101. OsloPA, 102. KolszIPA, 103. KolszPA

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **39**
- SRM **2.3**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **65 liter(s)**
- Trub loss **5 %**
- Size with trub loss **71.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **86 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **2 liter(s) / kg**
- Mash size **23.2 liter(s)**
- Total mash volume **34.8 liter(s)**

Steps

- Temp **68 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **23.2 liter(s)** of strike water to **80C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **76C**
- Sparge using **74.4 liter(s)** of **76C** water or to achieve **86 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pilsen Malt	11 kg *(90.2%)*	80.5 %	2
Grain	Barley, Flaked	0.6 kg *(4.9%)*	70 %	4
Sugar	cukier	0.6 kg *(4.9%)*	100 %	2

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Iunga	75 g	60 min	11 %
Boil	Citra	30 g	5 min	12 %
Boil	Centennial	30 g	5 min	9.2 %
Boil	El Dorado	30 g	5 min	16.6 %
Aroma (end of boil)	Citra	30 g	1 min	12 %
Aroma (end of boil)	Centennial	30 g	1 min	9.2 %
Aroma (end of boil)	El Dorado	30 g	1 min	16.6 %

Yeasts

Name	Type	Form	Amount	Laboratory
WLP029 - German Ale/Kölsch Yeast	Ale	Liquid	1000 ml	White Labs
Oslo	Ale	Liquid	1000 ml	Bootlegbiology

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.

Notes

- wiadro nr 1 Oslo w 25 stopniach w domu
  wiadro nr 2 14 blg Kolonskie w lodowce w 16C - 40 gram citra 40 gramCenntennial
  Wiadro nr 3 11 blg kolonskie w lodocwe w 16C - 40 gram citra 40 gram eldorado
  planowo warzenie 24.05
  May 21, 2020, 2:11 PM