OrbitX

Direct Drive LED Lights

Specifications

May 2019

OrbitX Direct Drive LED lights offer up to 8-year guarantees, near-unity power factor and do not cause wireless interference often associated with traditional LED lamps.
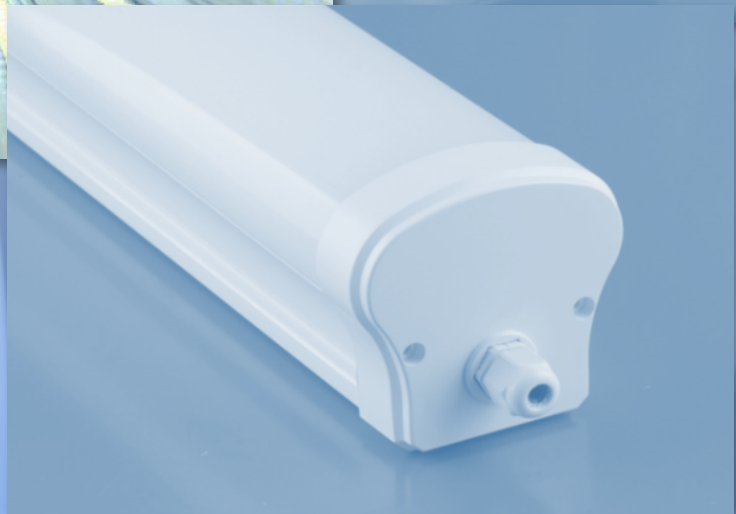
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OrbitX
Neptune IP65/Highbay

Integrated IP65 fitting
Dust proof, Moisture proof, Vapour proof
OrbitX Direct Drive Technology

Ideal for:
- Cold storage
- Parking garages
- Mining
- Warehouses
- Packhouses
- Storerooms
- Factories
- Cellars, breweries, distilleries
- Food industry: kitchens, packing, storage
- Retail stores
- Schools, Colleges, Universities
- Dormitories
- Canopy lights
- Residential garages, kitchens
- Passages
- Printing industry
- TV and film studio lighting
- Exhibition halls
- Inspection areas
- Gyms
- Art studios and galleries
- Interior decorating
- Outdoor use: parking areas, open areas

Available in 1200mm and 1800mm in the following outputs:

2000lm – 20W	High bay (1800mm):
4000lm – 40W	12000lm – 120W
6000lm – 60W	15000lm – 150W
8000lm – 80W	

Optional: Radar motion-sensing
             Battery backup

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OrbitX Neptune

	OrbitX Neptune **Direct Drive LED**
Configuration	Integrated IP65 1200mm, 1500mm and 1800mm available
Guarantee (24h/365d)	**8 Years Operational** **(5y light output)**
Lifespan (L70) **IES LM-80, TM-21**	**30 years (8h/d, 5d/week)** **8 years (24h/d, 7d/week)** **70 000h**
Power Rating	**20W / 40W / 60W / 80W** **Highbay 120W / 150W**
Luminous Flux (downwards)	**2000 / 4000 / 6000 / 8000** **Highbay 12000 lm / 15000lm**
Luminous efficacy	**100 - 110 lm/W**
Wi-Fi, barcode scanner, radio frequency interference	**IEC 61547, SANS 215 (CISPR15) compliant** **Very Low**
Power Factor	>0.95
Total Harmonic Distortion	IEC 61000-3-2 Class D compliant
Correlated Colour Temperature (CCT)	4000K, 5000K
CRI (Ra); GAI	83; 96 Type A Retail Lighting Compliant
Beam angle	200°
On/Off Switching	Unlimited
Delay to full brightness	Instant
Operating Voltage	220-240V AC
Surge Voltage	1 500 V
Fire rating	VO (no flaming droplets)
Risk of breakage	Very low (extra thick polycarbonate housing)

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX Neptune
Radar Motion-Sensing

	OrbitX Neptune Radar Direct Drive LED
Configuration	Radar Motion-Sensing is available for any Standard Neptune IP65 fitting
Guarantee	5 years operational
Light output: 20W Neptune 100% = 2000lm	Motion: 100% Dimmed: 0%
Light output: 40W Neptune 100% = 4000lm	Standard: Motion: 100% Dimmed: 50% Option 2: Motion: 100% Dimmed: 0%
Light output: 60W Neptune 100% = 6000lm	Standard: Motion: 100% Dimmed: 33% Option 2: Motion: 100% Dimmed: 67% Option 3: Motion: 100% Dimmed: 0%
Sensing distance	Minimum 6m
Sensing range	270°
Power consumption when dimmed to 0%	<100mW
Radar frequency	2.4 – 2.4835 GHz
Standard on-time from motion until dimmed	2 minutes
On/Off Switching	Unlimited
Delay to full brightness	Instant

