

APA

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **30**
- SRM **5.6**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **27 liter(s)**
- Trub loss **5 %**
- Size with trub loss **28.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **34.2 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.8 liter(s)**
- Total mash volume **26.4 liter(s)**

Steps

- Temp **58 C**, Time **10 min**
- Temp **67 C**, Time **30 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **19.8 liter(s)** of strike water to **64.3C**
- Add grains
- Keep mash **10 min** at **58C**
- Keep mash **30 min** at **67C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **21 liter(s)** of **76C** water or to achieve **34.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale/Pils Crisp	6 kg (90.9%)	81 %	6
Grain	Strzegom Monachijski typ I	0.5 kg (7.6%)	81 %	16
Grain	KARMELOWY CRYSTAL	0.1 kg (1.5%)	80 %	150

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	10 g	40 min	16.6 %
Aroma (end of boil)	Cascade PL	10 g	20 min	6.6 %
Aroma (end of boil)	Chinook PL	20 g	15 min	7.6 %
Aroma (end of boil)	Equinox	15 g	10 min	13.1 %
Aroma (end of boil)	Citra	15 g	7 min	12 %
Dry Hop	Citra	30 g	7 day(s)	12 %

Yeasts

Name	Type	Form	Amount	Laboratory
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US-05	Ale	Dry	11 g	---
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