

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 Pilzen | 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 |