



Product Service

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TÜV SÜD - Tire Test 2017

255/50 R19 – Goodyear Eagle F1 Asymmetric 3 SUV

Tire Performance Test acc. to PPP 90023A:2014

Test Period: October 2017

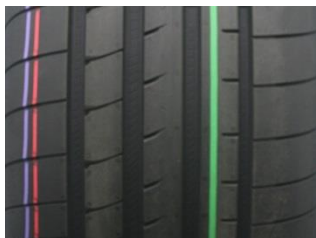
Report No. 713117618G

TIRE DETAILS

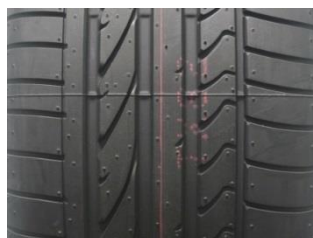
DIMENSION: 255/50 R19

TIRE BRANDS / PATTERNS IN THE TEST:

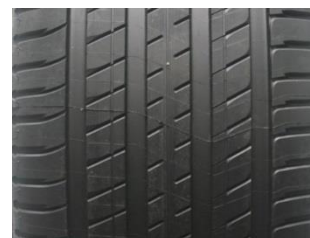
REFERENCE TIRE:



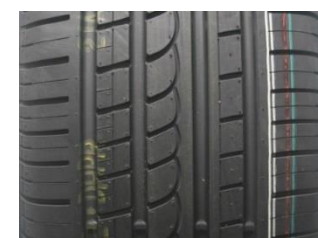
GOODYEAR
EAGLE F1 ASYM. 3 SUV
107 Y, DOT K5 3917



BRIDGESTONE
DUELER H/P SPORT
107 Y, DOT EJVV DCH 0417 - 1717



MICHELIN
LATITUDE SPORT 3
107 W, DOT F3XX 013X 0917 - 1217



PIRELLI
P ZERO ROSSO
103 W, DOT 9364 N274 0417

- The test samples of Goodyear Eagle F1 Asymmetric 3 SUV were provided for the test by the client.
- All other tires were purchased in the normal market by TÜV SÜD.
- TÜV SÜD randomly selected the tires for the individual tests.

TEST DETAILS

■ Test Locations

- Wet & Dry: GPG Mireval (F), ATP Papenburg (D)
- Noise: Uni Neubiberg (D)
- Rolling Resistance: TÜV SÜD PS Garching (D)

■ Test Vehicles

- Braking, LWG, Aquaplaning in curve: BMW X5 30d
- Handling: BMW X5 40d
- Noise: Audi Q7 3.0 TDI
- Aquaplaning straight-line: Mazda Tribute

■ Procedure and Evaluation

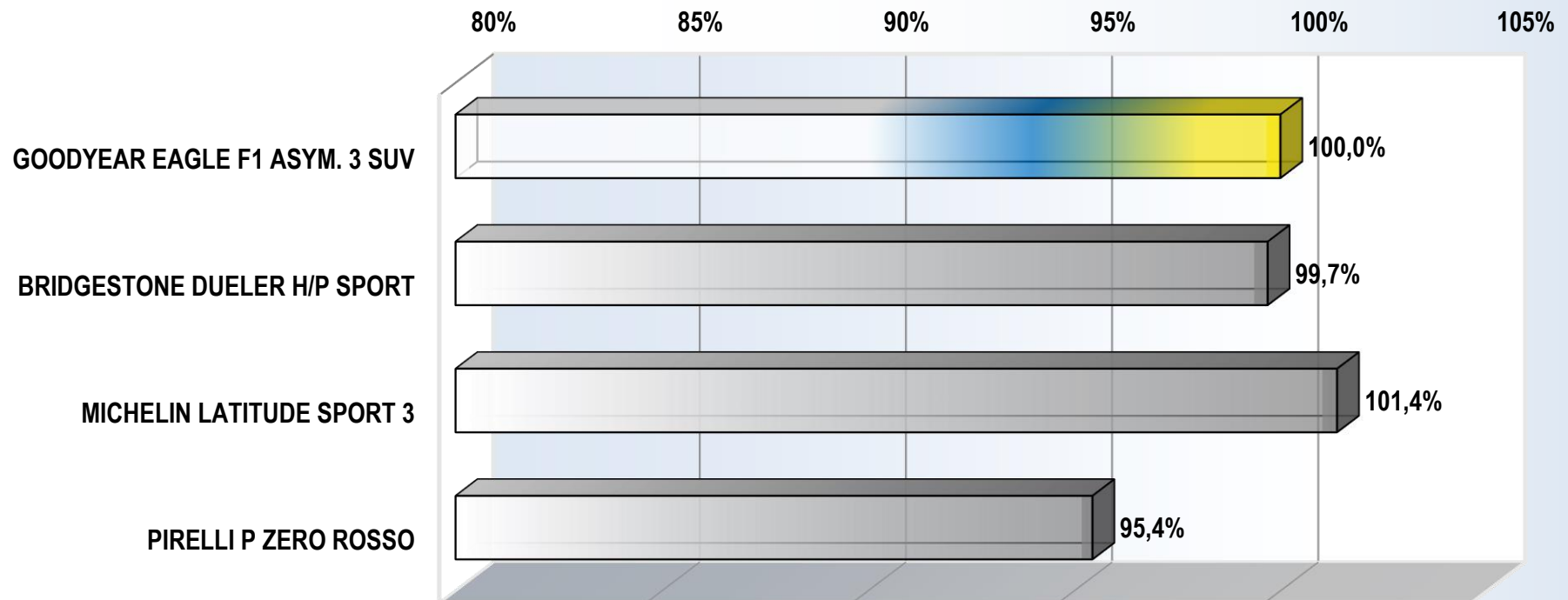
- In most tests, the reference/control tire is tested repeatedly in the progress of the test to detect and consider changes of the ambient test parameters and correct its performance by linear interpolation.
- Generally, all tires in a test are primarily evaluated in relation to the reference/control tire.
- The performance is expressed as a percentage value, calculated on the basis of the measured and corrected test data.
- In this present evaluation, the performance of each tire is assessed relative to the candidate tire (Goodyear $\triangleq$ 100%).
- In all evaluations, a percentage >100% means better and <100% means worse.

