - Scoring

Test speed	Points	
	AEB	FCW
30	**1**	**-**
35	**1**	**-**
40	**1**	**-**
45	**1**	**-**
50	**1**	**1**
55	**1**	**1**
60	**1**	**1**
65	**2**	**2**
70	**2**	**2**
75	**-**	**2**
80	**-**	**2**

CCR moving

Linear interpolation of speed to calculate score in case of mitigation.

AEB Inter-Urban - Scoring

Test speed	Points	
	AEB	FCW
50, 12m, 2m/s²	**1**	**1**
50, 40m, 2m/s²	**1**	**1**
50, 12m, 6m/s²	**1**	**1**
50, 40m, 6m/s²	**1**	**1**

CCR braking

Linear interpolation of speed to calculate score in case of mitigation.

AEB City - Scoring

AEB	FCW	HMI
2.5 points	-	0.5 points
CCRb x %	-	Deactivation
-	-	-
-	-	-

AEB Inter-Urban - Scoring

AEB 1.5 points	FCW 1.0 points	HMI 0.5 points
CCRb -	CCRb x %	Deactivation
CCRm x %	CCRm x %	Supplementary warning
CCRb x %	CCRb x %	Reversible pre-tensioning

Safety Assist

Scoring

Safety Assist - Scoring

	2013	2014	2015
SBR	**3**	**3**	**3**
ESC	**3**	**3**	**3**
SAS	**3**	**3**	**3**
AEB Inter-Urban		**3**	**3**
LDW/LKA		**1**	**1**
Total	9	13	13
Weight	**10%**	**20%**	**20%**

Questions?

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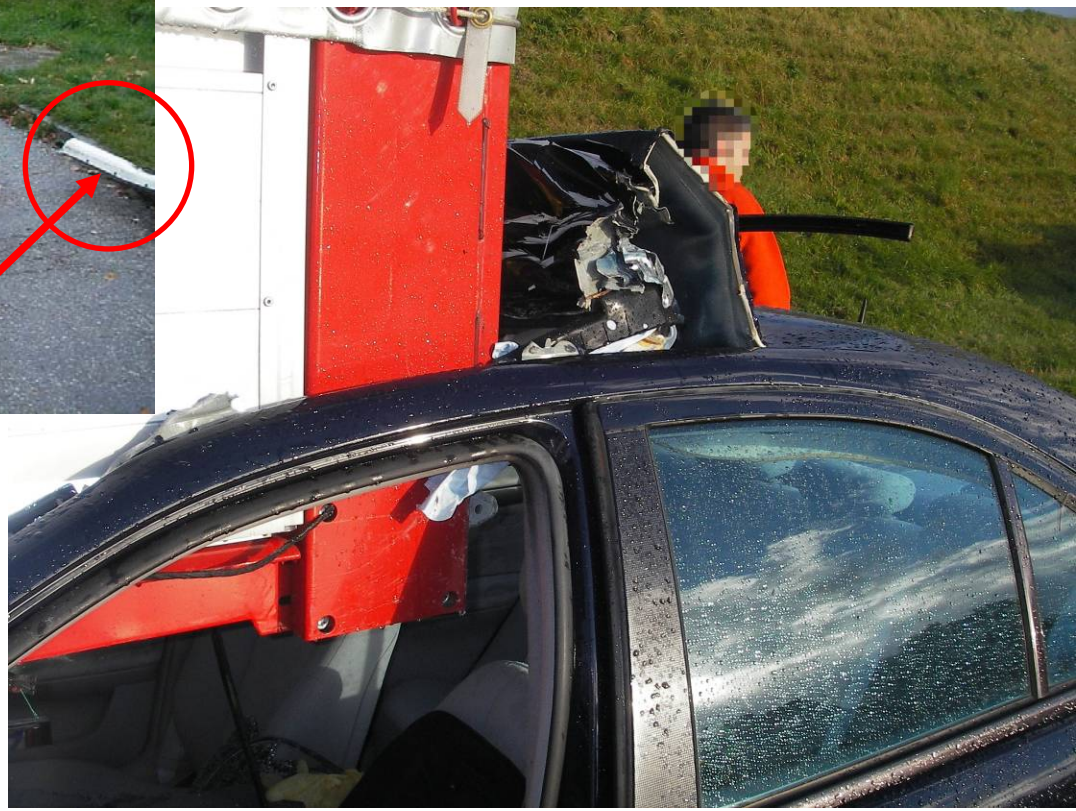
Unfälle mit Lkw

Thomas Unger, Passive Sicherheit, Unfallforschung (FCT)

Unfallgeschehen der ADAC Unfallforschung



abgerissener
undeformierter
Unterfahrschutz

ADAC Unfallforschung - Unterfahren

Unfallgeschehen der ADAC Unfallforschung

Fall: 21671 Lkw – Lkw Auffahrunfall

<u>Umstände des Unfalls:</u>

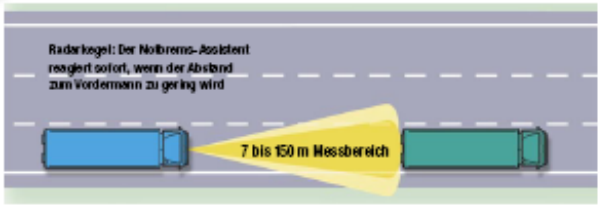
Auffahren eines Lkw auf ein Stauende: Lkw Auflieger

Hohe Aufprallgeschwindigkeit

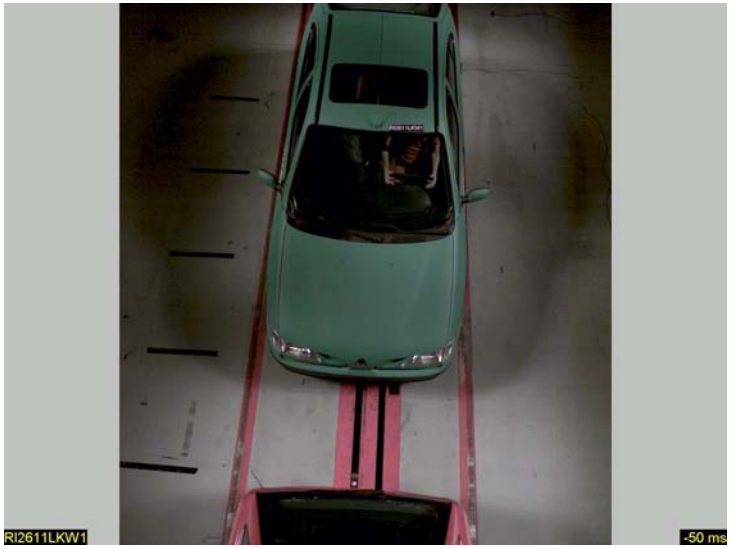
Verletzungen: tödliche Verletzungen des Auffahrenden

Verbesserung: Fahrerassistenzsysteme

Der Notbrems-Assistent von DaimlerChrysler kann Auffahrunfälle durch Lkw verhindern oder deutlich entschärfen. Die Bemühungen um mehr Verkehrssicherheit werden mit dem »Gelben Engel« 2007 für Innovation ausgezeichnet



Was passiert bei…



Lkw mit 5,5 t
70 km/h

Verzögerung:

6 m ~ 1g
2 m ~ 6g

Vielen Dank
für Ihre Aufmerksamkeit!