

```
<!DOCTYPE html>
<html lang="nl">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Blue Magic Whale | Complete Energie & Verlichtingscalculator</title>
  <style>
    * {
      margin: 0;
      padding: 0;
      box-sizing: border-box;
      font-family: 'Segoe UI', 'Roboto', sans-serif;
    }

    :root {
      --primary: #1a365d;
      --secondary: #2b6c8f;
      --accent: #3b82f6;
      --success: #10b981;
      --warning: #f59e0b;
      --danger: #ef4444;
      --dark: #0f172a;
      --light: #f8fafc;
      --gray: #64748b;
    }

    body {
      background: linear-gradient(135deg, #667eea 0%, #764ba2 100%);
```

```
    min-height: 100vh;
    padding: 20px;
}
```

```
.container {
    max-width: 1800px;
    margin: 0 auto;
    background: white;
    border-radius: 30px;
    box-shadow: 0 25px 50px -12px rgba(0, 0, 0, 0.5);
    overflow: hidden;
}
```

```
/* Header */
```

```
.header {
    background: linear-gradient(135deg, var(--primary), #2d3748);
    color: white;
    padding: 30px;
    position: relative;
    overflow: hidden;
}
```

```
.header::before {
    content: "🐙";
    position: absolute;
    right: 30px;
    top: 50%;
    transform: translateY(-50%);
}
```

```
font-size: 8rem;  
opacity: 0.1;  
}
```

```
.logo {  
display: flex;  
align-items: center;  
gap: 20px;  
margin-bottom: 20px;  
}
```

```
.logo-icon {  
width: 80px;  
height: 80px;  
background: rgba(255, 255, 255, 0.2);  
border-radius: 50%;  
display: flex;  
align-items: center;  
justify-content: center;  
font-size: 2.5rem;  
border: 3px solid white;  
}
```

```
.header h1 {  
font-size: 2.8rem;  
font-weight: 800;  
letter-spacing: -0.5px;  
margin-bottom: 10px;
```

```
}
```

```
.header .subtitle {  
  font-size: 1.2rem;  
  opacity: 0.9;  
  max-width: 800px;  
}
```

```
.language-switch {  
  position: absolute;  
  top: 30px;  
  right: 30px;  
  display: flex;  
  gap: 10px;  
  z-index: 10;  
}
```

```
.lang-btn {  
  padding: 10px 20px;  
  background: rgba(255, 255, 255, 0.2);  
  border: 2px solid white;  
  border-radius: 8px;  
  color: white;  
  font-weight: 600;  
  cursor: pointer;  
  transition: all 0.3s;  
}
```

```
.lang-btn.active {  
  background: white;  
  color: var(--primary);  
}
```

```
.lang-btn:hover {  
  background: white;  
  color: var(--primary);  
}
```

```
/* Klantgegevens */
```

```
.client-section {  
  background: linear-gradient(135deg, #f8fafc, #e2e8f0);  
  padding: 25px;  
  border-bottom: 3px solid var(--accent);  
}
```

```
.client-grid {  
  display: grid;  
  grid-template-columns: repeat(auto-fit, minmax(300px, 1fr));  
  gap: 20px;  
}
```

```
.client-group {  
  display: flex;  
  flex-direction: column;  
  gap: 5px;  
}
```

```
.client-group label {  
  font-weight: 600;  
  color: var(--primary);  
  font-size: 0.9rem;  
}
```

```
.client-group input {  
  padding: 12px;  
  border: 2px solid #cbd5e1;  
  border-radius: 8px;  
  font-size: 1rem;  
  transition: all 0.3s;  
}
```

```
.client-group input:focus {  
  border-color: var(--accent);  
  outline: none;  
  box-shadow: 0 0 0 3px rgba(59, 130, 246, 0.1);  
}
```

```
/* Main Grid */
```

```
.main-grid {  
  display: grid;  
  grid-template-columns: 1fr 1fr;  
  gap: 25px;  
  padding: 25px;  
  background: #f1f5f9;
```

```
}
```

```
@media (max-width: 1200px) {
```

```
  .main-grid {
```

```
    grid-template-columns: 1fr;
```

```
  }
```

```
}
```

```
/* Cards */
```

```
.card {
```

```
  background: white;
```

```
  border-radius: 20px;
```

```
  padding: 25px;
```

```
  box-shadow: 0 10px 30px rgba(0, 0, 0, 0.1);
```

```
  border: 1px solid #e2e8f0;
```

```
}
```

```
.card-header {
```

```
  display: flex;
```

```
  align-items: center;
```

```
  gap: 15px;
```

```
  margin-bottom: 25px;
```

```
  padding-bottom: 15px;
```

```
  border-bottom: 3px solid;
```

```
}
```

```
.card-header i {
```

```
  font-size: 2rem;
```

```
}
```

```
.card-header h2 {  
  font-size: 1.6rem;  
  color: var(--primary);  
}
```

```
/* Energieverbruik Calculator */
```

```
.heat-card {  
  border-left: 6px solid var(--accent);  
}
```

```
.heat-card .card-header {  
  border-bottom-color: var(--accent);  
}
```

```
.water-card {  
  border-left: 6px solid var(--danger);  
}
```

```
.water-card .card-header {  
  border-bottom-color: var(--danger);  
}
```

```
.light-card {  
  border-left: 6px solid var(--warning);  
}
```

```
.light-card .card-header {  
  border-bottom-color: var(--warning);  
}
```

```
.results-card {  
  border-left: 6px solid var(--success);  
  grid-column: 1 / -1;  
}
```

```
.results-card .card-header {  
  border-bottom-color: var(--success);  
}
```

```
/* Input Groups */
```

```
.input-grid {  
  display: grid;  
  grid-template-columns: repeat(auto-fit, minmax(250px, 1fr));  
  gap: 20px;  
  margin-bottom: 20px;  
}
```

```
.input-group {  
  display: flex;  
  flex-direction: column;  
  gap: 8px;  
}
```

```
.input-group label {
```

```
font-weight: 600;
color: var(--gray);
display: flex;
align-items: center;
gap: 8px;
}
```

```
.input-group input,
.input-group select {
padding: 12px;
border: 2px solid #e2e8f0;
border-radius: 8px;
font-size: 1rem;
transition: all 0.3s;
}
```

```
.input-group input:focus,
.input-group select:focus {
border-color: var(--accent);
outline: none;
box-shadow: 0 0 3px rgba(59, 130, 246, 0.1);
}
```

```
.input-with-unit {
display: flex;
align-items: center;
border: 2px solid #e2e8f0;
border-radius: 8px;
```

```
    overflow: hidden;
}
```

```
.input-with-unit input {
    flex: 1;
    border: none;
}
```

```
.input-with-unit .unit {
    padding: 12px 15px;
    background: #f1f5f9;
    color: var(--gray);
    font-weight: 600;
    border-left: 2px solid #e2e8f0;
}
```

```
/* Sliders */
```

```
.slider-container {
    padding: 10px 0;
}
```

```
.slider-value {
    display: flex;
    justify-content: space-between;
    margin-top: 5px;
    color: var(--gray);
}
```

```
input[type="range"] {  
  width: 100%;  
  height: 8px;  
  background: #e2e8f0;  
  border-radius: 4px;  
  outline: none;  
  -webkit-appearance: none;  
}
```

```
input[type="range"]::-webkit-slider-thumb {  
  -webkit-appearance: none;  
  width: 20px;  
  height: 20px;  
  background: var(--accent);  
  border-radius: 50%;  