TEST RESULTS

■ AQUAPLANING STRAIGHT-LINE

- Water depth: ~ 8mm
- Aquaplaning speed at 15% slip difference
- Result Goodyear Eagle F1 Asym. 3 SUV: Ø Aquaplaning speed: 69.8 km/h

AQUAPLANING STRAIGHT-LINE PERFORMANCE * [%]



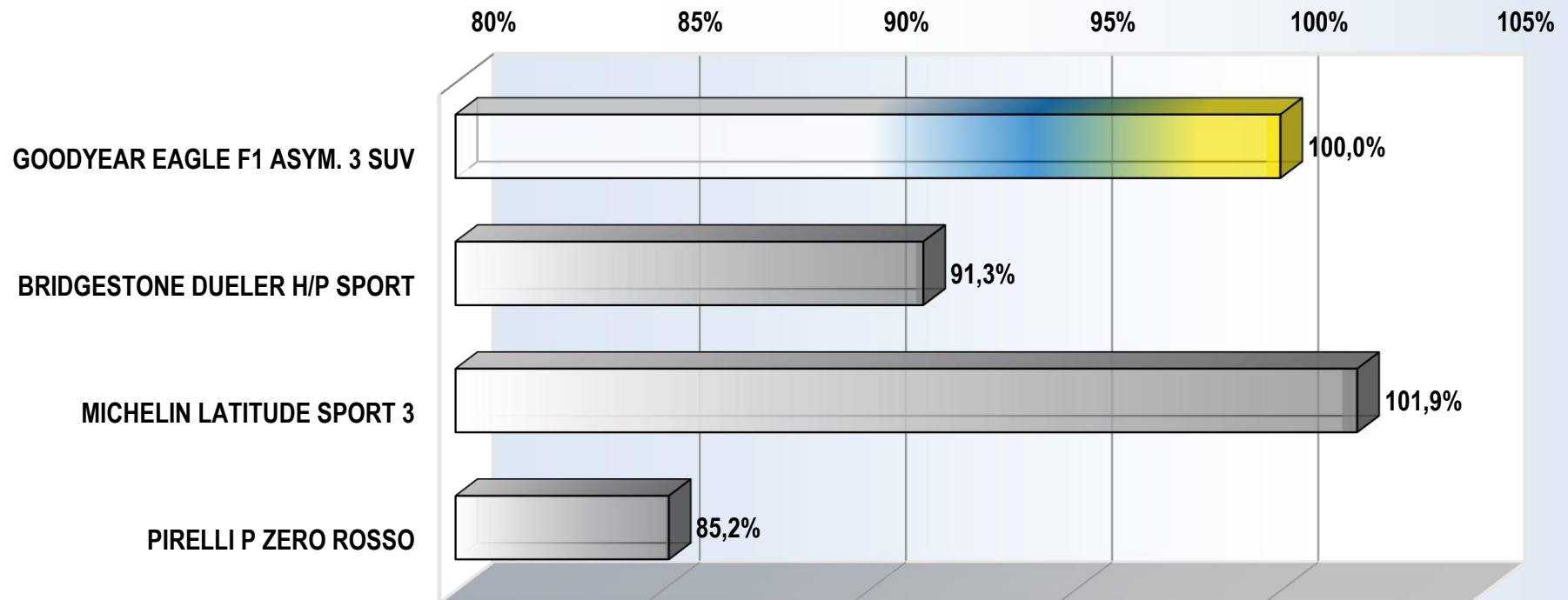
*) The calculation of the percentage performance is based on the aquaplaning speed.

