Pulse Rate Measurement API Service

The "WaveLight Beta-PR" API Service provides Peripheral Pulse Rate Measurement closely related to Heart Rate from a cPPG mobile video file.

Facts Summary

Disclaimer: This is a business-oriented document. For scientifically accurate information, please refer to the complete reports in the "Accuracy & Quality Assurance" section.

Vital Sign:	**Peripheral Pulse Rate**
Algorithm:	**PRB-cPPG-MONO-B01-WF**
Error Margin:	**±5 bpm (International standard for PPG devices)**
Expected Rejection Rate:	**15%(*) Laboratory test in a controlled environment**
Total Processing Time:	**22 seconds**
Input	**20-40 seconds cPPG anonymous video file**
Output:	**Average *Peripheral Pulse Rate* in bpm and detailed beat by beat array**
Media Requirements:	**+75% Red Intensity Level (190 / 255)**
Confidence Intervals:	**40-150 bpm**
Patient Age Range:	**17 to 70 years old**
Exclusion Conditions:	**Dark/Nail Polish**
	Finger Skin Abnormalities (Eg. Burns, tattoos, or scar)
	Use of Vasoconstrictors
	Cardiovascular Conditions affecting circulation, such as severe arrhythmias or peripheral vascular disease

Suggested Applications

Considering the close relation between Peripheral Pulse Rate and Heart Rate, **WaveLight Beta-PR API Service** can be used to develop applications, such as:

Telemedicine Support	**Home-Based Elderly Care**
Post-Surgical Recovery monitoring	**Chronic Disease Management**
Remote Patient Monitoring	**Post-Consultation Monitoring**
Screening	**Wellness**
Public Health	

Working Principles

WaveLight Beta-PR API Service uses the WaveFlow WaveLight's proprietary cPPG Technology to convert mobile contact video captures from individuals fingers into a Peripheral Pulse Rate measure.

Vital Sign:	**Peripheral Pulse Rate**
WaveFlow:	**PRB-cPPG-MONO-B01-WF**
Number Stages:	**3**
Stage 1 - Extraction:	**Video to Time Series Conversion**
Stage 2 - Segmentation:	**Heart Beat Identification**
Stage 3 - Result:	**Pulse Rate Calculation**

Usage

API Endpoint:	**https://api.wavelighthealth.com/**
API Documentation:	**https://api.wavelighthealth.com/docs** **https://www.postman.com/wave-light/wavelight/**
Service Key:	**BETA-PR**

Notice: For detailed information developers may access the API documentation

Accuracy & Quality Assurance

WaveLight's cPPG API services are subject of 4 levels of Testing and Trials:

	N	Accuracy	Mean Error	RMSE	SD Error	Maximum Error	Report
Level 1	60	92%	1,87 bpm	2,49 bpm	1,65 bpm	5,88 bpm	WF 25-001
Level 2	105	100%	0,14 bpm	0,21 bpm	0,15 bpm	0,8 bpm	WF 25-010
Level 3	Coming Soon						
Level 4	Coming Soon						

Report Levels:

Level 1 - Development Accuracy Test
Level 2 - Laboratory Accuracy Test