

ciemno to widze

- Gravity **16.6 BLG**
- ABV **7 %**
- IBU **64**
- SRM **30.9**

Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **14.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.4 liter(s)**
- Total mash volume **15.2 liter(s)**

Steps

- Temp **62 C**, Time **45 min**
- Temp **68 C**, Time **30 min**
- Temp **55 C**, Time **10 min**

Mash step by step

- Heat up **11.4 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **45 min** at **62C**
- Keep mash **30 min** at **68C**
- Sparge using **6.9 liter(s)** of **76C** water or to achieve **14.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	1.7 kg (44.9%)	85 %	7
Grain	Weyermann - Pilsner Malt	1.2 kg (31.7%)	81 %	5
Grain	Carafa III	0.07 kg (1.8%)	70 %	1034
Grain	Weyermann - Carafa I	0.07 kg (1.8%)	70 %	690
Grain	castlemelting black	0.15 kg (4%)	72 %	1350
Grain	viking malt honing/crystal10l	0.1 kg (2.6%)	78.5 %	20
Grain	Rye, Flaked	0.5 kg (13.2%)	78.3 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	5 g	45 min	12.8 %
Boil	Crystal	10 g	45 min	4.5 %
Boil	Apollo	10 g	60 min	17 %
Boil	Apollo	10 g	15 min	17 %
Boil	Crystal	10 g	5 min	4.5 %

Boil	Chinook	10 g	5 min	12.8 %
Dry Hop	Chinook	35 g	7 day(s)	12.8 %
Dry Hop	Crystal	20 g	7 day(s)	4.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
librty balle ale	Ale	Dry	5 g	mogrove jack