  cursor: pointer;  
}
```

```
/* Hot Water Table */
```

```
.water-table {  
  width: 100%;  
  border-collapse: collapse;  
  margin: 20px 0;  
  font-size: 0.9rem;  
}
```

```
.water-table th {  
  background: linear-gradient(135deg, var(--danger), #dc2626);
```

```
color: white;
padding: 12px;
text-align: left;
}
```

```
.water-table td {
padding: 10px;
border-bottom: 1px solid #e2e8f0;
}
```

```
.water-table input {
width: 70px;
padding: 6px;
border: 1px solid #e2e8f0;
border-radius: 4px;
}
```

```
.water-table tr:nth-child(even) {
background: #f8fafc;
}
```

```
/* Extra aftakpunten */
```

```
.extra-points {
background: #fff3cd;
border: 2px solid #ffc107;
border-radius: 8px;
padding: 15px;
margin: 15px 0;
```

```
}
```

```
/* Lichtnormen tabel */
```

```
.norm-table {
```

```
  width: 100%;
```

```
  border-collapse: collapse;
```

```
  margin: 15px 0;
```

```
  font-size: 0.85rem;
```

```
}
```

```
.norm-table th {
```

```
  background: var(--primary);
```

```
  color: white;
```

```
  padding: 10px;
```

```
}
```

```
.norm-table td {
```

```
  padding: 8px;
```

```
  border: 1px solid #e2e8f0;
```

```
}
```

```
.norm-table tr:nth-child(even) {
```

```
  background: #f8f9fc;
```

```
}
```

```
.norm-e {
```

```
  background: #d4edda !important;
```

```
  color: #155724;
```

```
    font-weight: 600;
}

/* Results Grid */
.results-grid {
    display: grid;
    grid-template-columns: repeat(auto-fit, minmax(200px, 1fr));
    gap: 20px;
    margin: 20px 0;
}

.result-card {
    background: linear-gradient(135deg, #f8fafc, white);
    border-radius: 12px;
    padding: 20px;
    text-align: center;
    border: 1px solid #e2e8f0;
    box-shadow: 0 4px 6px rgba(0, 0, 0, 0.05);
}

.result-card h3 {
    color: var(--gray);
    font-size: 0.9rem;
    margin-bottom: 10px;
}

.result-value {
    font-size: 2.5rem;
```

```
font-weight: 800;
color: var(--primary);
line-height: 1.2;
}
```

```
.result-unit {
  color: var(--gray);
  font-size: 0.8rem;
}
```

```
/* Energieklasse */
```

```
.energy-class {
  background: var(--dark);
  color: white;
  padding: 30px;
  border-radius: 12px;
  text-align: center;
  margin: 20px 0;
}
```

```
.class-badge {
  display: inline-block;
  padding: 20px 40px;
  font-size: 4rem;
  font-weight: 900;
  border-radius: 8px;
  margin: 10px 0;
}
```

```
.class-a { background: linear-gradient(135deg, #27ae60, #2ecc71); }  
.class-b { background: linear-gradient(135deg, #2ecc71, #f1c40f); }  
.class-c { background: linear-gradient(135deg, #f1c40f, #e67e22); }  
.class-d { background: linear-gradient(135deg, #e67e22, #e74c3c); }  
.class-e { background: linear-gradient(135deg, #e74c3c, #c0392b); }  
.class-f { background: linear-gradient(135deg, #c0392b, #8e44ad); }  
.class-g { background: linear-gradient(135deg, #8e44ad, #2c3e50); }
```

```
/* Buttons */
```

```
.button-group {  
  display: flex;  
  gap: 15px;  
  margin: 25px 0;  
  flex-wrap: wrap;  
}
```

```
.btn {  
  padding: 15px 30px;  
  border: none;  
  border-radius: 8px;  
  font-size: 1rem;  
  font-weight: 600;  
  cursor: pointer;  
  transition: all 0.3s;  
  display: flex;  
  align-items: center;  
  gap: 10px;
```

```
flex: 1;
justify-content: center;
min-width: 200px;
}
```

```
.btn-primary {
  background: linear-gradient(135deg, var(--accent), #2563eb);
  color: white;
}
```

```
.btn-success {
  background: linear-gradient(135deg, var(--success), #059669);
  color: white;
}
```

```
.btn-warning {
  background: linear-gradient(135deg, var(--warning), #d97706);
  color: white;
}
```

```
.btn:hover {
  transform: translateY(-2px);
  box-shadow: 0 10px 20px rgba(0, 0, 0, 0.2);
}
```

```
/* Handtekening */
```

```
.signature-section {
  background: #f8f9fc;
}
```

```
padding: 20px;
border-radius: 8px;
margin: 20px 0;
border: 1px dashed var(--gray);
}
```

```
.signature-canvas {
border: 2px solid #e2e8f0;
border-radius: 8px;
background: white;
width: 100%;
height: 150px;
margin: 10px 0;
}
```

```
/* Footer */
```

```
.footer {
background: var(--primary);
color: white;
text-align: center;
padding: 20px;
font-size: 0.9rem;
}
```

```
/* Hidden elements */
```

```
.hidden {
display: none;
}
```

```
[data-lang="en"] {
  display: none;
}

body.lang-en [data-lang="nl"] {
  display: none;
}

body.lang-en [data-lang="en"] {
  display: block;
}
</style>

<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.4.0/css/all.min.css">

<!-- jsPDF voor PDF rapport -->

<script
src="https://cdnjs.cloudflare.com/ajax/libs/jspdf/2.5.1/jspdf.umd.min.js"></script>

<!-- html2canvas voor handtekening -->

<script
src="https://cdnjs.cloudflare.com/ajax/libs/html2canvas/1.4.1/html2canvas.min.js"></
script>
</head>

<body>

<div class="container">

<!-- Header -->

<div class="header">

<div class="language-switch">

<button class="lang-btn active" onclick="switchLanguage('nl')">
```

```
<i class="fas fa-flag"></i> NL
</button>
<button class="lang-btn" onclick="switchLanguage('en')">
  <i class="fas fa-flag-usa"></i> EN
</button>
</div>
```

```
<div class="logo">
  <div class="logo-icon">
    <i class="fas fa-bolt"></i>
  </div>
  <div>
    <h1 data-lang="nl">Blue Magic Whale Professional</h1>
    <h1 data-lang="en" style="display: none;">Blue Magic Whale
Professional</h1>
    <div class="subtitle" data-lang="nl">
      Complete energie- en verlichtingscalculator · NEN-EN 12464-1 · CIE
171:2006
    </div>
    <div class="subtitle" data-lang="en" style="display: none;">
      Complete energy & lighting calculator · NEN-EN 12464-1 · CIE 171:2006
    </div>
  </div>
</div>
</div>
```

```
<!-- Klantgegevens & Offerte -->
```

```
<div class="client-section">
```

```
<div style="display: flex; justify-content: space-between; align-items: center; margin-bottom: 15px;">
```

```
<h3 style="color: var(--primary);" data-lang="nl"><i class="fas fa-file-invoice"></i> Klantgegevens & Offerte</h3>
```

```
<h3 style="color: var(--primary);" data-lang="en" style="display: none;"><i class="fas fa-file-invoice"></i> Client & Quotation</h3>
```

```
</div>
```

```
<div class="client-grid">
```

```
<div class="client-group">
```

```
<label data-lang="nl">Offertenummer</label>
```

```
<label data-lang="en" style="display: none;">Quotation number</label>
```

```