TEST RESULTS

■ AQUAPLANING IN CURVE

- ESP off
- Radius: 100 m
- Water depth: ~ 8 mm
- Result Goodyear Eagle F1 Asym. 3 SUV: $\emptyset$ Integral A / $a_{lat \max}$: 73,0 / 2,73 m/s²

AQUAPLANING IN CURVE PERFORMANCE * [%]



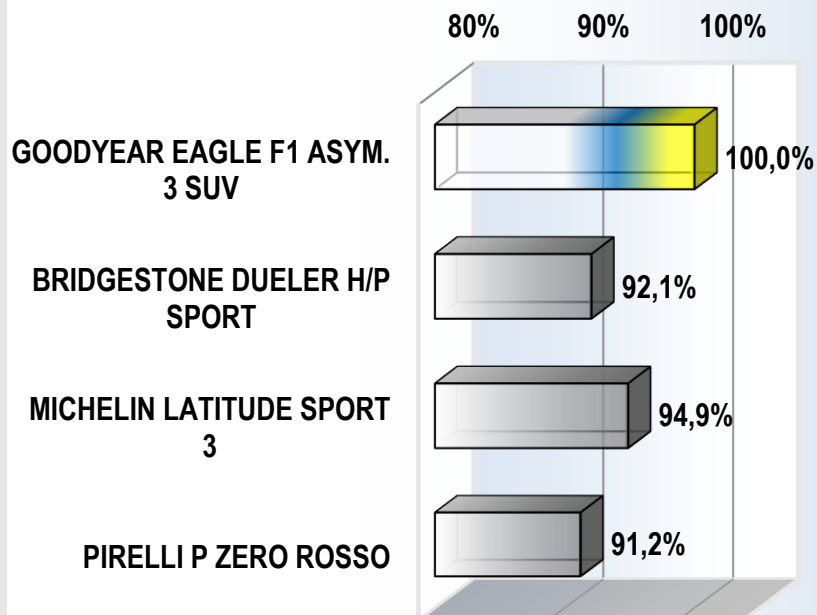
*) The calculation of the percentage performance is based on the lateral acceleration.

TEST RESULTS

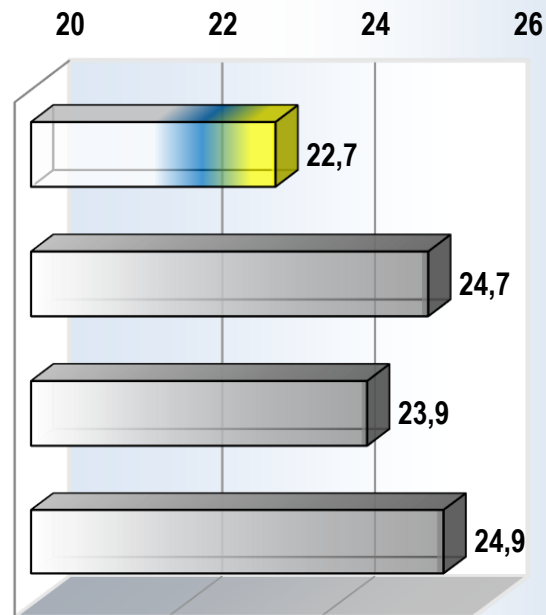
WET BRAKING HIGH μ

- ABS-braking
- Speed range: 80 to 20 km/h
- Tested on high μ wet surface
- Result Goodyear Eagle F1 Asym. 3 SUV: Ø Stopping distance / mean deceleration: 21.3 m / 10.88 m/s²

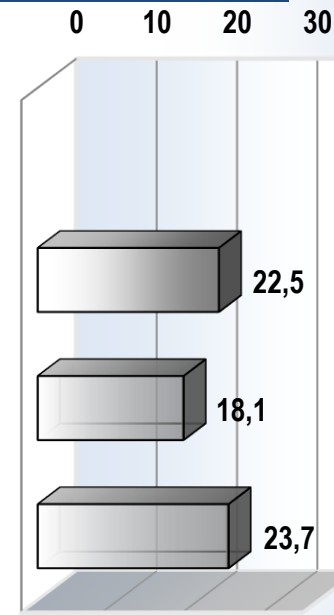
WET BRAKING PERFORMANCE * [%]



STOPPING DISTANCE [m], 80-0 km/h **



RESIDUAL SPEED WHEN GY STOPPED [km/h] ***



*) The calculation of the percentage performance is based on the mean deceleration values resulting from the measured braking distances.