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX Neptune Battery Backup

	OrbitX Neptune Backup Direct Drive LED
Configuration	Battery backup is available internally for the standard Neptune IP65 fitting and as an external option for OrbitX Tube Lamps
Guarantee	1 year operational
Light output: **40W Neptune** **100% = 4000lm**	Standard: Mains on: 100% Battery: 50% for 1h Option 2: Mains on: 100% Battery: 100% for 0.5h
Light output: **20W Neptune or Tube** **100% = 2000lm**	Mains on: 100%; Battery Power: 100% for 1h
Light output: **60W Neptune** **100% = 6000lm**	Standard: Mains on: 100% Battery: 30% for 1h Option 2: Mains on: 100% Battery: 67% for 0.5h
Minimum charging time	24h
Switched Line	Available in three-wire configuration
On/Off Switching	Unlimited
Delay to full brightness	Instant

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX
Titan IP65

Integrated IP65 fitting
Dust proof, Moisture proof, Vapour proof
OrbitX Direct Drive Technology

Ideal for:
- Offices
- Commercial areas
- Parking garages
- Storerooms
- Food industry: kitchens, packing, storage
- Retail stores
- Schools, Colleges, Universities
- Dormitories
- Residential garages, kitchens
- Passages
- TV and film studio lighting
- Exhibition halls
- Inspection areas
- Gyms
- Art studios and galleries
- Interior decorating
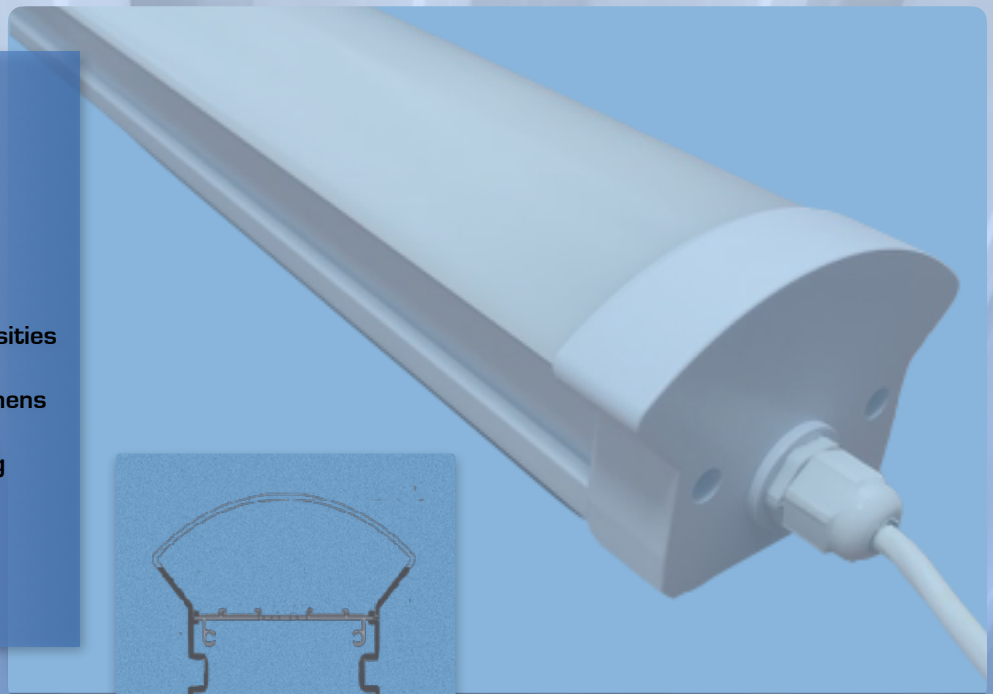
Available in 600mm, 1200mm and 1500mm in the following outputs:

600mm – 1800lm – 18W

1200mm – 3600lm – 36W
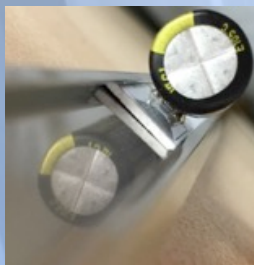1200mm – 5400lm – 54W

1500mm – 5800lm – 58W

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OrbitX Titan

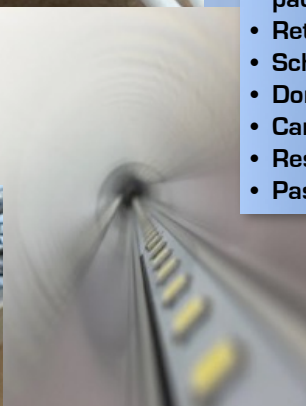|	OrbitX Titan Direct Drive LED
Configuration	Integrated IP65 600mm, 1200mm and 1500mm available
Guarantee (24h/365d)	**6 Years Operational (3y light output)**
Lifespan (L70) IES LM-80, TM-21	**30 years (8h/d, 5d/week) 8 years (24h/d, 7d/week) 70 000h**
Power Rating	**18W / 36W / 54W / 58W**
Luminous Flux (downwards)	**1800 / 3600 / 5400 / 5800lm**
Luminous efficacy	**100 - 110 lm/W**
Wi-Fi, barcode scanner, radio frequency interference	**IEC 61547, SANS 215 (CISPR15) compliant Very Low**
Power Factor	>0.95
Total Harmonic Distortion	IEC 61000-3-2 Class D compliant
Correlated Colour Temperature (CCT)	4000K, 5000K
CRI (Ra); GAI	83; 96 Type A Retail Lighting Compliant
Beam angle	160°
On/Off Switching	Unlimited
Delay to full brightness	Instant
Operating Voltage	220-240V AC
Surge Voltage	1 500 V
Fire rating	V0 (no flaming droplets)
Risk of breakage	Very low (extra thick polycarbonate housing)