<input type="text" id="offerNumber" value="BMW-2025-001" placeholder="BMW-2025-001">
```

```
</div>
```

```
<div class="client-group">
```

```
<label data-lang="nl">Datum</label>
```

```
<label data-lang="en" style="display: none;">Date</label>
```

```
<input type="date" id="offerDate" value="">
```

```
</div>
```

```
<div class="client-group">
```

```
<label data-lang="nl">Bedrijfsnaam (verkoper)</label>
```

```
<label data-lang="en" style="display: none;">Company name (seller)</label>
```

```
<input type="text" id="sellerCompany" value="Blue Magic Whale BV">
```

```
</div>
```

```
<div class="client-group">
```

```
<label data-lang="nl">Verkoper/plaatser</label>
```

```
<label data-lang="en" style="display: none;">Installer</label>
```

```
<input type="text" id="sellerName" value="Jan Jansen">
```

```
</div>

<div class="client-group">
  <label data-lang="nl">Adres verkoper</label>
  <label data-lang="en" style="display: none;">Seller address</label>
  <input type="text" id="sellerAddress" value="Energelaan 42, 1000 Brussel">
</div>

<div class="client-group">
  <label data-lang="nl">Klantnaam</label>
  <label data-lang="en" style="display: none;">Client name</label>
  <input type="text" id="clientName" value="Piet Pietersen">
</div>

<div class="client-group">
  <label data-lang="nl">Adres klant</label>
  <label data-lang="en" style="display: none;">Client address</label>
  <input type="text" id="clientAddress" value="Verbruikersstraat 10, 2000
Antwerpen">
</div>

</div>

</div>

</div>

<!-- Main Grid -->

<div class="main-grid">
  <!-- Energieverbruik Sectie -->
  <div>
    <!-- Warmteverlies Card -->
    <div class="card heat-card" style="margin-bottom: 25px;">
      <div class="card-header">
        <i class="fas fa-thermometer-half" style="color: var(--accent);"></i>
```

```
<h2 data-lang="nl">Warmteverlies</h2>
```

```
<h2 data-lang="en" style="display: none;">Heat Loss</h2>
```

```
</div>
```

```
<div class="input-grid">
```

```
<div class="input-group">
```

```
<label data-lang="nl"><i class="fas fa-ruler"></i> Oppervlakte</label>
```

```
<label data-lang="en" style="display: none;"><i class="fas fa-ruler"></i>  
Surface area</label>
```

```
<input type="number" id="surfaceArea" value="150" step="0.1">
```

```
<span class="unit">m2</span>
```

```
</div>
```

```
<div class="input-group">
```

```
<label>U-waarde</label>
```

```
<input type="number" id="uValue" value="0.3" step="0.01">
```

```
<span class="unit">W/m2K</span>
```

```
</div>
```

```
<div class="input-group">
```

```
<label data-lang="nl"><i class="fas fa-thermometer"></i>  
Temperatuurverschil</label>
```

```
<label data-lang="en" style="display: none;"><i class="fas fa-  
thermometer"></i> Temperature difference</label>
```

```
<input type="number" id="tempDiff" value="20" step="0.1">
```

```
<span class="unit"> $\Delta T$  (K)</span>
```

```
</div>
```

```
<div class="input-group">
```

```
<label data-lang="nl"><i class="fas fa-cube"></i> Volume</label>
```

```
<label data-lang="en" style="display: none;"><i class="fas fa-cube"></i>  
Volume</label>
```

```
<input type="number" id="volume" value="375" step="0.1">
```

```
<span class="unit">m3</span>
```

```
</div>
```

```
<div class="input-group">
```

```
<label data-lang="nl"><i class="fas fa-fan"></i> Ventilatie</label>
```

```
<label data-lang="en" style="display: none;"><i class="fas fa-fan"></i>  
Ventilation</label>
```

```
<select id="ventilationType">
```

```
<option value="0.2" data-lang="nl">Geen ventilatie (0,2/h)</option>
```

```
<option value="0.2" data-lang="en" style="display: none;">No ventilation  
(0.2/h)</option>
```

```
<option value="0.3" selected data-lang="nl">Natuurlijk (0,3/h)</option>
```

```
<option value="0.3" selected data-lang="en" style="display:  
none;">Natural (0.3/h)</option>
```

```
<option value="0.5" data-lang="nl">Mechanisch (0,5/h)</option>
```

```
<option value="0.5" data-lang="en" style="display: none;">Mechanical  
(0.5/h)</option>
```

```
<option value="0.7" data-lang="nl">Balans (0,7/h)</option>
```

```
<option value="0.7" data-lang="en" style="display: none;">Balanced  
(0.7/h)</option>
```

```
</select>
```

```
</div>
```

```
<div class="input-group">
```

```
<label data-lang="nl"><i class="fas fa-clock"></i> Stookuren/jaar</label>
```

```
    <label data-lang="en" style="display: none;"><i class="fas fa-clock"></i>  
Heating hours/year</label>
```

```
    <input type="number" id="heatingHours" value="2200">
```

```
    <span class="unit">h</span>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<!-- Sanitair Warm Water Card -->
```

```
<div class="card water-card">
```

```
  <div class="card-header">
```

```
    <i class="fas fa-shower" style="color: var(--danger);"></i>
```

```
    <h2 data-lang="nl">Sanitair Warm Water</h2>
```

```
    <h2 data-lang="en" style="display: none;">Domestic Hot Water</h2>
```

```
  </div>
```

```
<div class="input-grid" style="margin-bottom: 20px;">
```

```
  <div class="input-group">
```

```
    <label data-lang="nl"><i class="fas fa-tint"></i> Koud water temp</label>
```

```
    <label data-lang="en" style="display: none;"><i class="fas fa-tint"></i>  
Cold water temp</label>
```

```
    <input type="number" id="coldWaterTemp" value="10" class="orange-  
field">
```

```
    <span class="unit">°C</span>
```

```
  </div>
```

```
<div class="input-group">
```

```
  <label><i class="fas fa-fire"></i> Boiler temp</label>
```

```
  <input type="number" id="boilerTemp" value="55" class="orange-field">
```

```
<span class="unit">°C</span>
```

```
</div>
```

```
<div class="input-group">
```

```
<label data-lang="nl"><i class="fas fa-radiation"></i> Boiler verlies</label>
```

```
<label data-lang="en" style="display: none;"><i class="fas fa-  
radiation"></i> Boiler loss</label>
```

```
<input type="number" id="boilerLoss" value="75">
```

```
<span class="unit">W</span>
```

```
</div>
```

```
</div>
```

```
<table class="water-table">
```

```
<thead>
```

```
<tr>
```

```
<th data-lang="nl">Verbruiker</th>
```

```
<th data-lang="en" style="display: none;">Consumer</th>
```

```
<th data-lang="nl">Periode (dgn)</th>
```

```
<th data-lang="en" style="display: none;">Period (days)</th>
```

```
<th>#</th>
```

```
