

# TEST REPORT



## Stihl MS 311

### OWNER OF TEST CERTIFICATE:

Test no.: 5303

Andreas Stihl AG & Co. KG  
Andreas-Stihl-Str. 4  
D – 71336 Waiblingen  
[www.stihl.de](http://www.stihl.de)





## Test results and evaluations

Andreas Stihl AG & Co. KG, Badstrasse 115, D – 71336 Waiblingen

### Chainsaw tested with 45 cm cutting set.

#### Application field

Petrol chainsaw in the power range up to 4 kW for semiprofessional use.

Operation, maintenance and product safety		
Operability / Handling / Ergonomics		
Control elements	Easy to reach and operate.	+
Starting the engine	Decompression valve.	o
Engine control	Carburettor pre-set. Setting range of carburettor-/ idling screw limited.	o
Mounting of the saw chain	Easy to access and use.	o
Chain tensioning	Simple. Tensioner on the side of the machine.	o
Refilling	No tools required for removing fuel tank caps. Easy access.	o
Maintenance		
Engine-, airfilter- and spark plug cover	One-piece cover. Dismantling difficult. Tool required (3 screws).	o
Airfilter		
Cleaning	No tools required.	+
Soiling	Low	+
Reliability	No noticeable problems in the course of the tests.	o
Safety and user information		
Instruction manual	Clearly, well illustrated.	+
Work safety		
EG-type examination	DPLF K-EG-2009/5202	w/o r.
GS-type examination	DPLF K-GS-2009/5203	

**Technical data****Main dimensions and weights**

Length	Including cutting set 45 cm	890 mm
	Engine unit w/o bumper spike	443 mm
Width	Engine unit w/ handle	195 mm
		254 mm
Height	Engine unit w/ handguard	217 mm
		296 mm
Stump height	Sprocket cover	21 mm
	Handle	24 mm
Tank volumes	Fuel	600 ml
	Chain oil	300 ml
Empty weight	Including cutting set 45 cm	7,6 kg
	w/o cutting set	6,3 kg

**Cutting set**

- Clutch bell w/ external sprocket
- Guide bar Rollomatic E with sprocket nose.
- Semi- or full chisel chain
- Pitch 3/8" with gauge 1,6 mm
- Further guide bar lengths and chain types fitting the saw type available

**Engine data**

- Air-cooled single-cylinder two-stroke engine
- Displacement: 59,0 cm<sup>3</sup>; cylinder bore: 47,0 mm; piston stroke: 34,0 mm
- Spark plug: Bosch WSR-6F or NGK BPMR 7A
- Idle speed: 2.800 min<sup>-1</sup>; racing speed: 13.000 min<sup>-1</sup>

Fuel: minimum octane index 90 ROZ (mixture ratio 1:50) or two-stroke alkylate gasoline with „KWF-Test“. Manufacturer's recommendation: Stihl MotoMix

Power / torque at P <sub>max</sub> = 3,1 kW, M = 3,1 Nm M <sub>max</sub> = 3,3 Nm, P = 2,4 kW	revolutions 9.750 min <sup>-1</sup> 7.500 min <sup>-1</sup>		Power / displacement 53 kW/l 42 kW/l		w/o r.
Power to weight ratio MS 311	w/ cutting set 45 cm		w/o cutting set		+
	0,4 kW/kg		0,5 kW/kg		
Fuel consumption	at max. power output		at max. torque output		+
absolute / specific	1,8 l/h	436 g/kWh	1,5 l/h	451 g/kWh	
Chain oil consumption	at 5.000 min <sup>-1</sup>		at 9.000 min <sup>-1</sup>		o
min / max	4 ml/min	9 ml/min	8 ml/min	18 ml/min	

**Exhaust emissions**

Comply with stage V of engine category NRSh-v-1a of EU-directive (EU) 2016/1628.  
Approval no. given on the type plate.

	Limits according to EU regulation 2016/1628	Manufacturer's information		w/o r.
CO	805 g/kWh	- g/kWh		
HC + NO <sub>x</sub>	50,0 g/kWh	- g/kWh		
Noise emissions (maximum values according to manufacturer)				
Max. noise emissions (Cutting set 45 cm)	Idle	Full throttle	Full load	-
At the operator's ear	82 dB(A)	108 dB(A)	104 dB(A)	
Equivalent sound pressure level according to DIN EN ISO 22868: 105 dB(A) Equivalent sound power level according to DIN EN ISO 22868: 115 dB(A) (Mix: idle / full throttle)				
Vibration (maximum values according to manufacturer)				
Max. vibrations (Cutting set 45 cm)	Idle	Full throttle	Full load	o
Front handle	3,0 m/s <sup>2</sup>	3,6 m/s <sup>2</sup>	4,9 m/s <sup>2</sup>	
Rear handle	2,5 m/s <sup>2</sup>	3,9 m/s <sup>2</sup>	5,0 m/s <sup>2</sup>	
Equivalent total vibration value according to DIN EN ISO 22867 Front handle: 3,9 m/s <sup>2</sup> Rear handle: 4,0m/s <sup>2</sup>				
Rating: ++ / + / o / - / -- ; o = standard ; w/o r. = w/o rating ; – compliance with threshold value				

In the field of measurement tolerances, the Stihl MS 311 is still manufactured unchanged.

Published with funding from the Federal Ministry of Food and Agriculture on the basis of a resolution of the German Bundestag and by the Federal State Ministries of Forestry by:



#### Test committee equipment and tools

**Chairman: Dr. Johannes Windisch,  
Regensburg**

**Test completion**      **November 2021**  
**Approval until**      **November 2026**  
**First approval**      **August 2011**  
**Responsible test engineer**  
**Sebastian Wagner**  
[sebastian.wagner@kwf-online.de](mailto:sebastian.wagner@kwf-online.de)

#### Practical work with professional users

Kuratorium für Waldarbeit und Forsttechnik e.V.  
Spremberger Straße 1  
D - 64823 Groß-Umstadt  
Phone: +49 6078/785-0  
Fax: +49 6078/785-39  
Homepage: [www.kwf-online.de](http://www.kwf-online.de)