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX T8/T5 Tube Lamps

Large MOV ensures spike resistance of 1.5kV

Ideal for:
- Offices
- Commercial areas
- Display fridges
- Under counter lighting
- Printing industry
- TV and film studio lighting
- Exhibition halls
- Inspection areas
- Gyms
- Art studios and galleries
- Interior decorating
- Sign boxes
- Cold storage
- Parking garages
- Warehouses
- Packhouses
- Storerooms
- Factories
- Cellars, breweries, distilleries
- Food industry: kitchens, packing, storage
- Retail stores
- Schools, Colleges, Universities
- Dormitories
- Canopy lights
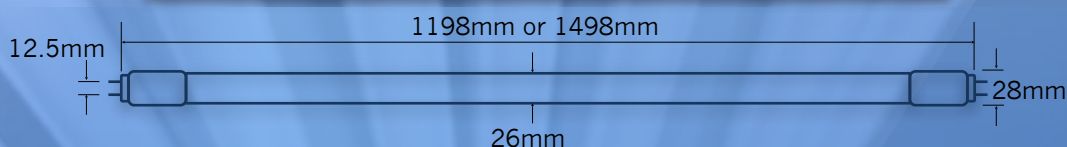- Residential garages, kitchens
- Passages

Low running temperature for capacitor results in life expectancy of >100 000h

Direct Drive IC replaces traditional LED driver

Low mounting in housing allows viewing angle of 270°

12.5mm

1198mm or 1498mm

26mm

28mm

Line and Neutral on same end of tube

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OrbitX
Retrofit (Optional)
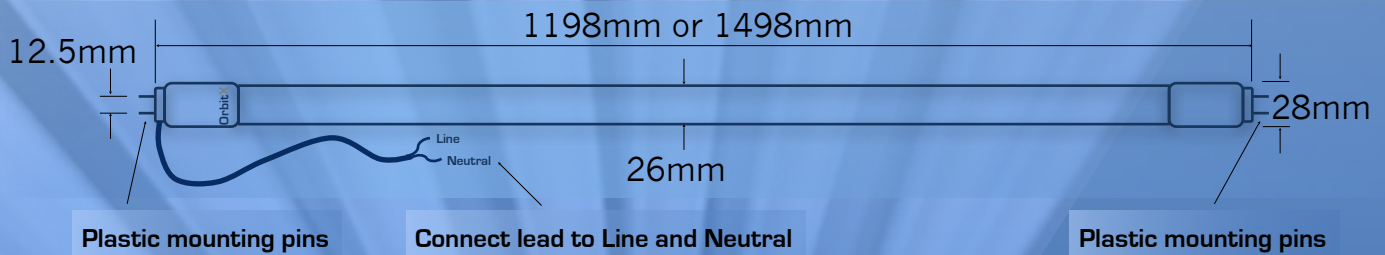
SABS Passed

Unique non-conducting mounting pins combined with lead for electrical connection allows retro-fitting without modifying existing luminaire

No modification to existing luminaire – simply connect the OrbitX Direct Drive LED tube lamp lead directly to the AC supply.

No modification: SABS and other certifications of the existing luminaire remain unaffected by OrbitX Retrofit.

1198mm or 1498mm

12.5mm

28mm

Line

Neutral

26mm

Plastic mounting pins   **Connect lead to Line and Neutral**   **Plastic mounting pins**

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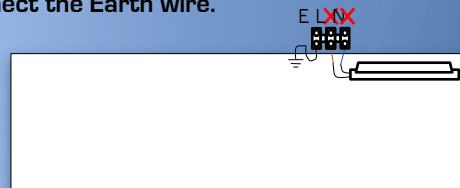
OrbitX
Retrofit Installation

No modification is made to the existing luminaire. SABS and other certifications of the existing luminaire remain unaffected by OrbitX Retrofit.
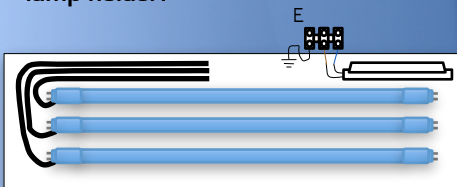
1. Remove the old fluorescent tube lamps.
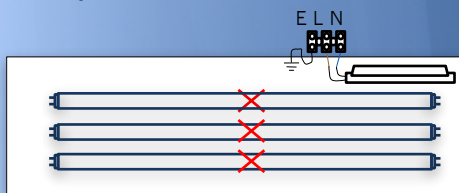
2. Disconnect the Line and Neutral wires of the building power supply from the existing lamp holder. Do not disconnect the Earth wire.

