

Nieramen

- Gravity **17.3 BLG**
- ABV **7.4 %**
- IBU **64**
- SRM **4.1**
- Style **American IPA**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **2.7 liter(s) / kg**
- Mash size **16.2 liter(s)**
- Total mash volume **22.2 liter(s)**

Steps

- Temp **63 C**, Time **20 min**
- Temp **65 C**, Time **20 min**
- Temp **67 C**, Time **20 min**
- Temp **78 C**, Time **1 min**

Mash step by step

- Heat up **16.2 liter(s)** of strike water to **71C**
- Add grains
- Keep mash **20 min** at **63C**
- Keep mash **20 min** at **65C**
- Keep mash **20 min** at **67C**
- Keep mash **1 min** at **78C**
- Sparge using **18.8 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Castlemalting Pilsen	5 kg (71.4%)	82 %	3
Grain	Strzegom Pale Ale	1 kg (14.3%)	79 %	6
Dry Extract	Ekstrakt słodowy super jasny	1 kg (14.3%)	85 %	5

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	25 g	60 min	11.7 %
Boil	Columbus/Tomahawk/Zeus	10 g	60 min	13.7 %
Boil	Izabella PL	25 g	20 min	5.1 %
Boil	Cascade	20 g	20 min	7.6 %
Aroma (end of boil)	Cascade	30 g	8 min	7.6 %
Aroma (end of boil)	Columbus/Tomahawk/Zeus	10 g	8 min	13.7 %
Aroma (end of boil)	Chinook	25 g	8 min	11.7 %

Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M44 US West Coast	Ale	Dry	11 g	Mangrove Jack's