

# VIMALUX

A member of the Felicity Smart Infrastructure Group

A brighter vision



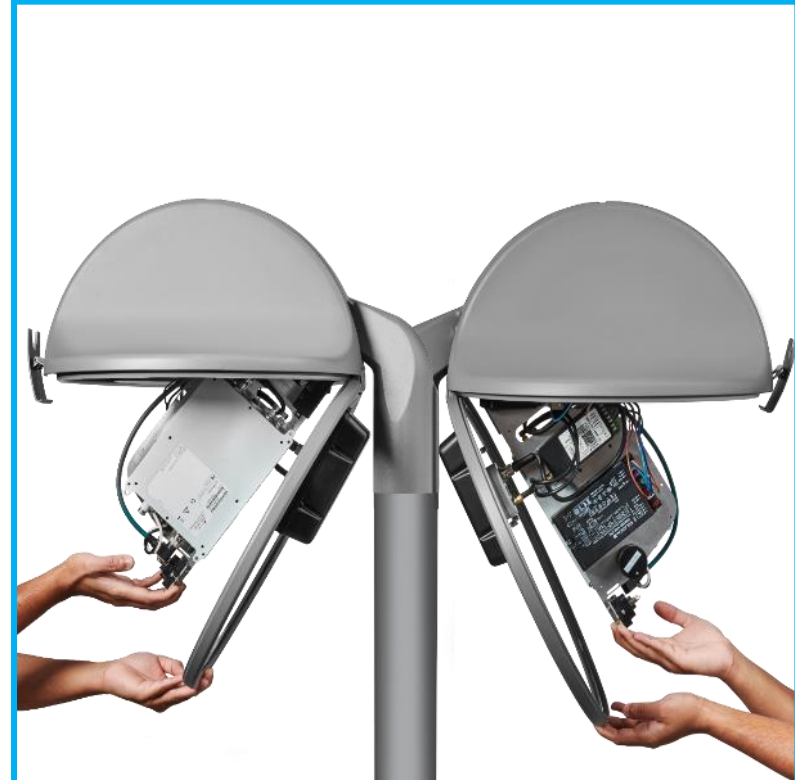
FELICITY SMART INFRASTRUCTURE- PRODUCT INTRODUCTION



TRAFFIC MONITORING SERVICES



LED STREET LIGHTING



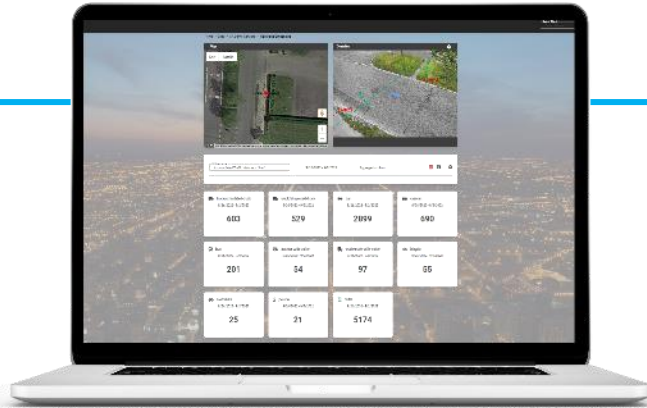
SMART CITY INFRASTRUCTURE

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TRAFFIC MONITORING SERVICES

DRIVING SAFER ROADS AND MOBILITY  
WITH LIVE TRAFFIC DATA

# TRAFFIC MONITORING SERVICES

LIVE TRAFFIC INFORMATION DELIVERED TO YOUR DOORSTEP...



## MULTI MODE DETECTION

VEHICLES  
TRUCKS  
BUSES  
BICYCLES  
PEDESTRIANS  
(9 OBJECT CLASSES)



## TRAFFIC TRACKING AND COUNTING

TRAFFIC VOLUMES BY  
MODE/DIRECTION  
ORINATION-  
DESTINATION,  
DWELL TIME  
ADT/AADT



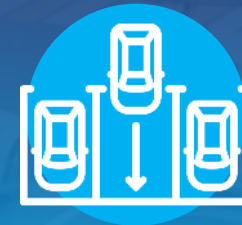
## INCIDENT DETECTIONS

WRONG TURN, WRONG  
DIRECTION VEHICLE  
BREAKDOWN  
NEAR MISS  
CONGESTION



## TRAFFIC SPEED MEASUREMENTS

SPEED BY OBJECT CLASS  
AVERAGE SPEEDS  
85<sup>TH</sup> PERCENTILES  
SPEED BUCKETS  
SPEEDING INSTANCES



## PARKING OCCUPANCY MONITORING

ENTRY/EXIT  
CURB SIDE SINGLE/MULTI  
SPACE  
BARRIER LESS PAYMENT



## AUTOMATIC NUMBER PLATE RECOGNITION (ANPR)

EU PLATES  
COUNTRY DETECTION (EU)

