apka

- Gravity **14.5 BLG**
- ABV **6 %**
- IBU **22**
- SRM **4.3**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **21 liter(s)**
- Total mash volume **27 liter(s)**

Steps

- Temp **63 C**, Time **30 min**
- Temp **70 C**, Time **30 min**
- Temp **77 C**, Time **10 min**

Mash step by step

- Heat up **21 liter(s)** of strike water to **69.1C**
- Add grains
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **70C**
- Keep mash **10 min** at **77C**
- Sparge using **11.4 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	5 kg *(83.3%)*	81 %	4
Grain	Briess - Pale Ale Malt	1 kg *(16.7%)*	80 %	7

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Cascade PL	30 g	45 min	5.5 %
Aroma (end of boil)	Cascade PL	70 g	5 min	5.2 %
Dry Hop	Zula	100 g	3 day(s)	7 %

Yeasts

Name	Type	Form	Amount	Laboratory
lutra	Ale	Slant	100 ml	omega