**) The extrapolation is based on the mean corrected deceleration values resulting from the measured braking distances.

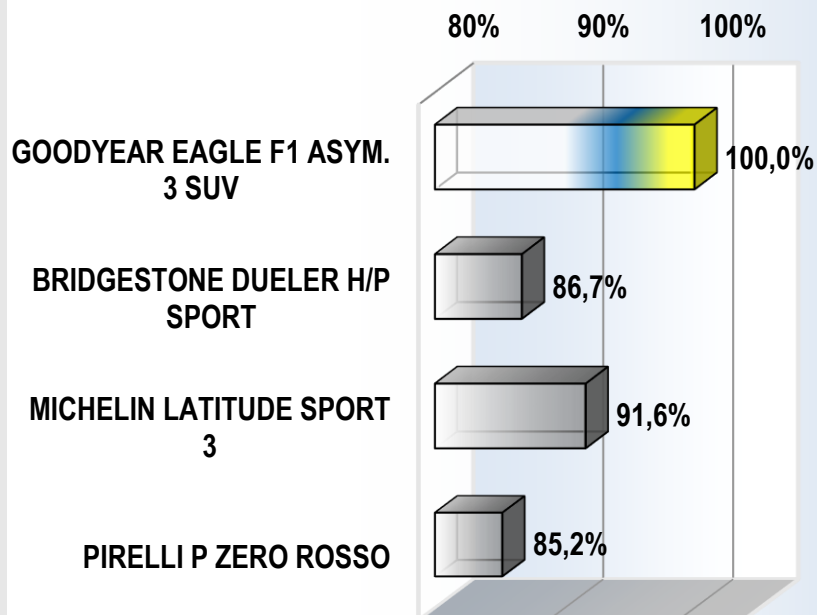
***) The calculation of the residual speed is based on the extrapolated stopping distance (80-0 km/h) and the mean deceleration values resulting from the measured braking distances.

TEST RESULTS

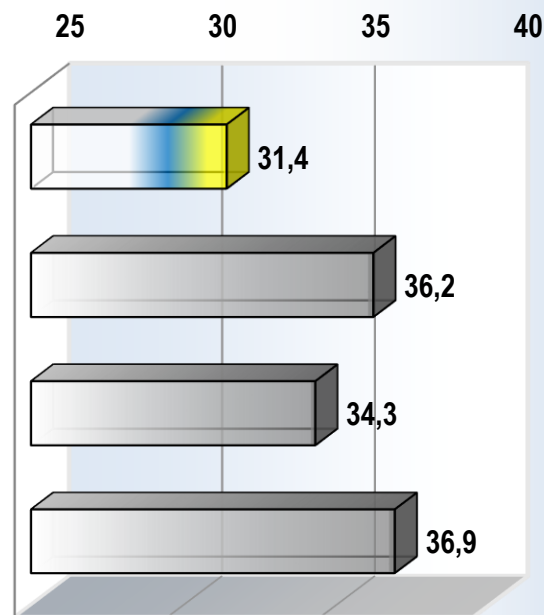
■ WET BRAKING LOW μ

- ABS-braking
- Speed range: 80 to 20 km/h
- Tested on low μ wet surface
- Result Goodyear Eagle F1 Asym. 3 SUV: Ø Stopping distance / mean deceleration: 29.5 m / 7.86 m/s²

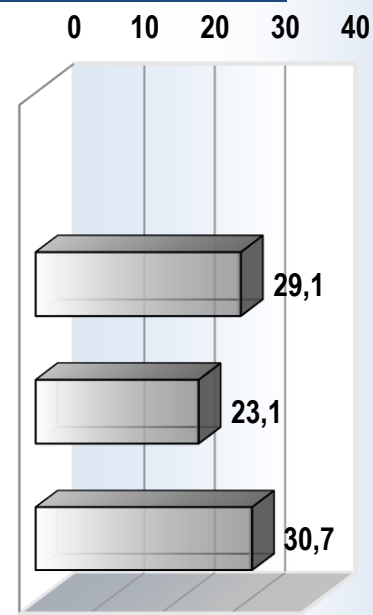
WET BRAKING PERFORMANCE * [%]



STOPPING DISTANCE [m], 80-0 km/h **



RESIDUAL SPEED WHEN GY STOPPED [km/h] ***



*) The calculation of the percentage performance is based on the mean deceleration values resulting from the measured braking distances.