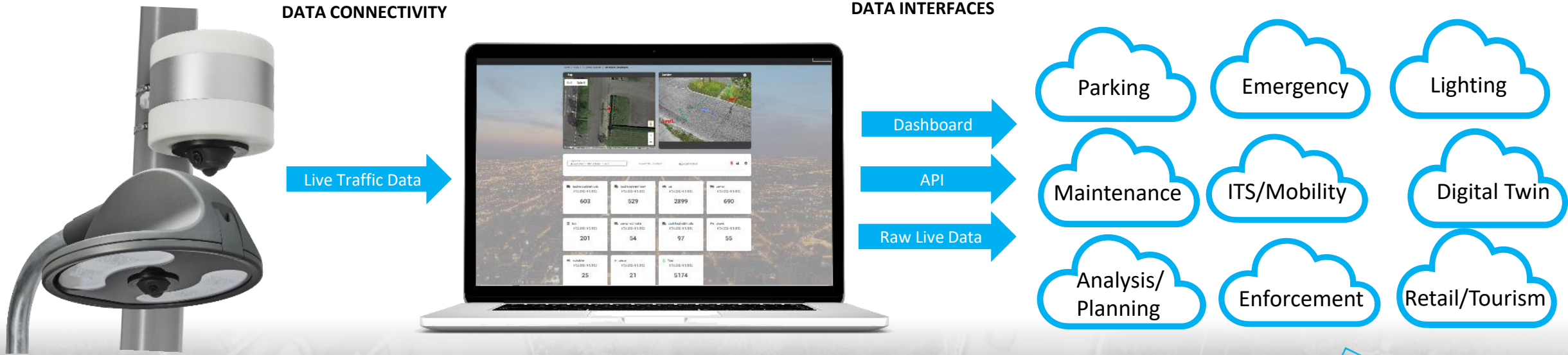
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# TRAFFIC MONITORING SERVICES

## END-TO-END INTEGRATED SERVICE PLATFORM



EASILY DEPLOYED AND DISCREET  
COMPUTER VISION SENSORS

CLOUD BASED DATA/DEVICE  
MANAGEMENT

DATA USERS/RECIPIENTS

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## TRAFFIC MONITORING SERVICE SERVICE DELIVERY

### PLANNING



1

We design the installation and configuration plan for your locations and traffic information requirements

### INSTALLATION/CONFIGURATION



2

We enable your local installer to deploy sensor(s)  
Sensor/Data configuration is implemented by FSI

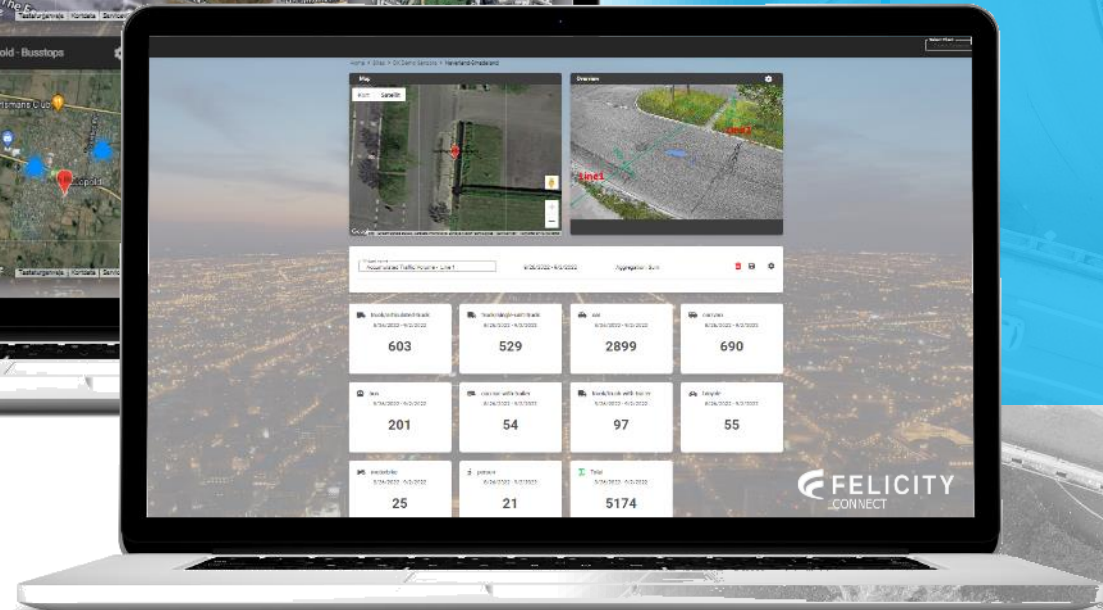
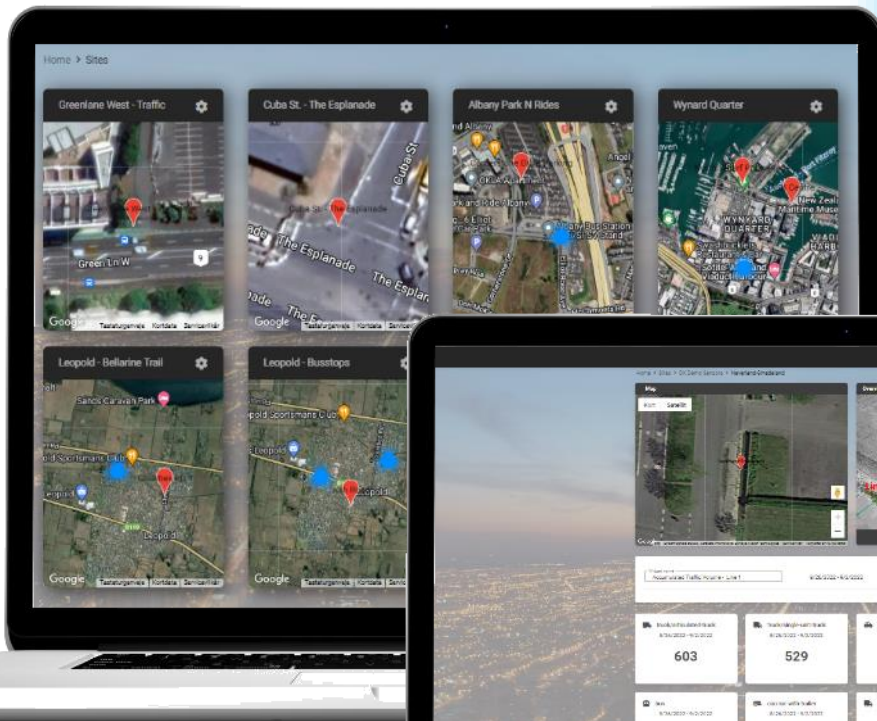
### ENJOY



