

## Ciemne karmelowe

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **20**
- SRM **30.8**
- Style **Sweet Stout**

### Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **24.3 liter(s)**
- Total mash volume **32.4 liter(s)**

### Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**

### Mash step by step

- Heat up **24.3 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Sparge using **15.5 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

### Fermentables

| Type  | Name                           | Amount         | Yield | EBC  |
|-------|--------------------------------|----------------|-------|------|
| Grain | Strzegom Wiedeński             | 6 kg (74.1%)   | 79 %  | 8    |
| Grain | Strzegom Karmel 150            | 1.5 kg (18.5%) | 75 %  | 150  |
| Grain | Czekoladowy ciemny viking malt | 0.1 kg (1.2%)  | 68 %  | 950  |
| Grain | Strzegom Czekoladowy jasny     | 0.2 kg (2.5%)  | 68 %  | 400  |
| Grain | Jęczmień palony viking         | 0.3 kg (3.7%)  | 55 %  | 1000 |

### Hops

| Use for | Name              | Amount | Time   | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil    | Magnum            | 12 g   | 60 min | 11.5 %     |
| Boil    | Lublin (Lubelski) | 40 g   | 30 min | 2.8 %      |
| Boil    | Lublin (Lubelski) | 30 g   | 10 min | 2.8 %      |

### Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 11.5 g | Safale     |