**) The extrapolation is based on the mean corrected deceleration values resulting from the measured braking distances.

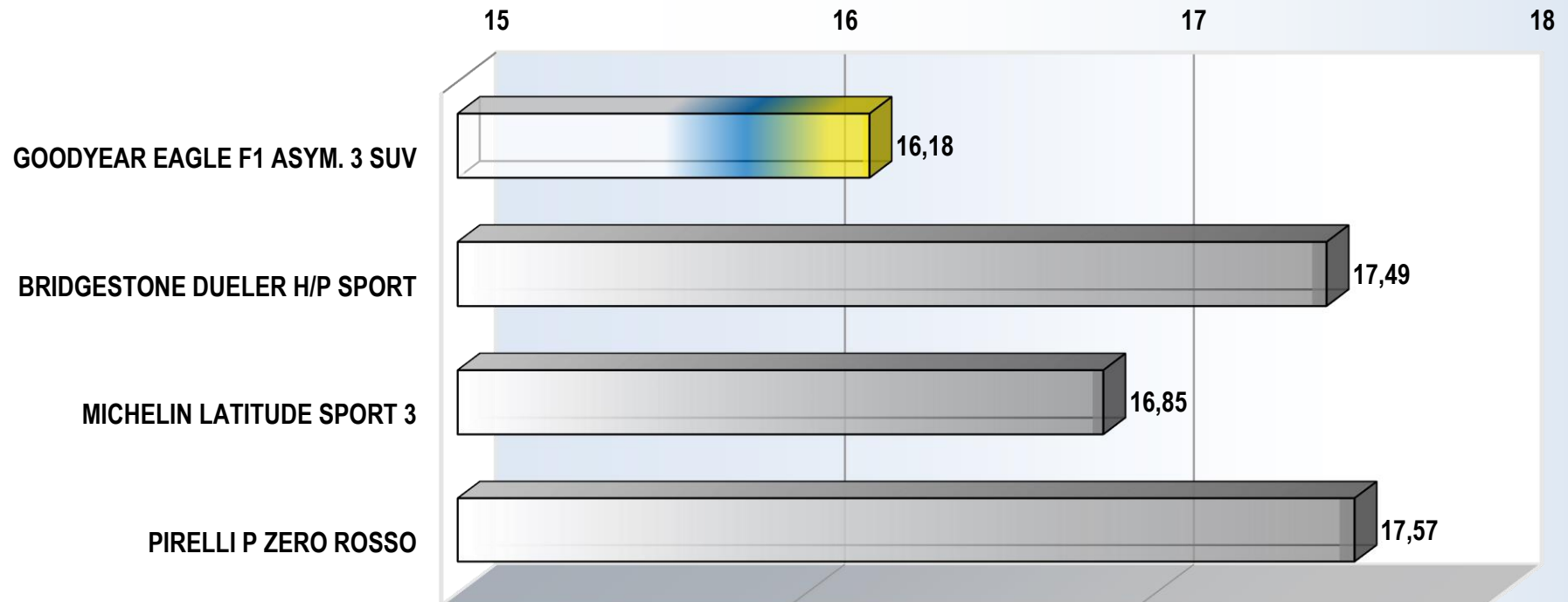
***) The calculation of the residual speed is based on the extrapolated stopping distance (80-0 km/h) and the mean deceleration values resulting from the measured braking distances.

TEST RESULTS

■ LATERAL WET GRIP

- ESP off
- Circle radius: 42 m
- Test surface: wet asphalt circle
- Result Goodyear Eagle F1 Asym. 3 SUV: Ø Lap time / mean lateral acceleration: 16.18 sec / 6.33 m/s²

LATERAL WET GRIP - LAP TIMES * [sec]



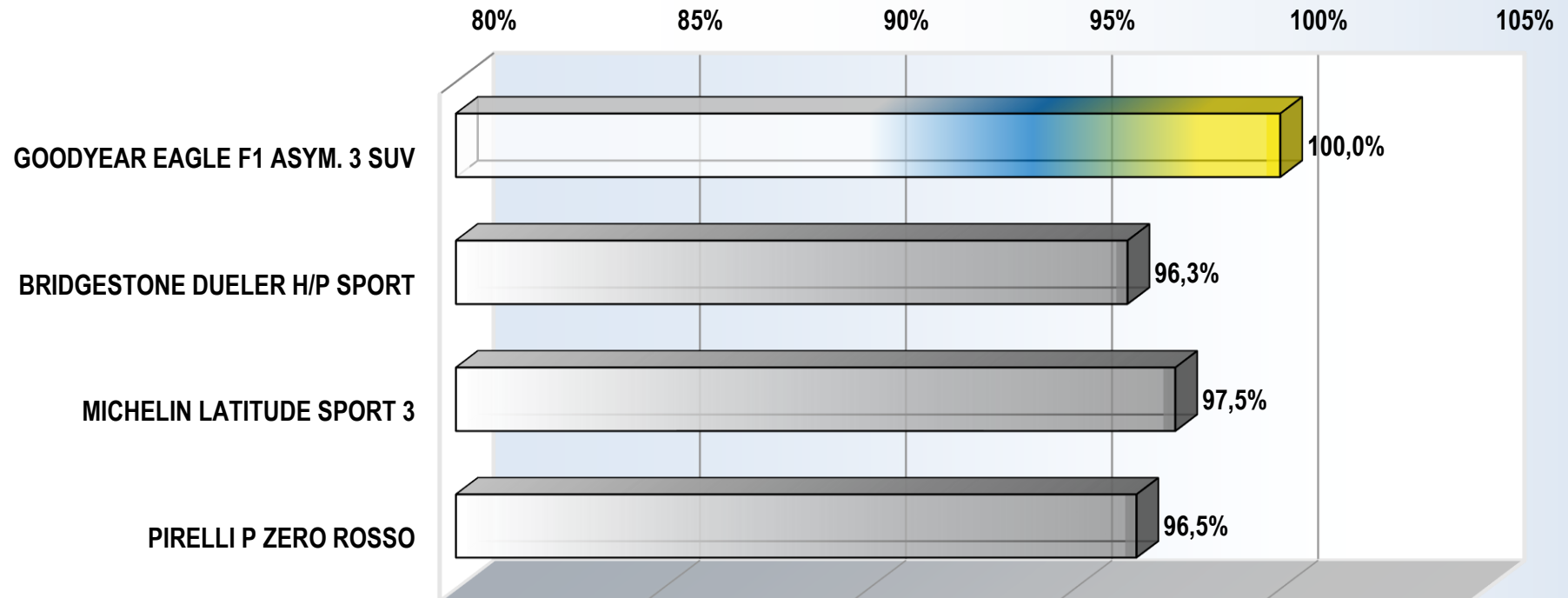
*) The calculation of the lap times is based on the mean lateral acceleration values and the percentage performances.