3

You receive and engage with the live traffic data via Felicity Connect

## TRAFFIC MONITORING SERVICES FELICITY CONNECT



### FELICITY CONNECT

- ✓ Multitenant Traffic Data Cloud Application
- ✓ Widget Based Dashboard
- ✓ Multi Layer User/Role Assignments
- ✓ Device Connectivity, Location and Operation Status
- ✓ Traffic Data Mapping
- ✓ Output: Data Dashboard – Widget Design
- ✓ Output: Live Unaggregated Data Stream (JSON)
- ✓ Output: Restful API
- ✓ Output: CSV Files
- ✓ Output: Custom Reports

## TRAFFIC MONITORING SERVICE

### HIVE+ TRAFFIC SENSOR



### HIVE+ TRAFFIC SENSOR

- ✓ NVIDIA EDGE PROCESSOR
- ✓ 8MP CAMERA/SENSOR
- ✓ AI/ML TRAFFIC DETECTION APPLICATION
- ✓ 4G SIM CONNECTIVITY PACKAGE
- ✓ 2.4 GHZ WIFI OR ETHERNET BACKHAUL
- ✓ AC/DC/POE POWER OPTIONS
- ✓ EDGE BACKUP STORAGE: 24K EVENTS
- ✓ EASY INSTALLATION ON ANY POLE/MAST
- ✓ REMOTE CONFIGURATION AND CALIBRATION
- ✓ 24 HRS AUTO REBOOT
- ✓ POLE MOUNT



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## TRAFFIC MONITORING SERVICE

### GYRO+ TRAFFIC SENSOR



### GYRO+ TRAFFIC SENSOR

- ✓ LED STREETLIGHT (17-120W)
- ✓ NVIDIA EDGE PROCESSOR
- ✓ 8MP CAMERA/SENSOR
- ✓ AI/ML TRAFFIC DETECTION APPLICATION
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- ✓ 2.4 GHZ WIFI OR ETHERNET BACKHAUL
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# TRAFFIC MONITORING SERVICE