<th data-lang="nl">Tijd (min)</th>
```

```
<th data-lang="en" style="display: none;">Time (min)</th>
```

```
<th data-lang="nl">Debiet/Volume</th>
```

```
<th data-lang="en" style="display: none;">Flow/Volume</th>
```

```
<th>Temp (°C)</th>
```

```
</tr>
```

```
</thead>
```

```
<tbody id="hotWaterTableBody">
```

```

        <!-- Wordt gevuld door JavaScript -->
    </tbody>
</table>

<!-- Extra aftakpunten -->
<div class="extra-points">
    <h4 style="display: flex; align-items: center; gap: 10px; margin-bottom:
15px;">
        <i class="fas fa-code-branch" style="color: var(--warning);"></i>
        <span data-lang="nl">Extra aftakpunten</span>
        <span data-lang="en" style="display: none;">Extra tapping points</span>
    </h4>

    <div class="input-grid">
        <div class="input-group">
            <label data-lang="nl">Aantal extra punten</label>
            <label data-lang="en" style="display: none;">Number of extra
points</label>
            <input type="number" id="extraPoints" value="0" min="0" max="20">
        </div>
        <div class="input-group">
            <label data-lang="nl">Extra verbruik per punt</label>
            <label data-lang="en" style="display: none;">Extra consumption per
point</label>
            <input type="number" id="extraConsumption" value="2" step="0.1">
            <span class="unit"> l/dag</span>
        </div>
    </div>
</div>
</div>

```

```
</div>
```

```
</div>
```

```
<!-- Verlichting Sectie -->
```

```
<div>
```

```
<div class="card light-card">
```

```
<div class="card-header">
```

```
<i class="fas fa-lightbulb" style="color: var(--warning);"></i>
```

```
<h2 data-lang="nl">Verlichting (NEN-EN 12464-1)</h2>
```

```
<h2 data-lang="en" style="display: none;">Lighting (NEN-EN 12464-1)</h2>
```

```
</div>
```

```
<!-- CIE 171:2006 Parameters -->
```

```
<div style="background: #f8fafc; padding: 15px; border-radius: 8px; margin-bottom: 20px;">
```

```
<h3 style="margin-bottom: 15px; color: var(--primary);">
```

```
<i class="fas fa-file-contract"></i> CIE 171:2006
```

```
</h3>
```

```
<div class="input-grid">
```

```
<div class="input-group">
```

```
<label>Utilisation Factor (UF)</label>
```

```
<div class="input-with-unit">
```

```
<input type="range" id="utilisationFactor" min="0.1" max="1.0" value="0.65" step="0.01">
```

```
<span class="unit" id="utilisationFactorValue">0.65</span>
```

```
</div>
```

```
</div>
```

```
<div class="input-group">
  <label>Light Output Ratio (LOR)</label>
  <div class="input-with-unit">
    <input type="range" id="lightOutputRatio" min="0.1" max="1.0"
value="0.85" step="0.01">
    <span class="unit" id="lightOutputRatioValue">0.85</span>
  </div>
</div>
```

```
<div class="input-group">
  <label>Maintenance Factor (MF)</label>
  <div class="input-with-unit">
    <input type="range" id="maintenanceFactor" min="0.1" max="1.0"
value="0.80" step="0.01">
    <span class="unit" id="maintenanceFactorValue">0.80</span>
  </div>
</div>
</div>
```

```
<!-- Installatie parameters -->
<div class="input-grid">
  <div class="input-group">
    <label data-lang="nl">Aantal armaturen</label>
    <label data-lang="en" style="display: none;">Number of
luminaires</label>
    <input type="range" id="numLuminaires" min="1" max="200" value="25">
    <span class="unit" id="numLuminairesValue">25</span>
  </div>
```

```
<div class="input-group">
  <label data-lang="nl">Vermogen per armatuur</label>
  <label data-lang="en" style="display: none;">Power per luminaire</label>
  <input type="range" id="powerPerLum" min="1" max="200" value="36">
  <span class="unit" id="powerPerLumValue">36 W</span>
</div>
```

```
<div class="input-group">
  <label data-lang="nl">Lichtstroom per armatuur</label>
  <label data-lang="en" style="display: none;">Luminous flux per
luminaire</label>
  <input type="range" id="fluxPerLum" min="500" max="10000"
value="3600" step="100">
  <span class="unit" id="fluxPerLumValue">3600 lm</span>
</div>
```

```
<div class="input-group">
  <label data-lang="nl">Branduren per dag</label>
  <label data-lang="en" style="display: none;">Operating hours per
day</label>
  <input type="range" id="lightHoursPerDay" min="1" max="24" value="10">
  <span class="unit" id="lightHoursPerDayValue">10 h</span>
</div>
```

```
<div class="input-group">
  <label data-lang="nl">Dagen per week</label>
  <label data-lang="en" style="display: none;">Days per week</label>
  <input type="range" id="lightDaysPerWeek" min="1" max="7" value="5">
```

```
<span class="unit" id="lightDaysPerWeekValue">5 d</span>
</div>
```

```
<div class="input-group">
  <label data-lang="nl">Oppervlakte (ruimte)</label>
  <label data-lang="en" style="display: none;">Room area</label>
  <input type="number" id="roomArea" value="100" step="10">
  <span class="unit">m2</span>
</div>
```

```
<div class="input-group">
  <label data-lang="nl">Ruimtetype</label>
  <label data-lang="en" style="display: none;">Space type</label>
  <select id="spaceType">
    <option value="office" data-lang="nl">Kantoor</option>
    <option value="office" data-lang="en" style="display:
none;">Office</option>
    <option value="school" data-lang="nl">Onderwijs</option>
    <option value="school" data-lang="en" style="display:
none;">Education</option>
    <option value="retail" data-lang="nl">Winkel</option>
    <option value="retail" data-lang="en" style="display:
none;">Retail</option>
    <option value="industrial" data-lang="nl">Industrie</option>
    <option value="industrial" data-lang="en" style="display:
none;">Industrial</option>
    <option value="residential" data-lang="nl">Woning</option>
    <option value="residential" data-lang="en" style="display:
none;">Residential</option>
    <option value="healthcare" data-lang="nl">Zorg</option>
```

```
<option value="healthcare" data-lang="en" style="display: none;">Healthcare</option>
```

```
</select>
```

```
</div>
```

```
</div>
```

```
<!-- NEN-EN 12464-1 Normtabel -->
```

```
<div style="margin-top: 25px;">
```

```
<h3 style="margin-bottom: 15px; color: var(--primary);">
```

```
<i class="fas fa-clipboard-check"></i> NEN-EN 12464-1 Normen
```

```
</h3>
```

```
<table class="norm-table">
```

```
<thead>
```

```
<tr>
```

```
<th data-lang="nl">Ruimtetype</th>
```

```