TEST RESULTS

■ WET HANDLING

- ESP off
- Subjective assessment & lap times
- Handling track with wet asphalt, length: 1700 m
- Result Goodyear Eagle F1 Asym. 3 SUV: Ø Speed: 89.4 km/h Ø Rating (out of max. 10): 8.64

WET HANDLING PERFORMANCE * [%]



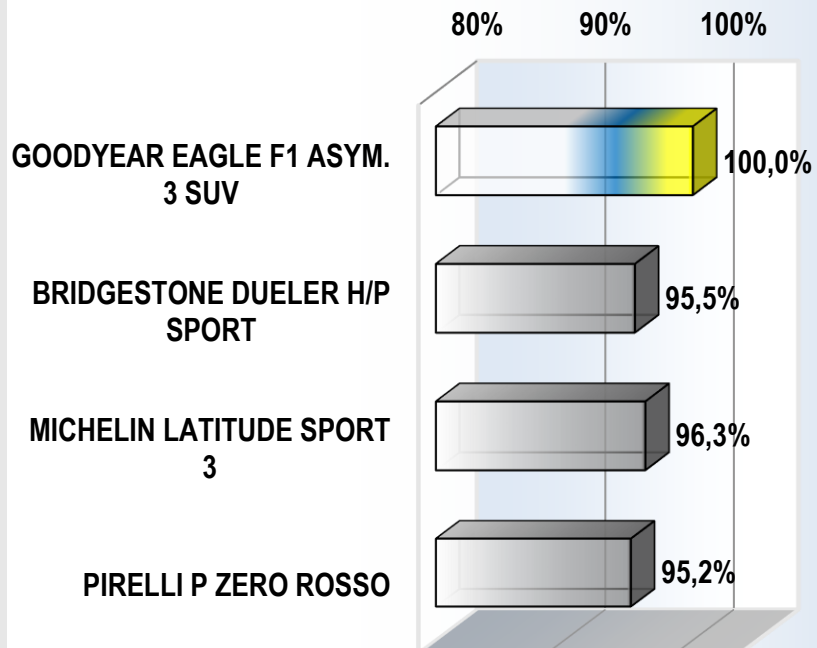
*) The calculation of the percentage performance is based on the speed and the rating scores (at the ratio 2:1).

TEST RESULTS

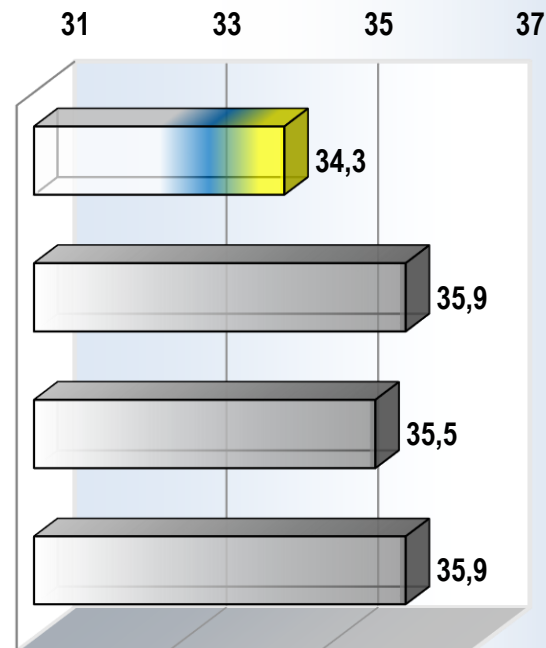
■ DRY BRAKING

- ABS-braking
- Speed range: 100 to 0 km/h
- Result Goodyear Eagle F1 Asym. 3 SUV: Ø Stopping distance / mean deceleration: 34.3 m / 11.26 m/s²