## SERVICE PLANS AND FEATURES



DATA ACCURACY >90%



AVAILABILITY > 0.9



DATA RETENTION < 6M



DELAY < 1S



NO CAPEX



GDPR COMPLIANT

Contact Us For Plans and Prices

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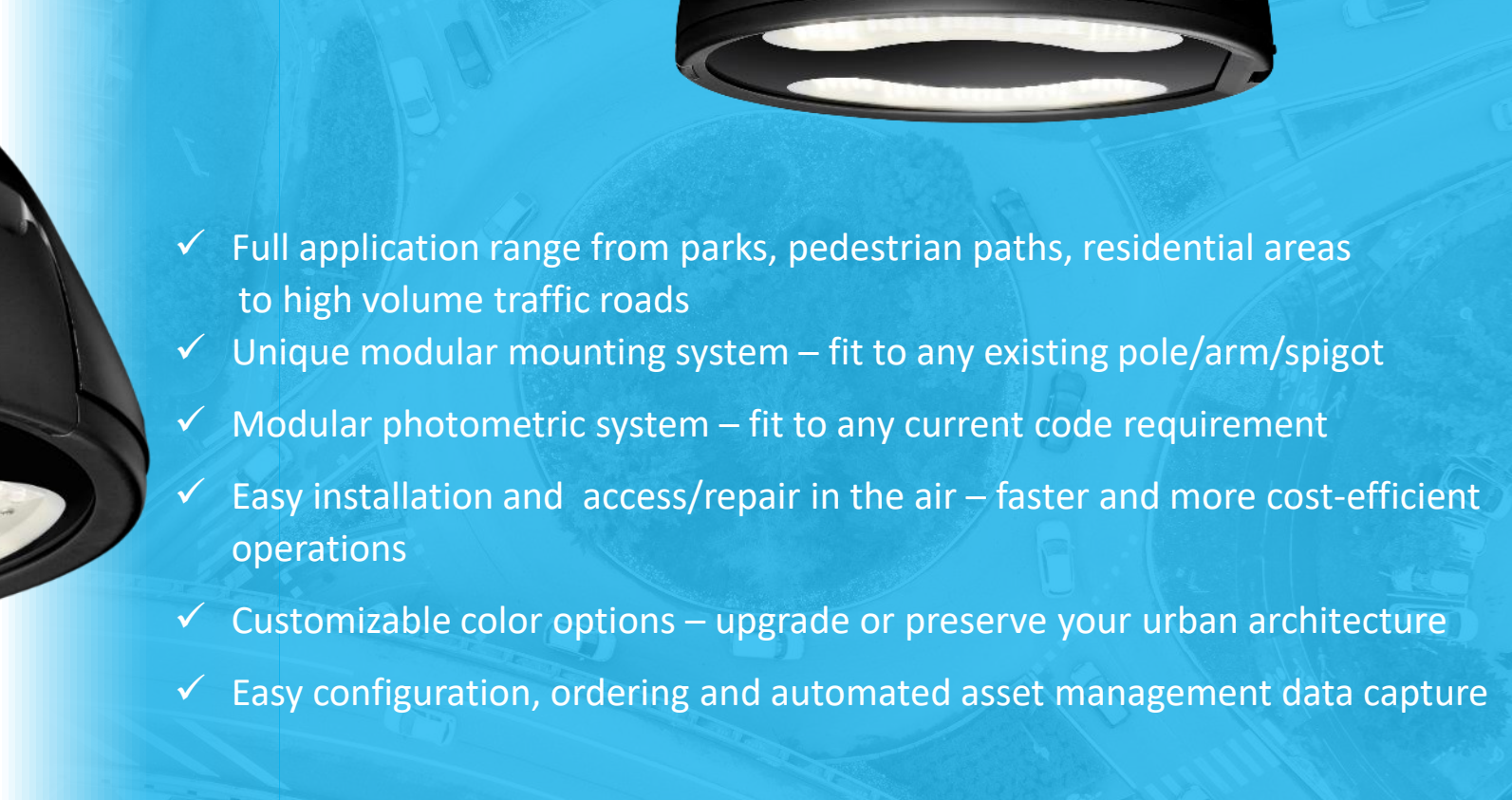


## LED STREET LIGHTING

LED STREET LIGHTING IS  
THE MOST SIGNIFICANT COST SAVING INVESTMENT  
A SMART CITY CAN MAKE  
WE ENSURE YOU GET IT RIGHT...

## GYRO

ONE LUMINIARE - A WORLD OF POSSIBILITIES



- ✓ Full application range from parks, pedestrian paths, residential areas to high volume traffic roads
- ✓ Unique modular mounting system – fit to any existing pole/arm/spigot
- ✓ Modular photometric system – fit to any current code requirement
- ✓ Easy installation and access/repair in the air – faster and more cost-efficient operations
- ✓ Customizable color options – upgrade or preserve your urban architecture
- ✓ Easy configuration, ordering and automated asset management data capture



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## GYRO

A STATEMENT OF EFFICIENT DESIGN AND  
ENGINEERING IN EVERY DETAIL



## GYRO

MODULAR MOUNTING

1 LUMINAIRE, 5 MOUNTING OPTIONS

PARK



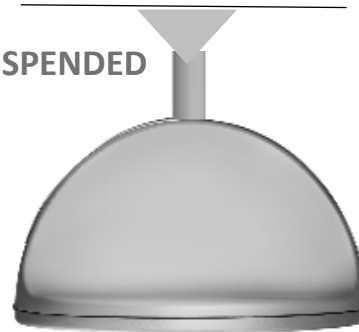
SIDE



TOP



SUSPENDED



PENDANT



## GYRO

A COMPLETE RANGE OF POWER, CCT, OPTICS, CRI OPTIONS



	<b>GYRO-20</b>	<b>GYRO-40</b>	<b>GYRO-60</b>	<b>GYRO-80</b>
<b>LED QTY.</b>	20 pcs. High Power	40 pcs. High Power	60 pcs. High Power	80 pcs. High Power
<b>WATTAGE RANGE</b>	12W-40W	40W-75W	75W-115W	120W-150W
<b>LUMEN RANGE</b>	1500-4700	4500-10000	10000-15000	16000-20000
<b>LUMEN/WATT</b>	120-140	120-140	120-140	120-140
<b>CCT</b>	3000K, 4000K	3000K, 4000K	3000K, 4000K	3000K, 4000K

