

# Dortmunder 13°BLG Browamator

- Gravity **14.5 BLG**
- ABV **6 %**
- IBU **31**
- SRM **4.5**
- Style **Dortmunder Export**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **80 min**
- Evaporation rate **15 %/h**
- Boil size **26.4 liter(s)**

## Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **19.6 liter(s)**
- Total mash volume **24.5 liter(s)**

## Steps

- Temp **50 C**, Time **20 min**
- Temp **67 C**, Time **50 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **19.6 liter(s)** of strike water to **53.8C**
- Add grains
- Keep mash **20 min** at **50C**
- Keep mash **50 min** at **67C**
- Keep mash **10 min** at **76C**
- Sparge using **11.7 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pilsneński	3.7 kg (75.5%)	80.5 %	3
Grain	Weyermann - Monachijski II	0.6 kg (12.2%)	78 %	23
Grain	Weyermann - Carapils	0.6 kg (12.2%)	78 %	4

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Comet	30 g	60 min	8.3 %
Boil	Liberty	10 g	20 min	4.5 %
Aroma (end of boil)	Liberty	20 g	5 min	4.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Fermentis Saflager S-23	Lager	Dry	23 g	Fermentis

## Extras

Type	Name	Amount	Use for	Time
Water Agent	Kwas fosforowy 75%	20 g	Mash	80 min
Fining	Mech irlandzki	5 g	Boil	10 min

## Notes

- Klarstein Braucheld 45  
woda źródlana Saguaro 5l  
składniki mineralne: 474,36mg/l  
ANIONY:  
wodorowęglanowy HCO-3: 238,00  
siarczanowy SO2-4: 84,77  
chlorkowy Cl-:20,20  
Fluorkowy F-: 0,05  
KATIONY:  
potasowy K+: 0,90  
sodowy Na+: 6,90  
magnezowy: Mg2+: 14,58  
wapniowy Ca2+: 94,19

Kwas fosforowy - ilość to w rzeczywistości ml nie g, dodanie do wody do wysładzania. 10ml zacieranie, 10ml wysładzanie  
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