<th data-lang="en" style="display: none;">Space type</th>
```

```
<th>E<sub>m</sub> (lux)</th>
```

```
<th>UGR<sub>L</sub></th>
```

```
<th>R<sub>a</sub></th>
```

```
</tr>
```

```
</thead>
```

```
<tbody>
```

```
<tr><td data-lang="nl">Kantoor</td><td data-lang="en" style="display: none;">Office</td><td>500</td><td>19</td><td>80</td></tr>
```

```
<tr><td data-lang="nl">Onderwijs (klaslokaal)</td><td data-lang="en" style="display: none;">Classroom</td><td>500</td><td>19</td><td>80</td></tr>
```

```
<tr><td data-lang="nl">Winkel (algemeen)</td><td data-lang="en" style="display: none;">Retail (general)</td><td>300</td><td>22</td><td>80</td></tr>
```

```
<tr><td data-lang="nl">Industrie (montage)</td><td data-lang="en" style="display: none;">Industrial (assembly)</td><td>200-500</td><td>25</td><td>60</td></tr>
```

```
<tr><td data-lang="nl">Woning (woonkamer)</td><td data-lang="en" style="display: none;">Living room</td><td>300</td><td>22</td><td>80</td></tr>
```

```
<tr><td data-lang="nl">Zorg (patiëntenkamer)</td><td data-lang="en" style="display: none;">Patient room</td><td>500</td><td>19</td><td>90</td></tr>
```

```
</tbody>
```

```
</table>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<!-- Resultaten Card -->
```

```
<div class="card results-card">
```

```
<div class="card-header">
```

```
<i class="fas fa-chart-pie" style="color: var(--success);"></i>
```

```
<h2 data-lang="nl">Berekeningsresultaten</h2>
```

```
<h2 data-lang="en" style="display: none;">Calculation Results</h2>
```

```
</div>
```

```
<div class="results-grid">
```

```
<div class="result-card">
```

```
<h3 data-lang="nl">Warmteverlies/jaar</h3>
```

```
<h3 data-lang="en" style="display: none;">Heat loss/year</h3>
```

```
<div class="result-value" id="heatLossResult">0</div>
```

```
<div class="result-unit">kWh</div>
```

```
</div>
```

```
<div class="result-card">
  <h3 data-lang="nl">SWW verbruik/jaar</h3>
  <h3 data-lang="en" style="display: none;">DHW consumption/year</h3>
  <div class="result-value" id="waterResult">0</div>
  <div class="result-unit">kWh</div>
</div>
```

```
<div class="result-card">
  <h3 data-lang="nl">Verlichting/jaar</h3>
  <h3 data-lang="en" style="display: none;">Lighting/year</h3>
  <div class="result-value" id="lightingResult">0</div>
  <div class="result-unit">kWh</div>
</div>
```

```
<div class="result-card">
  <h3 data-lang="nl">Totaal/jaar</h3>
  <h3 data-lang="en" style="display: none;">Total/year</h3>
  <div class="result-value" id="totalResult">0</div>
  <div class="result-unit">kWh</div>
</div>
```

```
<div class="result-card">
  <h3 data-lang="nl">Kosten/jaar</h3>
  <h3 data-lang="en" style="display: none;">Cost/year</h3>
  <div class="result-value" id="costResult">0</div>
  <div class="result-unit">€</div>
</div>
```

```
<div class="result-card">
  <h3 data-lang="nl">CO2 uitstoot</h3>
  <h3 data-lang="en" style="display: none;">CO2 emission</h3>
  <div class="result-value" id="co2Result">0</div>
  <div class="result-unit">kg</div>
</div>
</div>
```

```
<!-- Energieklasse voor verlichting -->
```

```
<div class="energy-class">
  <div data-lang="nl">Energieklasse (NEN-EN 12464-1)</div>
  <div data-lang="en" style="display: none;">Energy class (NEN-EN 12464-
1)</div>
  <div class="class-badge" id="energyClass">-</div>
  <div id="classDescription" style="opacity: 0.9;"></div>
</div>
```

```
<!-- Verlichtingssterkte & Compliance -->
```

```
<div style="display: grid; grid-template-columns: 1fr 1fr; gap: 15px; margin: 20px
0;">
  <div style="background: #f8fafc; padding: 15px; border-radius: 8px;">
    <div style="color: var(--gray); font-size: 0.9rem;" data-lang="nl">Berekende
verlichtingssterkte</div>
    <div style="color: var(--gray); font-size: 0.9rem;" data-lang="en"
style="display: none;">Calculated illuminance</div>
    <div style="font-size: 2rem; font-weight: 700; color: var(--primary);"
id="calculatedIlluminance">0</div>
    <div>lux</div>
  </div>
```

```
<div style="background: #f8f9fc; padding: 15px; border-radius: 8px;">
  <div style="color: var(--gray); font-size: 0.9rem;" data-lang="nl">NEN-EN
12464-1 status</div>
  <div style="color: var(--gray); font-size: 0.9rem;" data-lang="en"
style="display: none;">NEN-EN 12464-1 status</div>
  <div style="font-size: 1.2rem; font-weight: 700;" id="complianceStatus">-
</div>
</div>
</div>
<!-- Handtekening Sectie -->
<div class="signature-section">
  <div style="display: flex; justify-content: space-between; align-items: center;
margin-bottom: 15px;">
    <h4 data-lang="nl"><i class="fas fa-pen"></i> Handtekening</h4>
    <h4 data-lang="en" style="display: none;"><i class="fas fa-pen"></i>
Signature</h4>
  <button class="btn btn-warning" style="padding: 8px 15px; min-width: auto;"
onclick="clearSignature()">
    <i class="fas fa-undo"></i> <span data-lang="nl">Wissen</span><span
data-lang="en" style="display: none;">Clear</span>
  </button>
</div>
<div>
  <canvas id="signatureCanvas" class="signature-canvas" width="600"
height="150"></canvas>
  <div style="display: flex; justify-content: space-between; margin-top: 10px;">
    <span style="color: var(--gray);" data-lang="nl">Plaats hier uw
handtekening</span>
```

```
    <span style="color: var(--gray);" data-lang="en" style="display: none;">Sign  
here</span>
```

```
    <span id="signatureDate" style="font-weight: 600;"></span>
```

```
</div>
```

```
</div>
```

```
<!-- Buttons -->
```

```
<div class="button-group">
```

```
    <button class="btn btn-primary" onclick="calculateAll()">
```

```
        <i class="fas fa-calculator"></i> <span data-lang="nl">Bereken  
Alles</span><span data-lang="en" style="display: none;">Calculate All</span>
```

```
</button>
```

```
    <button class="btn btn-success" onclick="generatePDF()">
```

```
        <i class="fas fa-file-pdf"></i> <span data-lang="nl">PDF  
Rapport</span><span data-lang="en" style="display: none;">PDF Report</span>
```

```
</button>
```

```
    <button class="btn" onclick="resetAll()">
```

```
        <i class="fas fa-redo"></i> <span data-lang="nl">Reset</span><span data-  
lang="en" style="display: none;">Reset</span>
```

```
</button>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<!-- Footer -->
```

```
<div class="footer">
```

```
    <i class="fas fa-whale"></i> Blue Magic Whale Professional · NEN-EN 12464-1 ·  