## GYRO

EASY ACCESS, BETTER MAINTENANCE



- ✓ PREWIRED - EASY/QUICK INSTALLATION
- ✓ TOOL-LESS MAINTENANCE ACCESS
- ✓ REMOVE/REPLACE ALL ELECTRONICS GEAR, IN THE AIR, IN SECONDS.
- ✓ SAFETY FIRST – POWER DISCONNECT ON LUMINAIRE OPENING.
- ✓ PLENTY OF SPACE FOR EMBEDDED LIGHTING CONTROL AND FUTURE SMART CITY ELEMENTS



# GYRO

DEFINE YOUR CITYSCAPE WITH COLOURS



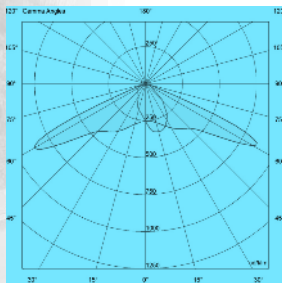
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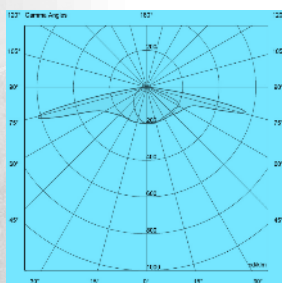
LENS

SHIELD



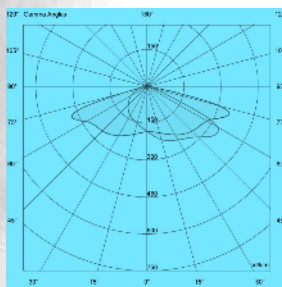
**L1 : Bicycle Paths and Pathways**

Installation 3-7m .  
Low glare. Narrow path  
Type I



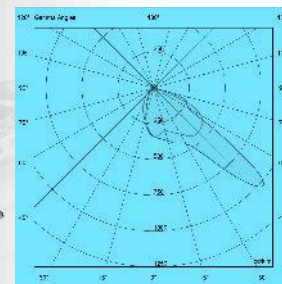
**L6: P-CAT Traffic Roads(Australia)**

Installation 5-8m  
Designed for max pole distance,  
Type III  
P-CAT Australian standards



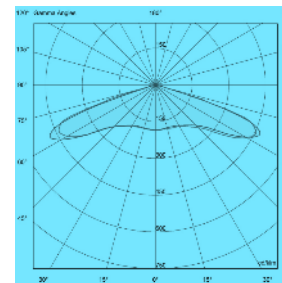
**L9: P-CAT Traffic Roads (New Zealand)**

Installation 5-8m  
Designed for long pole distance - Wide  
P-CAT New Zealand Glare requirement  
TYPE IV



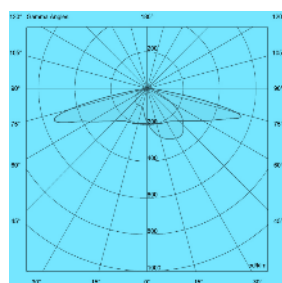
**LPL and LPR Pedestrian Crossing**

Installation 3-7m .  
Double asymmetric beam Optics  
approved for NZ Pedestrian Crossing  
application



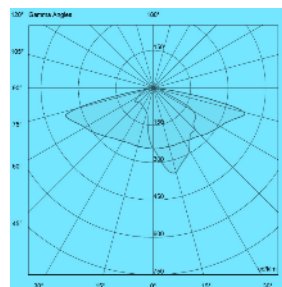
**L5: Parks, Spaces, Parking**

Installation 3-10m  
Roto-symmetric  
Type V



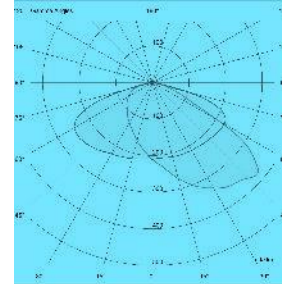
**L12: V-CAT Traffic Roads(Australia)**

Installation 6-15m  
Designed for max pole distance,  
Type II  
V-CAT Australian standards



**L7: V-CAT Traffic Roads(NZ/AU)**

Installation 5-8m  
Designed for max pole distance,  
V-CAT Australian/New Zealand standards  
TYPE III



**T4: Cul de Sac**

Installation 3-10m . Special  
optics with front beam optimal  
for cul de sac

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INTEGRATED SMART CITY INFRASTRUCTURE  
UNLOCK THE TRUE POTENTIAL OF YOUR  
STREET LIGHTING INFRASTRUCTURE AND  
BRIGHTEN UP YOUR CITY'S FUTURE

# SMART CITY INFRASTRUCTURE

GYRO STREETLIGHT WITH INTEGRATED WIFI ACCESS POINT

IoT Gateways



Visual AI Traffic Sensor



WiFi Access Point



CCTV Cameras



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## SMART CITY INFRASTRUCTURE STREETLIGHT WITH INTEGRATED WIFI ACCESS POINT