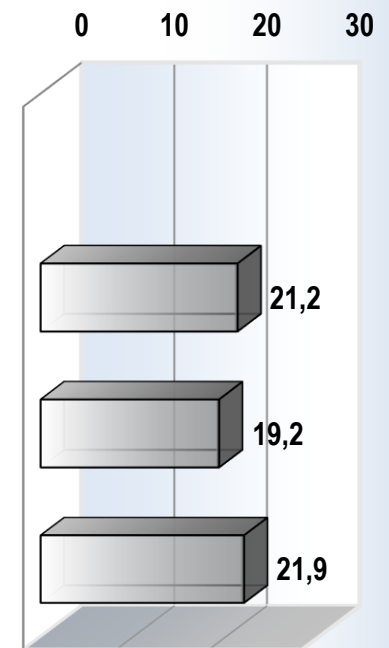
DRY BRAKING PERFORMANCE * [%]



STOPPING DISTANCE [m], 100-0 km/h



RESIDUAL SPEED WHEN GY STOPPED [km/h] **



*) The calculation of the percentage performance is based on the mean deceleration values resulting from the measured braking distances.

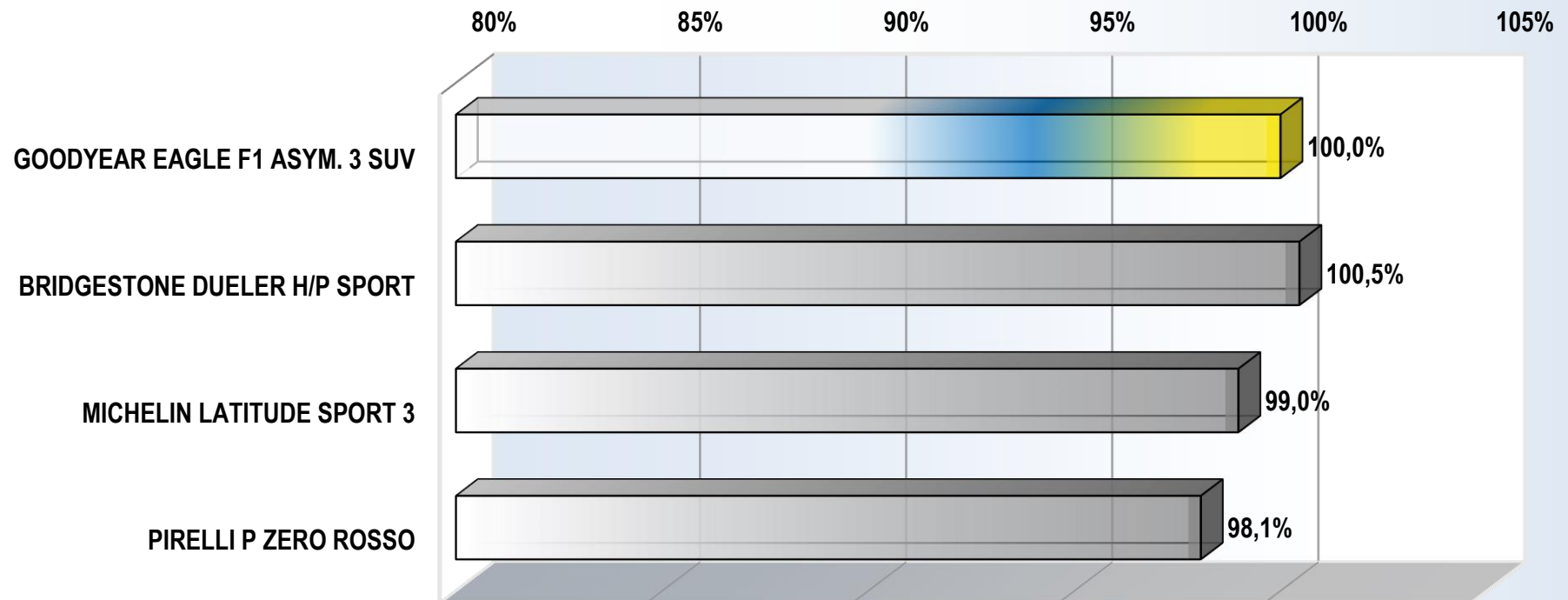
**) The calculation of the residual speed is based on the measured braking distances and the mean deceleration values resulting from the measured braking distances.