CIE 171:2006 · Alle rechten voorbehouden
```

```
</div>
```

```
</div>
```

```
<script>

// Taalinstellingen

let currentLang = 'nl';

function switchLanguage(lang) {

    currentLang = lang;

    document.body.className = lang === 'en' ? 'lang-en' : '';

    // Update buttons

    document.querySelectorAll('.lang-btn').forEach(btn => {

        btn.classList.remove('active');

    });

    document.getElementById(`btn${lang.toUpperCase()}`)?.classList.add('active');

    // Update alles

    initializeHotWaterTable();

    calculateAll();

}

// Sanitair warm water data

const hotWaterData = [

    { name: "Douche 1", period: 7, times: 5, time: 8, flow: 10, temp: 42 },

    { name: "Douche 2", period: 7, times: 5, time: 5, flow: 10, temp: 40 },

    { name: "Bad", period: 7, times: 1, time: null, volume: 200, temp: 45 },

    { name: "Keuken", period: 1, times: 1, time: 3, flow: 14, temp: 50 },

    { name: "Lavabo", period: 1, times: 1, time: 1, flow: 12, temp: 50 }

];
```

```
// NEN-EN 12464-1 normen
const lightingNorms = {
  'office': 500,
  'school': 500,
  'retail': 300,
  'industrial': 300,
  'residential': 300,
  'healthcare': 500
};

// Initialisatie
document.addEventListener('DOMContentLoaded', function() {
  // Datum vandaag
  const today = new Date().toISOString().split('T')[0];
  document.getElementById('offerDate').value = today;
  document.getElementById('signatureDate').textContent = today;

  setupSliders();
  initializeHotWaterTable();
  setupSignatureCanvas();
  calculateAll();
});

// Sliders instellen
function setupSliders() {
  const sliders = [
    { id: 'utilisationFactor', display: 'utilisationFactorValue', format: v => v.toFixed(2) },
```

```

    { id: 'lightOutputRatio', display: 'lightOutputRatioValue', format: v => v.toFixed(2) },
    { id: 'maintenanceFactor', display: 'maintenanceFactorValue', format: v =>
v.toFixed(2) },
    { id: 'numLuminaires', display: 'numLuminairesValue', format: v => v },
    { id: 'powerPerLum', display: 'powerPerLumValue', format: v => v + ' W' },
    { id: 'fluxPerLum', display: 'fluxPerLumValue', format: v => v + ' lm' },
    { id: 'lightHoursPerDay', display: 'lightHoursPerDayValue', format: v => v + ' h' },
    { id: 'lightDaysPerWeek', display: 'lightDaysPerWeekValue', format: v => v + ' d' }
];

```

```

sliders.forEach(slider => {
    const element = document.getElementById(slider.id);
    const display = document.getElementById(slider.display);

    element.addEventListener('input', function() {
        display.textContent = slider.format(parseFloat(this.value));
    });
});
}

```

// Hot water tabel initialiseren

```

function initializeHotWaterTable() {
    const tbody = document.getElementById('hotWaterTableBody');
    tbody.innerHTML = "";

    hotWaterData.forEach((item, index) => {
        const row = tbody.insertRow();

```

```
// Naam
const nameCell = row.insertCell();
nameCell.textContent = item.name;

// Periode
const periodCell = row.insertCell();
const periodInput = document.createElement('input');
periodInput.type = 'number';
periodInput.value = item.period;
periodInput.dataset.index = index;
periodInput.dataset.field = 'period';
periodInput.addEventListener('input', updateHotWaterData);
periodCell.appendChild(periodInput);

// Times
const timesCell = row.insertCell();
const timesInput = document.createElement('input');
timesInput.type = 'number';
timesInput.value = item.times;
timesInput.dataset.index = index;
timesInput.dataset.field = 'times';
timesInput.addEventListener('input', updateHotWaterData);
timesCell.appendChild(timesInput);

// Tijd
const timeCell = row.insertCell();
if (item.time !== null) {
    const timeInput = document.createElement('input');
```

```
timeInput.type = 'number';
timeInput.value = item.time;
timeInput.dataset.index = index;
timeInput.dataset.field = 'time';
timeInput.addEventListener('input', updateHotWaterData);
timeCell.appendChild(timeInput);
} else {
    timeCell.textContent = '-';
}

// Debiet/Volume
const flowCell = row.insertCell();
if (item.flow) {
    const flowInput = document.createElement('input');
    flowInput.type = 'number';
    flowInput.value = item.flow;
    flowInput.dataset.index = index;
    flowInput.dataset.field = 'flow';
    flowInput.addEventListener('input', updateHotWaterData);
    flowCell.appendChild(flowInput);
} else {
    const volumeInput = document.createElement('input');
    volumeInput.type = 'number';
    volumeInput.value = item.volume;
    volumeInput.dataset.index = index;
    volumeInput.dataset.field = 'volume';
    volumeInput.addEventListener('input', updateHotWaterData);
    flowCell.appendChild(volumeInput);
}
```

```

    }

    // Temperatuur
    const tempCell = row.insertCell();
    const tempInput = document.createElement('input');
    tempInput.type = 'number';
    tempInput.value = item.temp;
    tempInput.dataset.index = index;
    tempInput.dataset.field = 'temp';
    tempInput.addEventListener('input', updateHotWaterData);
    tempCell.appendChild(tempInput);
  });
}

// Hot water data bijwerken
function updateHotWaterData(e) {
  const index = parseInt(e.target.dataset.index);
  const field = e.target.dataset.field;
  const value = parseFloat(e.target.value);

  if (field === 'time' && value === "") {
    hotWaterData[index].time = null;
  } else {
    hotWaterData[index][field] = value;
  }

  calculateAll();
}

```

```
// Signature canvas
let isDrawing = false;
let canvas, ctx;

function setupSignatureCanvas() {
    canvas = document.getElementById('signatureCanvas');
    ctx = canvas.getContext('2d');

    ctx.lineWidth = 2;
    ctx.lineCap = 'round';
    ctx.strokeStyle = '#1a365d';

    canvas.addEventListener('mousedown', startDrawing);
    canvas.addEventListener('mousemove', draw);
    canvas.addEventListener('mouseup', stopDrawing);
    canvas.addEventListener('mouseleave', stopDrawing);

    // Touch events voor mobiel
    canvas.addEventListener('touchstart', startDrawing);
    canvas.addEventListener('touchmove', draw);
    canvas.addEventListener('touchend', stopDrawing);
}

function startDrawing(e) {
    isDrawing = true;
    e.preventDefault();
    const pos = getMousePos(e);
```

```
    ctx.beginPath();  
    ctx.moveTo(pos.x, pos.y);  
}
```

```
function draw(e) {  