3. Fit the OrbitX lamps into the existing lamp holder.

4. Connect the Line and Neutral wires of the building power supply directly to the integrated lead(s) of the OrbitX lamp(s) by means of standard terminal blocks.
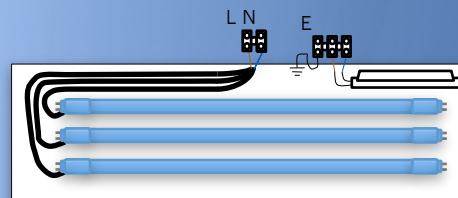
The Retrofit lamp has plastic pins on both sides of the lamp. These pins are electrically insulated and their sole purpose is to allow the lamp to be physically fitted in existing lamp holders.
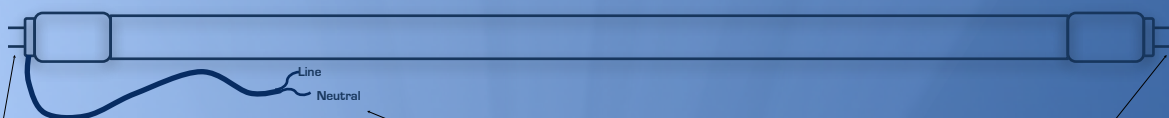
Plastic mounting pins   Connect lead to Line and Neutral   Plastic mounting pins

OrbitX 8-Year T8 Tube

	OrbitX 2400mm	OrbitX 1800mm	OrbitX 1500mm	OrbitX 1200mm	OrbitX 900mm	OrbitX 600mm
Power Rating (220V-240V)	**40W**	**30W**	**22W**	**20W**	**15W**	**9W**
Luminous Flux (downwards)	**4000lm**	**3000lm**	**2200lm**	**2000lm**	**1500lm**	**900lm**
Guarantee (24h/365d)	**8 Years Operational (5y light output L70)**					
Lifespan (L70) IES LM-80, TM-21	**30 years (8h/d, 5d/week)** **8 years (24h/d, 7d/week)** **70 000h**					
Power saving compared to fluorescent	**>50%**					
Light output compared to fluorescent (downwards)	**>110%**					
Luminous efficacy	**>100 lm/W**					
Wi-Fi, barcode scanner, radio frequency interference	**IEC 61547,SANS 215 (CISPR15) compliant** **Very Low**					
Power Factor	>0.95					
Total Harmonic Distortion	IEC 61000-3-2 Class D compliant					
Correlated Colour Temperature (CCT)	4000K, 5000K					
Light Quality: CRI (Ra); GAI	CRI=83; GAI=96 Type A Retail Lighting Compliant					
Beam angle	270°					
On/Off Switching	Unlimited					
Delay to full brightness	Instant					
Operating Voltage	220-240V AC					
Surge Voltage	1 500 V					
Fire rating	V0 (no flaming droplets)					
Risk of electric shock	No external metal (SANS1662 compliant)					
Risk of breakage	Very low (polycarbonate tube)					

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX Europa T8 Tube

	OrbitX 2400mm	OrbitX 1800mm	OrbitX 1500mm	OrbitX 1200mm	OrbitX 900mm	OrbitX 600mm
Guarantee (24h/365d)	**5 Years Operational** **(3y light output L70)**					
Power Factor	>0.95					
Luminous efficacy	**>100 lm/W**					
Light output compared to fluorescent (downwards)	**>100%**					
Power saving compared to fluorescent	**>50%**					
Surge Voltage	1 500 V					
Operating Voltage	220-240V AC					
Lifespan (L70) IES LM-80, TM-21	**26 years (8h/d, 5d/week)** **6 years (24h/d, 7d/week)** **55 000h**					
Beam angle	270°					
Luminous Flux (downwards)	**3600lm**	**2700lm**	**2000lm**	**1800lm**	**1500lm**	**900lm**
Power Rating (220V-240V)	**36W**	**27W**	**19.5W**	**18W**	**14.5W**	**8.5W**
Correlated Colour Temperature (CCT)	4000K, 5000K					
Light Quality: CRI (Ra); GAI	CRI=83; GAI=96 Type A Retail Lighting Compliant					
Total Harmonic Distortion	IEC 61000-3-2 Class D compliant					
Wi-Fi, barcode scanner, radio frequency interference	**IEC 61547,SANS 215 (CISPR15) compliant** **Very Low**					
Delay to full brightness	Instant					
Risk of electric shock	No external metal (SANS1662 compliant)					
On/Off Switching	Unlimited					
Fire rating	VO (no flaming droplets)					
Risk of breakage	Very low (polycarbonate tube)					

