

Czarna Perła

- Gravity **19.5 BLG**
- ABV ---
- IBU **118**
- SRM **30.6**
- Style **Black IPA**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21.9 liter(s)**
- Total mash volume **29.2 liter(s)**

Steps

- Temp **65 C**, Time **60 min**
- Temp **75 C**, Time **10 min**
- Temp **78 C**, Time **0 min**

Mash step by step

- Heat up **21.9 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **60 min** at **65C**
- Keep mash **10 min** at **75C**
- Keep mash **0 min** at **78C**
- Sparge using **10.7 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|---------------|-------|------|
| Grain | Strzegom Pale Ale | 5 kg (68.5%) | 79 % | 6 |
| Grain | Strzegom Wiedeński | 1 kg (13.7%) | 79 % | 10 |
| Grain | Carafa III | 0.3 kg (4.1%) | 70 % | 1034 |
| Grain | Weyermann pszeniczny jasny | 0.5 kg (6.8%) | 80 % | 6 |
| Grain | Briess - Carapils Malt | 0.5 kg (6.8%) | 74 % | 3 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|-----------|------------------------|--------|---------|------------|
| Boil | Columbus/Tomahawk/Zeus | 40 g | 60 min | 15.5 % |
| Boil | Columbus/Tomahawk/Zeus | 20 g | 40 min | 15.5 % |
| Boil | Jarrylo | 50 g | 20 min | 15 % |
| Whirlpool | Jarrylo | 40 g | 60 min | 15 % |
| Whirlpool | Mosaic | 100 g | 120 min | 10 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale | Dry | 22 g | Safale |

Extras

| Type | Name | Amount | Use for | Time |
|-------------|-----------------|--------|---------|--------|
| Water Agent | gips piwowarski | 5 g | Mash | 70 min |
| Fining | mech irlandzki | 5 g | Boil | 15 min |