    if (!isDrawing) return;  
    e.preventDefault();  
    const pos = getMousePos(e);  
    ctx.lineTo(pos.x, pos.y);  
    ctx.stroke();  
}
```

```
function stopDrawing() {  
    isDrawing = false;  
}
```

```
function getMousePos(e) {  
    const rect = canvas.getBoundingClientRect();  
    const scaleX = canvas.width / rect.width;  
    const scaleY = canvas.height / rect.height;  
  
    let x, y;  
    if (e.touches) {  
        x = (e.touches[0].clientX - rect.left) * scaleX;  
        y = (e.touches[0].clientY - rect.top) * scaleY;  
    } else {  
        x = (e.clientX - rect.left) * scaleX;  
        y = (e.clientY - rect.top) * scaleY;  
    }  
}
```

```

}

return { x, y };
}

function clearSignature() {
  ctx.clearRect(0, 0, canvas.width, canvas.height);
}

// Alle berekeningen
function calculateAll() {
  calculateHeatLoss();
  calculateHotWater();
  calculateLighting();
}

// Warmteverlies berekenen
function calculateHeatLoss() {
  const A = parseFloat(document.getElementById('surfaceArea').value);
  const U = parseFloat(document.getElementById('uValue').value);
  const dT = parseFloat(document.getElementById('tempDiff').value);
  const V = parseFloat(document.getElementById('volume').value);
  const n = parseFloat(document.getElementById('ventilationType').value);
  const hours = parseFloat(document.getElementById('heatingHours').value);

  const transmissionLoss = A * U * dT;
  const ventilationLoss = V * n * 0.34 * dT;
  const totalWatts = transmissionLoss + ventilationLoss;
}

```

```

const yearlyKWh = (totalWatts * hours) / 1000;

document.getElementById('heatLossResult').textContent =
Math.round(yearlyKWh).toLocaleString('nl-NL');
return yearlyKWh;
}

// Sanitair warm water berekenen
function calculateHotWater() {
const coldTemp = parseFloat(document.getElementById('coldWaterTemp').value);
const boilerTemp = parseFloat(document.getElementById('boilerTemp').value);
const boilerLoss = parseFloat(document.getElementById('boilerLoss').value);
const extraPoints = parseFloat(document.getElementById('extraPoints').value);
const extraConsumption =
parseFloat(document.getElementById('extraConsumption').value);

let totalDailyLiters = 0;

// Basis verbruikers
hotWaterData.forEach(item => {
let dailyWater = 0;

if (item.time !== null && item.time > 0) {
if (item.flow) {
// Flow based

dailyWater = item.flow * item.time * (item.temp - coldTemp) / (boilerTemp -
coldTemp) * item.times / item.period;
} else {
// Volume based

```

```
        dailyWater = item.volume * (item.temp - coldTemp) / (boilerTemp - coldTemp)
* item.times / item.period;
    }
    } else if (item.volume) {
        dailyWater = item.volume * (item.temp - coldTemp) / (boilerTemp - coldTemp) *
item.times / item.period;
    }

    totalDailyLiters += dailyWater;
});

// Extra aftakpunten
totalDailyLiters += extraPoints * extraConsumption;

// Energieberekening
const dailyEnergy = totalDailyLiters * (boilerTemp - coldTemp) / 860;
const yearlyEnergy = dailyEnergy * 365;

// Boiler verlies
const dailyBoilerLoss = (boilerLoss * 24) / 1000;
const yearlyBoilerLoss = dailyBoilerLoss * 365;

const totalYearly = yearlyEnergy + yearlyBoilerLoss;

    document.getElementById('waterResult').textContent =
Math.round(totalYearly).toLocaleString('nl-NL');
    return totalYearly;
}
```

```

// Verlichting berekenen

function calculateLighting() {
  const N = parseInt(document.getElementById('numLuminaires').value);
  const P = parseInt(document.getElementById('powerPerLum').value);
  const  $\Phi$  = parseInt(document.getElementById('fluxPerLum').value);
  const UF = parseFloat(document.getElementById('utilisationFactor').value);
  const LOR = parseFloat(document.getElementById('lightOutputRatio').value);
  const MF = parseFloat(document.getElementById('maintenanceFactor').value);
  const A = parseFloat(document.getElementById('roomArea').value);

  const hoursPerDay =
parseInt(document.getElementById('lightHoursPerDay').value);

  const daysPerWeek =
parseInt(document.getElementById('lightDaysPerWeek').value);

  const spaceType = document.getElementById('spaceType').value;

  // CIE 171:2006 verlichtingssterkte

  const totalFlux = N *  $\Phi$ ;

  const illuminance = (totalFlux * UF * MF * LOR) / A;

  // Energie-efficiëntie (lm/W)

  const efficiency =  $\Phi$  / P;

  // Energieklasse bepalen

  let energyClass = 'G';
  let classDesc = "";

  if (efficiency >= 140) { energyClass = 'A'; classDesc = 'Zeer efficiënt (>140 lm/W); }
  else if (efficiency >= 120) { energyClass = 'B'; classDesc = 'Efficiënt (120-140
lm/W); }

```

```
    else if (efficiency >= 100) { energyClass = 'C'; classDesc = 'Bovengemiddeld (100-120 lm/W); }
```

```
    else if (efficiency >= 85) { energyClass = 'D'; classDesc = 'Gemiddeld (85-100 lm/W); }
```

```
    else if (efficiency >= 70) { energyClass = 'E'; classDesc = 'Matig (70-85 lm/W); }
```

```
    else if (efficiency >= 55) { energyClass = 'F'; classDesc = 'Laag (55-70 lm/W); }
```

```
    else { energyClass = 'G'; classDesc = 'Zeer laag (<55 lm/W); }
```

```
// Update class badge
```

```
const classElement = document.getElementById('energyClass');
```

```
classElement.textContent = energyClass;
```

```
classElement.className = `class-badge class-${energyClass.toLowerCase()}`;
```

```
document.getElementById('classDescription').textContent = `${classDesc} (${efficiency.toFixed(1)} lm/W)`;
```

```
// Jaarlijks energieverbruik
```

```
const totalPower = (N * P) / 1000; // kW
```

```
const yearlyHours = hoursPerDay * daysPerWeek * 48; // 48 weken
```

```
const yearlyConsumption = totalPower * yearlyHours;
```

```
document.getElementById('lightingResult').textContent = Math.round(yearlyConsumption).toLocaleString('nl-NL');
```

```
document.getElementById('calculatedIlluminance').textContent = Math.round(illuminance);
```

```
// NEN-EN 12464-1 compliance
```

```
const norm = lightingNorms[spaceType] || 300;
```

```
const statusEl = document.getElementById('complianceStatus');
```

```
if (illuminance >= norm) {
```

```

        statusEl.innerHTML = '<span style="color: #10b981;">✓ Voldoet aan NEN-EN
12464-1</span>';

        statusEl.style.color = '#10b981';

    } else {

        statusEl.innerHTML = `<span style="color: #ef4444;">X Voldoet niet (minimaal
${norm} lux vereist)</span>`;