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX Europa T5

	OrbitX 1450mm Low Power	OrbitX 1150mm High Output	OrbitX 1150mm Low Power
Power Rating (220V-240V)	21W	24.5W	17.5W
Luminous Flux (downwards)	2100lm	2500lm	1800lm
Guarantee (24h/365d)	5 Years Operational (3y light output L70)		
Lifespan (L70) IES LM-80, TM-21	26 years (8h/d, 5d/week) 6 years (24h/d, 7d/week) 55 000h		
Power saving compared to T5 fluorescent	>35%	>50%	>35%
Light output compared to fluorescent (downwards)	>100%		
Luminous efficacy	>100 lm/W		
Wi-Fi, barcode scanner, radio frequency interference	IEC 61547,SANS 215 (CISPR15) compliant Very Low		
Power Factor	>0.95		
Total Harmonic Distortion	IEC 61000-3-2 Class D compliant		
Correlated Colour Temperature (CCT)	4000K, 5000K		
Light Quality: CRI (Ra); GAI	CRI=83; GAI=96 Type A Retail Lighting Compliant		
Beam angle	270°		
On/Off Switching	Unlimited		
Delay to full brightness	Instant		
Operating Voltage	220-240V AC		
Surge Voltage	1 500 V		
Fire rating	VO (no flaming droplets)		
Risk of electric shock	No external metal (SANS1662 compliant)		
Risk of breakage	Very low (polycarbonate tube)		

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX
Floodlights with ALS

Integrated Automatic Light Sensor (ALS)
Switches on at dusk and off at dawn
No risk of light being on during day time

Ideal for:
- Security lighting
- Mining
- Construction
- Earth moving
- Outdoor industrial operations
- Sports fields
- Outdoor parking areas
- Open areas
- Perimeter lighting
- Flood lighting of buildings

Integrated IP65 fitting
Dust proof, Moisture proof, Vapour proof
Direct Drive Technology

Available in the following sizes:
10W, 20W, 30W, 50W, 100W, 200W

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OrbitX
Lamp for Life Floodlights
with integrated automatic light sensor

Power Rating (220V-240V)	200W	100W	50W	30W	20W	10W
Luminous Flux	20000lm	10000lm	5000lm	3000lm	2000lm	1000lm
Guarantee (24h/365d)	5 Years					
Lifespan (L70) IES LM-80, TM-21	15 years (8h/d, 5d/week) 10 years (12h/d, 7d/week) 50 000h					
Power saving compared to Metal Halide / Halogen	>50%					
Light output compared to Metal Halide / Halogen	>110%					
Luminous efficacy	100 lm/W					
Wi-Fi, barcode scanner, radio frequency interference	IEC 61547,SANS 215 (CISPR15) compliant Very Low					
Power Factor	>0.95					
Safety	IEC60598-1, IEC60598-2-5					
Correlated Colour Temperature (CCT)	5700 - 6500K					
Light Quality: CRI (Ra)	>80					
Beam angle	120°					
On/Off Switching	Unlimited					
Delay to full brightness	Instant					
Operating Voltage	220-240V AC					
Surge Voltage	IEC61000-4-5: 2000 V line-ground, 1000 V line-line					
Working temperature range	0 - 40°C					
IP Protection	IP65					
Ambient light sensore	100-400 lux threshold ±50 lux hysteresis, avg. 1min					
Risk of breakage	Vibration and shock resistant					

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX
Tracklights

Slim design without bulky external driver
Easy installation and on-site adjustment in tracks
Type A lighting - mimics sunlight

Ideal for:

- Retail
- Merchandise
- Signage
- Feature illumination
- Commercial lighting
- Exhibition halls
- Inspection areas
- Gyms
- Art studios and galleries
- Interior decorating

Integrated over temperature protection
Direct Drive Technology
IP20 rating

Available in the following sizes:
30W, 40W

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OrbitX
Lamp for Life Tracklights

Power Rating (220V-240V)	40W	30W
Luminous Flux	3200lm	2500lm
Beam angle	45°	
Guarantee (24h/365d)	5 Years	
Lifespan (L70) IES LM-80, TM-21	15 years (8h/d, 5d/week) 10 years (12h/d, 7d/week) 50 000h	
Power saving compared to Metal Halide / Halogen	>50%	
Light output compared to Metal Halide / Halogen	>110%	
Luminous efficacy	>80 lm/W	
Wi-Fi, barcode scanner, radio frequency interference	IEC 61547,SANS 215 (CISPR15) compliant Very Low	
Power Factor	>0.95	
Safety	IEC60598-1, IEC60598-2-5	
Correlated Colour Temperature (CCT)	5700 - 6500K	
Light Quality: CRI (Ra)	>80	
On/Off Switching	Unlimited	
Delay to full brightness	Instant	
Operating Voltage	220-240V AC	
Surge Voltage	IEC61000-4-5: 2000 V line-ground, 1000 V line-line	
Working temperature range	0 - 40°C	
IP Protection	IP20	
Risk of breakage	Vibration and shock resistant	

