

## Helles 3

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **26**
- SRM **3.8**
- Style **Munich Helles**

### Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **22.8 liter(s)**

### Mash information

- Mash efficiency **68 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **18.8 liter(s)**
- Total mash volume **23.5 liter(s)**

### Steps

- Temp **66 C**, Time **45 min**
- Temp **70 C**, Time **30 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **18.8 liter(s)** of strike water to **71.8C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **30 min** at **70C**
- Keep mash **5 min** at **76C**
- Sparge using **8.7 liter(s)** of **76C** water or to achieve **22.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	4.5 kg (95.7%)	80 %	4
Grain	carapils	0.2 kg (4.3%)	75 %	6

### Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	lunga	15 g	60 min	11 %
Boil	Lublin (Lubelski)	30 g	5 min	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
FM31 Bawarska Dolina	Lager	Liquid	18000 ml	Fermentum Mobile

### Extras

Type	Name	Amount	Use for	Time
Fining	Whirfloc	1 g	Boil	5 min