### **GYRO+ TRAFFIC SENSOR**

- ✓ LED STREETLIGHT (17-120W)
- ✓ SMART LIGHTING CONTROLLER
- ✓ RUCKUS E510 AP
- ✓ 2,4/5 MHZ 801.AC
- ✓ MESH OR ETHERNET BACKHAUL
- ✓ UP TO 400 SIMULTANEOUS USERS
- ✓ SOCIAL LOGIN/SPLASHPAGE
- ✓ CONTENT FILTERING
- ✓ FULLY MANAGED AND OPERATED 24/7



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## SMART CITY INFRASTRUCTURE STREETLIGHT WITH INTEGRATED IP 360 CAMERA



### GYRO+ 360 CAMERA

- ✓ LED STREETLIGHT (17-120W)
- ✓ SMART LIGHTING CONTROLLER
- ✓ INTEGRATED MOBOTIX S16 IP CAMERA SYSTEM
- ✓ BACKHAUL OPTIONS: CELLULAR, ETHERNET, WIFI
- ✓ FULLY MANAGED AND OPERATED 24/7



## SMART CITY INFRASTRUCTURE STREETLIGHT WITH INTEGRATED VISUAL TRAFFIC SENSOR



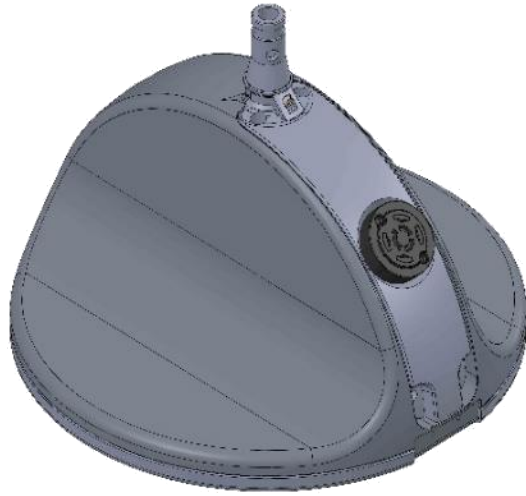
### GYRO+ TRAFFIC SENSOR

- ✓ LED STREETLIGHT (17-120W)
- ✓ NVIDIA NANO EDGE PROCESSOR
- ✓ 8MP CAMERA/SENSOR
- ✓ AI/ML TRAFFIC DETECTION APPLICATION
- ✓ 4G SIM CONNECTIVITY PACKAGE
- ✓ 2.4 GHZ WIFI OR ETHERNET BACKHAUL
- ✓ AC/DC/POE POWER OPTIONS
- ✓ EDGE BACKUP STORAGE: 24K EVENTS
- ✓ CLOUD DATA AND VISUALIZATION PLATFORM