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX
Low Glare Down Lights

Recessed fitting - low glare
Surface mount adapter available
Type A lighting - mimics sunlight

Ideal for:
- Retail
- Commercial lighting
- Shopping malls
- Corridors and passageways
- Office lighting
- Exhibition halls
- Schools, Colleges, Universities
- Dormitories
- Gyms

Integrated over temperature protection
Direct Drive Technology
IP20 rating

Available in the following sizes:
29W, 42W

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OrbitX
Lamp for Life Down Lights

Power Rating (220V-240V)	42W	29W
Luminous Flux	3600lm	2500lm
Beam angle	90°	
Guarantee (24h/365d)	5 Years	
Lifespan (L70) IES LM-80, TM-21	14 years (8h/d, 5d/week) 7 years (12h/d, 7d/week) 30 000h	
Power saving compared to Metal Halide / Halogen	>50%	
Light output compared to Metal Halide / Halogen	>110%	
Luminous efficacy	>80 lm/W	
Wi-Fi, barcode scanner, radio frequency interference	IEC 61547,SANS 215 (CISPR15) compliant Very Low	
Power Factor	>0.95	
Safety	IEC60598-1, IEC60598-2-5	
Correlated Colour Temperature (CCT)	4000K, 5800K	
Light Quality: CRI (Ra)	>80	
On/Off Switching	Unlimited	
Delay to full brightness	Instant	
Operating Voltage	220-240V AC	
Surge Voltage	IEC61000-4-5: 2000 V line-ground, 1000 V line-line	
Working temperature range	0 - 40°C	
IP Protection	IP20	
Risk of breakage	Vibration and shock resistant	

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX
Surface Mount Down Lights

Integrated surface mount adapter
Can be used as recessed fitting
Type A lighting - mimics sunlight
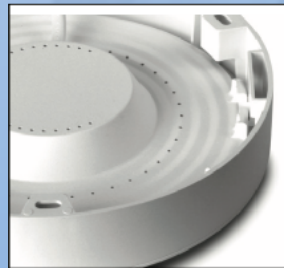
Ideal for:
- Retail
- Commercial lighting
- Shopping malls
- Corridors and passageways
- Office lighting
- Exhibition halls
- Schools, Colleges, Universities
- Dormitories
- Gyms

Integrated over temperature protection
Direct Drive Technology
IP20 rating

Available in the following size:
18W

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OrbitX

Lamp for Life Surface Mount Down Lights

Power Rating (220V-240V)	**18W**
Luminous Flux	**1440lm**
Beam angle	**120°**
Guarantee (24h/365d)	**5 Years**
Lifespan (L70) IES LM-80, TM-21	**12 years (8h/d, 5d/week) 6 years (12h/d, 7d/week) 25 000h**
Power saving compared to Metal Halide / Halogen	**>50%**
Light output compared to Metal Halide / Halogen	**>110%**
Luminous efficacy	**>80 lm/W**
Wi-Fi, barcode scanner, radio frequency interference	**IEC 61547,SANS 215 (CISPR15) compliant Very Low**
Power Factor	>0.95
Safety	IEC60598-1, IEC60598-2-5
Correlated Colour Temperature (CCT)	4000K
Light Quality: CRI (Ra)	>80
On/Off Switching	Unlimited
Delay to full brightness	Instant
Operating Voltage	220-240V AC
Surge Voltage	IEC61000-4-5: 2000 V line-ground, 1000 V line-line
Working temperature range	0 - 40°C
IP Protection	IP20
Risk of breakage	Vibration and shock resistant

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

Orbit**X**
GU10 Down Light

Recessed fitting - low glare
Type A lighting - mimics sunlight
Direct Drive Technology

Ideal for:
- **Retail**
- **Commercial lighting**
- **Shopping malls**
- **Corridors and passageways**
- **Office lighting**
- **Exhibition halls**
- **Schools, Colleges, Universities**
- **Dormitories**
- **Gyms**

Integrated over temperature protection
Non dimmable
Trim ring available separately

Available in the following size:
3.5W

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OrbitX
Lamp for Life GU10 Down Light

Power Rating (220V-240V)	**3.5W**
Luminous Flux	**227lm**
Beam angle	**38º**
Guarantee (24h/365d)	**5 Years**
Lifespan (L70) **IES LM-80, TM-21**	**20 years (8h/d, 5d/week)** **10 years (12h/d, 7d/week)** **40 000h**
Power saving compared to Metal Halide / Halogen	**>90%**
Light output compared to Metal Halide / Halogen	**>110%**
Luminous efficacy	**>65 lm/W**
Wi-Fi, barcode scanner, radio frequency interference	**IEC 61547,SANS 215 (CISPR15) compliant** **Very Low**
Power Factor	>0.90
Safety	IEC60598-1, IEC60598-2-5
Correlated Colour Temperature (CCT)	3000K 4000K
Light Quality: CRI (Ra)	>80
On/Off Switching	Unlimited
Delay to full brightness	Instant
Operating Voltage	220-240V AC
Surge Voltage	IEC61000-4-5: 2000 V line-ground, 1000 V line-line
Working temperature range	0 - 40°C
IP Protection	IP20
Risk of breakage	Vibration and shock resistant