TEST RESULTS

■ DRY HANDLING

- ESP off
- Subjective assessment & lap times
- Handling track with dry asphalt, length: 3100 m
- Result Goodyear Eagle F1 Asym. 3 SUV: Ø Speed: 105.6 km/h Ø Rating (out of max. 10): 8.30

DRY HANDLING PERFORMANCE * [%]



*) The calculation of the percentage performance is based on the speed and the rating scores (at the ratio 2:1).

TEST RESULTS

■ ROLLING RESISTANCE

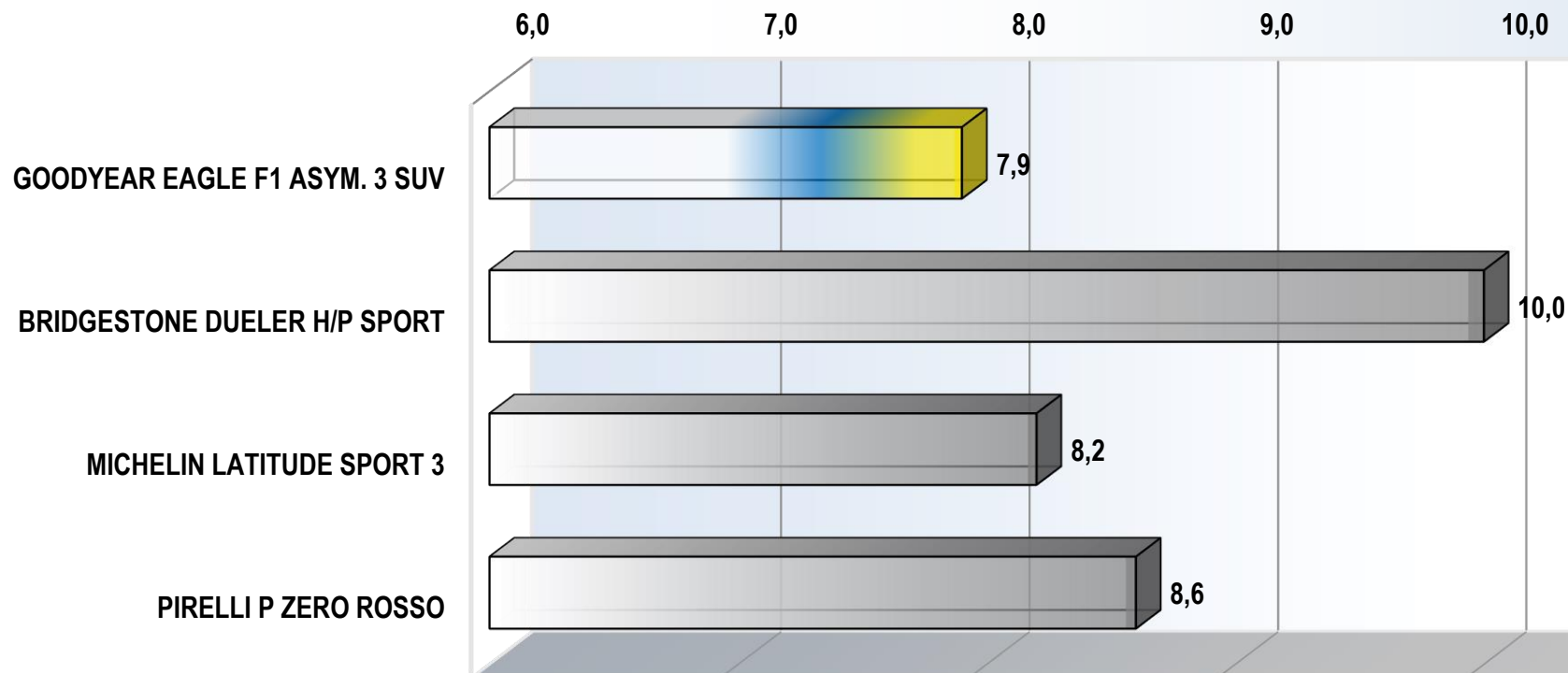
- Acc. to ISO 28580 / EC 1222/2009

- Electrical power method

- Load & Inflation: 780 kg / 700 kg - 2.50 bar / 2.10 bar

- Result Goodyear Eagle F1 Asym. 3 SUV: RR-Force $F_R = 62.4$ N RR-Coefficient $c_R = 8.16$ kg/t ($\triangleq$ EC Label RRC = 7.9)

ROLLING RESISTANCE EC LABEL VALUE c_R [kg/t]



TEST RESULTS

■ PASS-BY NOISE

- In accordance to ECE R117
- Reference speed: 80 km/h
- Load & Inflation FA / RA: 1370 / 1390 kg - 2.00 / 2.00 bar
- Result Goodyear Eagle F1 Asym. 3 SUV: $L_R(J_{ref}) = 70.5 \text{ dB(A)}$ Noise level acc. ECE R117 = 69 dB(A)

TIRE ROLLING NOISE (measured, normalized values) [dB(A)]

The resulting type approval values are given in brackets.