        statusEl.style.color = '#ef4444';

    }

    return yearlyConsumption;
}

// Totalen berekenen

function calculateTotals() {

    const heatLoss = calculateHeatLoss();

    const water = calculateHotWater();

    const lighting = calculateLighting();

    const total = heatLoss + water + lighting;

    const cost = total * 0.35; // €0.35/kWh

    const co2 = total * 0.5; // 0.5 kg CO2/kWh

    document.getElementById('totalResult').textContent =
Math.round(total).toLocaleString('nl-NL');

    document.getElementById('costResult').textContent = '€ ' +
Math.round(cost).toLocaleString('nl-NL');

    document.getElementById('co2Result').textContent =
Math.round(co2).toLocaleString('nl-NL');

}

```

```
// Reset alles

function resetAll() {

    // Reset invoervelden naar standaardwaarden

    document.getElementById('surfaceArea').value = 150;
    document.getElementById('uValue').value = 0.3;
    document.getElementById('tempDiff').value = 20;
    document.getElementById('volume').value = 375;
    document.getElementById('ventilationType').value = 0.3;
    document.getElementById('heatingHours').value = 2200;

    document.getElementById('coldWaterTemp').value = 10;
    document.getElementById('boilerTemp').value = 55;
    document.getElementById('boilerLoss').value = 75;
    document.getElementById('extraPoints').value = 0;
    document.getElementById('extraConsumption').value = 2;

    document.getElementById('utilisationFactor').value = 0.65;
    document.getElementById('lightOutputRatio').value = 0.85;
    document.getElementById('maintenanceFactor').value = 0.80;
    document.getElementById('numLuminaires').value = 25;
    document.getElementById('powerPerLum').value = 36;
    document.getElementById('fluxPerLum').value = 3600;
    document.getElementById('lightHoursPerDay').value = 10;
    document.getElementById('lightDaysPerWeek').value = 5;
    document.getElementById('roomArea').value = 100;
    document.getElementById('spaceType').value = 'office';
```

```
// Reset sliders
setupSliders();

// Reset hot water data naar origineel
const originalData = [
  { name: "Douche 1", period: 7, times: 5, time: 8, flow: 10, temp: 42 },
  { name: "Douche 2", period: 7, times: 5, time: 5, flow: 10, temp: 40 },
  { name: "Bad", period: 7, times: 1, time: null, volume: 200, temp: 45 },
  { name: "Keuken", period: 1, times: 1, time: 3, flow: 14, temp: 50 },
  { name: "Lavabo", period: 1, times: 1, time: 1, flow: 12, temp: 50 }
];

hotWaterData.length = 0;
originalData.forEach(item => hotWaterData.push(item));

initializeHotWaterTable();
clearSignature();
calculateAll();
}

// PDF Rapport genereren
async function generatePDF() {
  const { jsPDF } = window.jspdf;
  const doc = new jsPDF({
    orientation: 'portrait',
    unit: 'mm',
    format: 'a4'
  });
};
```

```
// Titel
doc.setFontSize(22);
doc.setTextColor(26, 54, 93);
doc.text('Blue Magic Whale Professional', 105, 20, { align: 'center' });

doc.setFontSize(16);
doc.setTextColor(59, 130, 246);
doc.text('Energie- en Verlichtingsrapport', 105, 30, { align: 'center' });

// Offerte gegevens
doc.setFontSize(12);
doc.setTextColor(0, 0, 0);
doc.text(` Offertenummer: ${document.getElementById('offerNumber').value}`,
20, 45);
doc.text(` Datum: ${document.getElementById('offerDate').value}`, 20, 52);

doc.text('Verkoper:', 20, 65);
doc.text(` ${document.getElementById('sellerCompany').value}`, 40, 65);
doc.text(` ${document.getElementById('sellerName').value}`, 40, 72);
doc.text(` ${document.getElementById('sellerAddress').value}`, 40, 79);

doc.text('Klant:', 120, 65);
doc.text(` ${document.getElementById('clientName').value}`, 140, 65);
doc.text(` ${document.getElementById('clientAddress').value}`, 140, 72);

// Resultaten tabel
let yPos = 95;
```

```
doc.setFillColor(26, 54, 93);  
doc.rect(20, yPos, 170, 10, 'F');  
doc.setTextColor(255, 255, 255);  
doc.setFontSize(10);  
doc.text('Berekening', 25, yPos + 7);  
doc.text('Waarde', 150, yPos + 7);
```

```
yPos += 15;  
doc.setTextColor(0, 0, 0);
```

```
const results = [  
  ['Warmteverlies (kWh/jaar)',  
document.getElementById('heatLossResult').textContent],  
  ['SWW verbruik (kWh/jaar)',  
document.getElementById('waterResult').textContent],  
  ['Verlichting (kWh/jaar)',  
document.getElementById('lightingResult').textContent],  
  ['Totaal (kWh/jaar)', document.getElementById('totalResult').textContent],  
  ['Kosten (€/jaar)', document.getElementById('costResult').textContent],  
  ['CO2 uitstoot (kg/jaar)', document.getElementById('co2Result').textContent]  
];
```

```
results.forEach(([label, value]) => {  
  doc.text(label, 25, yPos);  
  doc.text(value.toString(), 150, yPos);  
  yPos += 8;  
});
```

```
// Verlichtingsklasse
```

```

yPos += 10;

doc.setFillStyle(26, 54, 93);

doc.rect(20, yPos, 170, 10, 'F');

doc.setTextColor(255, 255, 255);

doc.text('Verlichtingsanalyse (NEN-EN 12464-1)', 25, yPos + 7);

yPos += 15;

doc.setTextColor(0, 0, 0);

doc.text(`Energieklasse:
${document.getElementById('energyClass').textContent}`, 25, yPos);

doc.text(`Efficiëntie:
${document.getElementById('classDescription').textContent.split('(')[1]?.replace(')', '') ||
''}`, 25, yPos + 7);

doc.text(`Verlichtingssterkte:
${document.getElementById('calculatedIlluminance').textContent} lux`, 25, yPos + 14);

doc.text(`NEN-EN 12464-1:
${document.getElementById('complianceStatus').textContent.replace(/<>/g,
'').substring(0, 50)}`, 25, yPos + 21);

// Handtekening

yPos += 35;

doc.text('Handtekening:', 20, yPos);

// Canvas to image

const canvas = document.getElementById('signatureCanvas');

const signatureImage = canvas.toDataURL('image/png');

doc.drawImage(signatureImage, 'PNG', 50, yPos - 10, 60, 20);

doc.text(`Datum: ${document.getElementById('signatureDate').textContent}`,
140, yPos + 5);

```

```
// Voettekst

doc.setFontSize(8);

doc.setTextColor(128, 128, 128);

doc.text('Blue Magic Whale Professional · Dit rapport is automatisch gegenereerd',
105, 280, { align: 'center' });

// Download PDF

doc.save(`BMW_Rapport_${document.getElementById('offerNumber').value}.pdf`);
}

// Overschrijf calculateAll om totalen te berekenen
const originalCalculateAll = calculateAll;
calculateAll = function() {
    originalCalculateAll();
    calculateTotals();
};
</script>
</body>
</html>
```