Optional trim ring diameter	80mm
Optional trim ring cut diameter	70mm
Optional trim ring specification	Twist and lock, non-tilt

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

OrbitX
Lamp for Life Panel Lights

Recessed lay-in with very slim profile
Can be suspended or surface mounted
Type A lighting - mimics sunlight

Ideal for:
- Retail
- Commercial lighting
- Shopping malls
- Corridors and passageways
- Office lighting
- Exhibition halls
- Schools, Colleges, Universities
- Dormitories
- Gyms

Integrated over temperature protection
Direct Drive Technology
IP20 rating

Available in the following sizes:
1200x600   600x600

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OrbitX
Lamp for Life Panel Lights

Power Rating (220V-240V)	54W	40W
Luminous Flux	5400lm	4000lm
Size [mm]	1200 x 600	600 x 600
Beam angle	120º	
Guarantee (24h/365d)	5 Years	
Lifespan (L70) IES LM-80, TM-21	15 years (8h/d, 5d/week) 10 years (12h/d, 7d/week) 50 000h	
Power saving compared to Fluorescent	>50%	
Light output compared to Fluorescent	>110%	
Luminous efficacy	100 lm/W	
Power Factor	>0.9	
Safety	IEC60598-1, IEC60598-2-5	
Correlated Colour Temperature (CCT)	3800 - 4250K	
Light Quality: CRI (Ra)	>80	
On/Off Switching	Unlimited	
Delay to full brightness	Instant	
Operating Voltage	220-240V AC	
Working temperature range	0 - 40°C	
IP Protection	IP40	
Risk of breakage	Vibration and shock resistant	

Specifications ±10% at 230V. Generic values are estimated and typical for the particular technology

Spectrum Test Report
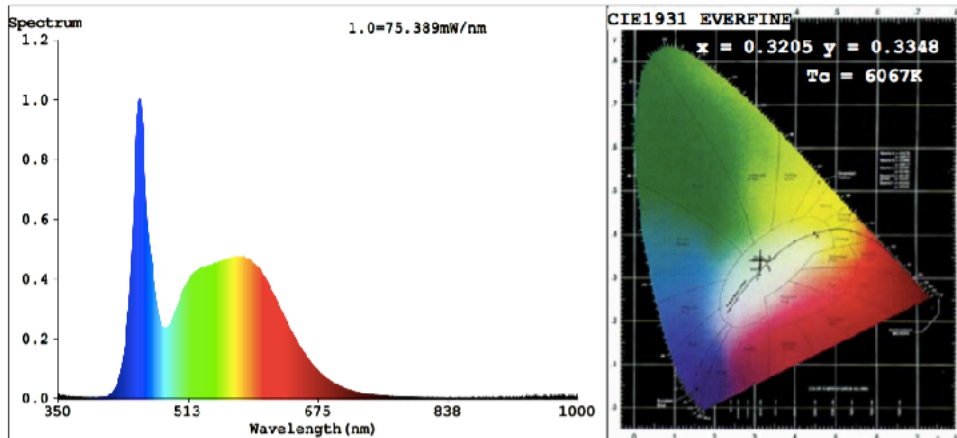
Color Parameters:

Chromaticity Coordinate:x=0.3205 y=0.3348/u'=0.2011 v'=0.4726

Tc=6067K(Duv=0.0023) Dominant WL:Ld =493.2nm Purity=4.2%

Red Ratio:R=15.3% Peak WL:Lp=451.9nm HWL:Lhd=21.8nm

Render Index:Ra=83.3

| R1 =82 | R2 =89 | R3 =92 | R4 =83 | R5 =82 | R6 =84 | R7 =87 | |
| R8 =68 | R9 =5 | R10=73 | R11=82 | R12=59 | R13=84 | R14=96 | R15=77 |

Photo Parameters:

Flux = 2296 lm   Eff. : 111.21 lm/W Fe = 7.331 W

Electrical parameters:

V = 231.7 V   I = 0.09235 A   P = 20.64 W PF = 0.9649

LEVEL:OUT   WHITE:ANSI_6500K

Status: Integral T = 194 ms Ip = 55619 (85%)