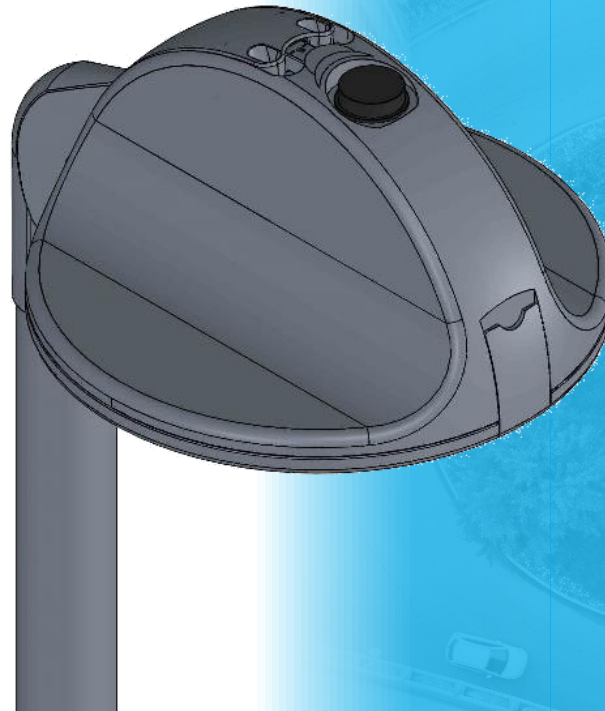




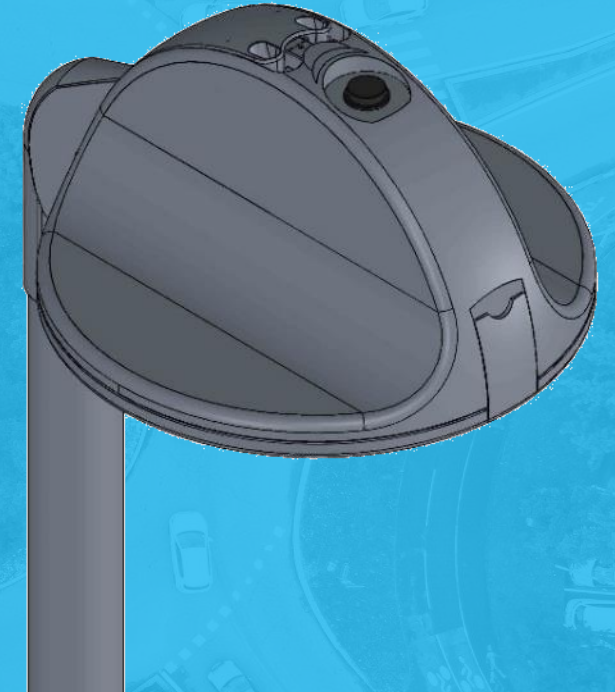
## SMART CITY INFRASTRUCTURE EXTERNAL SMART CITY INTEGRATION



NEMA for Pendant



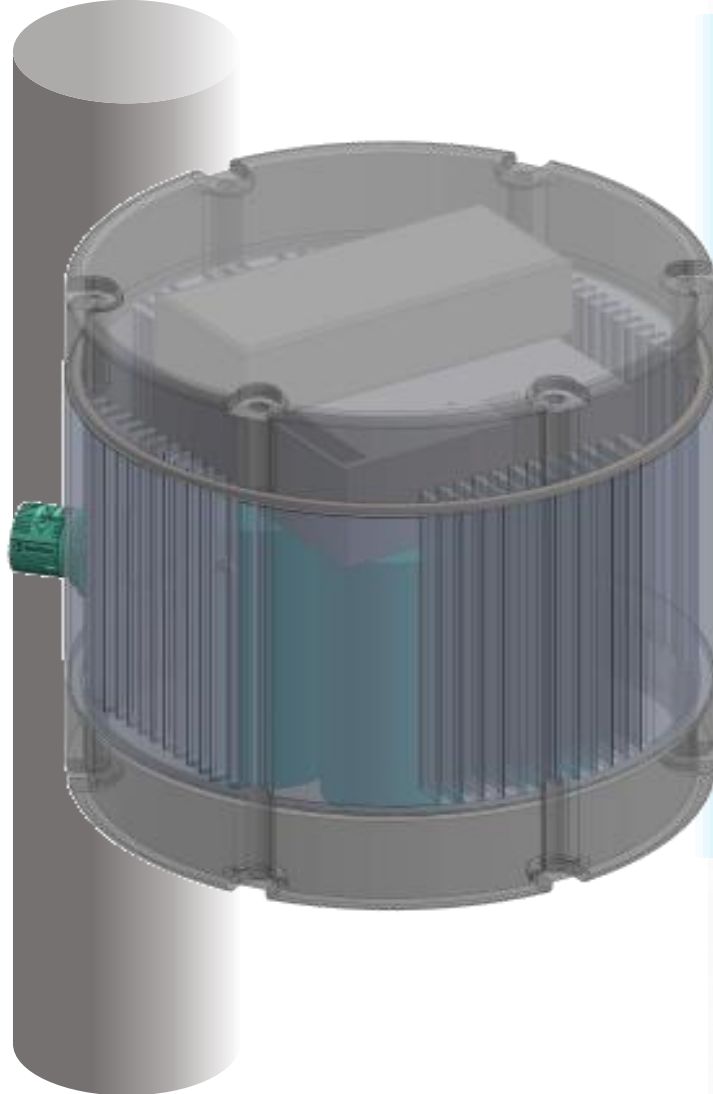
NEMA for Top, Side, Park



BOOK 18 ZHAGA up/down

## SMART CITY INFRASTRUCTURE

IP66 AC CHARGER/BATTERY FOR SMART CITY DEVICES IN STREETLIGHTING POLES



### HIVE+ BATTERY PACK

- ✓ LI-ION CELLS
- ✓ 22 AH CAPACITY
- ✓ INTEGRATED BMS
- ✓ INTEGRATED 60W AC/DC CHARGER
- ✓ CONSTANT 12V OUTPUT
- ✓ IP66

### DC POWER SUPPORT FOR INTERMITTENT AC POWER/RIPPLE RELAY DEVICE DEPLOYMENTS

- DEVICE IS POWERED BY 12VDC FROM HIVE+ BATTERY PACK
- 100-240 VAC CHARGING FROM POLE TO BATTERY PACK DURING NIGHT
- BATTERY PACK RECHARGE FULLY EVERY NIGHT WHEN GRID POWER IS ON



**GYRO - INTEGRATED SMART CITY**  
Urban Area Design Example



## GYRO - SMART LIGHTING CANOPY

- Wire mounted pendant version of GYRO forms a canopy both during night and day. This invokes both a festive and market-like ambience, as well as a sensation that will entice and extend dwell time for users.
- The GYROS are kept in two colors (light and dark tones) as an architectural symbol of night and day. This will also create further dynamic during daytime.
- The light distribution will be set with optics creating relatively narrow beams creating intermittent spaces between lighter and darker spots to create a more exciting dynamic at night.
- Wireless dimming settings via onboard lighting controller in each luminaire, can be used to create difference scenes, moods and functions during nighttime.
- High CRI LEDs in a CCT range of 2800-4000K that can be individually adjusted through the smart lighting system, will enable even more advanced illumination scenes and moods








