

s/m apa II

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **76**
- SRM **6**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **25.5 liter(s)**
- Trub loss **5 %**
- Size with trub loss **28.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **18 %/h**
- Boil size **36.7 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

Steps

- Temp **68 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **15 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **30 min** at **68C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **26.7 liter(s)** of **76C** water or to achieve **36.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3 kg (60%)	85 %	7
Grain	Monachijski typ II 20-25 EBC Weyermann	1 kg (20%)	80 %	20
Grain	Płatki jęczmienne	0.4 kg (8%)	85 %	3
Grain	Rye, Flaked	0.4 kg (8%)	78.3 %	4
Grain	Słód Caramunich Typ II Weyermann	0.2 kg (4%)	73 %	120

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	50 g	30 min	17.5 %
Boil	Simcoe	25 g	10 min	13.3 %
Boil	Amarillo	25 g	10 min	7.4 %
Aroma (end of boil)	Simcoe	25 g	1 min	13.3 %
Aroma (end of boil)	Amarillo	25 g	1 min	7.4 %
Whirlpool	Simcoe	50 g	0 min	13.3 %
whirlpool 80°C 20min				

Whirlpool	Amarillo	50 g	0 min	7.4 %
Whirlpool	Centennial	50 g	0 min	10.5 %
Dry Hop	Amarillo	100 g	3 day(s)	7.4 %
Dry Hop	Simcoe	100 g	3 day(s)	13.3 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale

Extras

Type	Name	Amount	Use for	Time
Water Agent	chlorek wapnia	5 g	Mash	60 min
Flavor	skórka cytryny	25 g	Boil	10 min