Scene: The Line



Scene: The Snake



## SMART CITY INTEGRATIONS IN GYRO LUMINAIRES

-  GYRO with 360 Camera
-  GYRO with Selfie Camera
-  GYRO with Traffic Camera
-  GYRO with Air Quality Sensor
-  GYRO with WiFi Access Point
-  GYRO with IoT Gateway (LoRaWAN)

All lights equipped with internal Smart Lighting Control Units Connected via IoT network

CHECK OUT THE  
**AIR  
QUALITY**  
IN THIS LOCATION



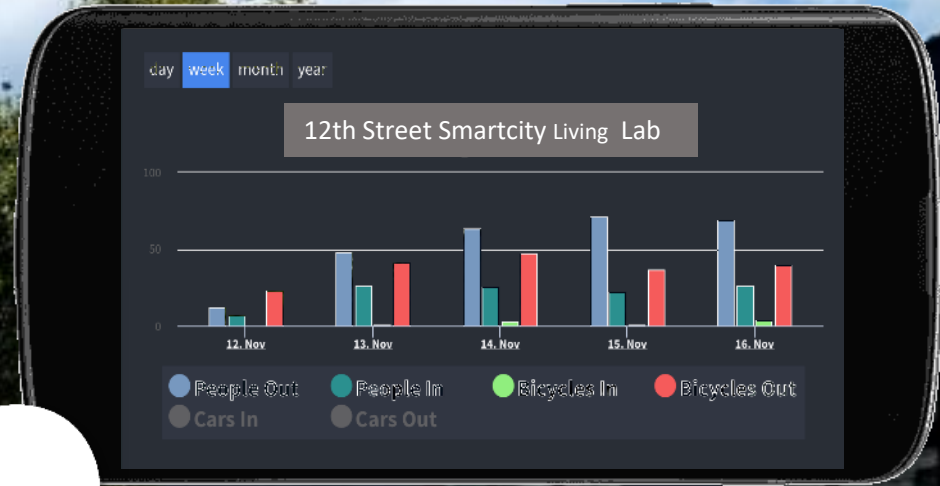
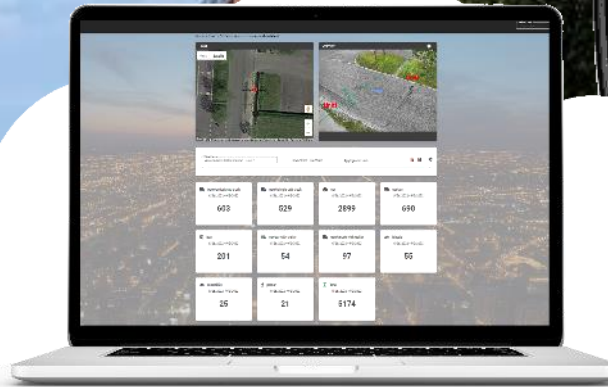
CHECK OUT THE  
**PEDESTRIAN  
TRAFFIC STATS**  
IN THIS LOCATION



Get Connected!  
**WiFi**  
IN THIS LOCATION



LOOK UP!  
**SELFIE  
FROM THE SKY**  
IN THIS LOCATION



# Interaction and Engagement Ideas

# CUSTOMER REFERENCES



Comune di Arre



Comune Cassola



Comune Fara di Vecentino



Comune Montebello



Comune Mussolente



Comune Mussolente



Comune Grezzana



Comune di  
Negrar di Valpolicella



Comune Rivoli Veronese



Comune di Biseglie



Comune Salizzole



Comune Caerano



## CUSTOMER AND PARTNER EXPERIENCES

Municipality of Bisceglie of the Global Smart City 2022:

***“We have deployed HIVE+ Traffic at a number of locations for multimodal traffic monitoring. Council has found the service effective and reliable over time and in connection with our micro mobility infrastructure upgrade monitoring”.***

*Project Manager Smart City*

Major New Zealand Council:

***“Through thorough testing we have found HIVE+ Traffic very effective for multimodal traffic monitoring. The plug&play unit is very compact and mounts easily to our existing assets. This service add great value to Council’s cordon network and other traffic monitoring safety and planning requirements. As such, we are now deploying further units and building out our network”***

*Traffic Project Manager*

Leader in the integration of Alfano Luce :

***“Our team has found Felicity’s Ai Multimodal Traffic Monitoring Service very fast to deploy and efficient. It has satisfied our clients who are now expanding the network of sensors for a variety of traffic monitoring needs”***

*ITS Senior Project & Contract Manager, Infrastructure*

Leading New Zealand Telecom and Smart City Provider:

***“Felicity’s HIVE+ Traffic Multimodal Traffic Monitoring Service is attracting a lot of interest from our wide array of clients including Councils, Authorities and large Asset Owners. We are getting orders for a variety of traffic monitoring purposes and the client feedback is extremely positive”.***

*Business Development Manager IoT*





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