Model:
Tester:
Temperature:25.Deg

OrbitX
Life Cycle Cost Comparison

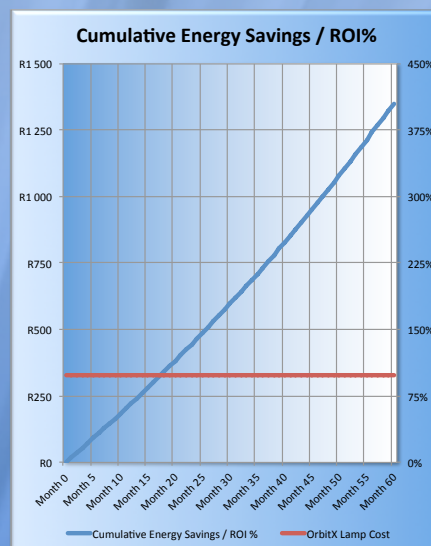|	OrbitX Retrofit	Leading Brand LED	Budget LED	T5 Fluorescent	T8 Fluorescent
Evaluation period [years]	4y	4y	4y	4y	4y
Guarantee / Proven lifetime	8y	2y	1y	4y	3y
Purchase Cost	R235	R145	R59	R35	R30
Labour for first installation	R38	R78	R78	R25	R25
Electricity cost per year*	R95	R115	R185	R151	R194
Lamp Replacement + Labour Cost		R340	R336	R60	R55
Lamp Disposal				R40	R40
Ballast Replacement Cost				R290	R290
Total Cost over 4 years per Lamp	**R654**	**R1024**	**R1211**	**R1053**	**R1215**
% Lifecycle Cost Compared to OrbitX over 4 years	**100%**	**157%**	**185%**	**161%**	**186%**

* Calculated at 9.5h*5+5h=52.5h operating hours per week; R1.69/kVAh; power factor taken into account (Budget LEDs have a very poor power factor).

Payback and ROI calculation

Assumptions:
Lamp cost + installation	R328
Electricity price (current)	R1.69/kWh
Electricity price escalation	10% per y
Light operating hours	12h/d

Payback period — **17 months**
ROI after 60 months — **411%**

Cumulative Energy Savings / ROI%

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OrbitX
Luminaires

Standard Luminaires

1200mm (4ft) LED Tube Open Channel Fitting | SINGLE
1200mm (4ft) LED Tube Open Channel Fitting | DOUBLE
1500mm (5ft) LED Tube Open Channel Fitting | SINGLE
1500mm (5ft) LED Tube Open Channel Fitting | DOUBLE

1200mm (4ft) LED Tube Vapour Proof IP65 Fitting | SINGLE
1200mm (4ft) LED Tube Vapour Proof IP65 Fitting | DOUBLE
1500mm (5ft) LED Tube Vapour Proof IP65 Fitting | SINGLE
1500mm (5ft) LED Tube Vapour Proof IP65 Fitting | DOUBLE

600x600mm Recessed Grill Plate LED Tube Fitting (3 tube)
600x600mm Recessed Prismatic LED Tube Fitting (3 tube)
1200x600mm Recessed Grill Plate LED Tube Fitting (3 tube)
1200x600mm Recessed Prismatic LED Tube Fitting (3 tube)
1200x600mm Recessed Grill Plate LED Tube Fitting (4 tube)
1200x600mm Recessed Prismatic LED Tube Fitting (4 tube)

All luminaires are LED-ready and SABS certified

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OrbitX
Direct Drive LED

OrbitX Direct Drive technology eliminates the need for a traditional LED driver board. The following benefits are associated with OrbitX Direct Drive LED lights.

- Lower component count reduces potential failure modes and increases lifespan. A guarantee of 8 years (5 years light output) is standard on OrbitX Direct Drive LED lights.

- The reliability and predictability of the lifespan of the driver is a significant advantage in reducing risk of failure under warranty. A further risk mitigating factor is the voltage spike protection that is designed for South African and African power system conditions.

- Without a driver, the LEDs are mounted much lower in the housing, resulting in a much wider angle of luminance (200°).

- The design of the OrbitX Direct Drive LED light inherently emits very low levels of radio frequencies. Inductors and transformers are eliminated and no high frequency PWM switching is required. Traditional LED drivers require extensive EMI/EMC engineering to reduce radio frequency interference, which is often neglected to achieve acceptable cost factors. This results in poor FM and VHF radio reception in the vicinity of LED lights. Barcode scanners, RFIDs and two-way radio systems may also be impacted in commercial and industrial environments. OrbitX Direct Drive LED lights comply with the IEC EMI/EMC standards and have no significant impact on radio systems.

- Very low total harmonic distortion.

- Efficacy of 100-110 lumens per Watt

- The heat sink is totally enclosed in the polycarbonate outer housing, which eliminates any risk of electric exposure to the end user.

- OrbitX Direct Drive LED lights are constructed from polycarbonate that carries a V0 ULP fire rating. This means it will not allow flaming droplets to form, should it be involved in a fire. Most other LED tube lights carry a V2 fire rating, which allows flaming droplets.

- OrbitX Direct Drive LED lights are serviceable – the driver and LEDs are easily replaceable.

- OrbitX Direct Drive LED lights are cost effective when replacing traditional metal-halide, mercury-vapour, high pressure sodium, halogen, fluorescent and incandescent lights, and as a new installation, offers replaceability at the end of the LED lifetime.

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OrbitX
Direct Drive Guarantee

OrbitX provides the following guarantee, which extends to the purchaser of the OrbitX product who purchased directly from OrbitX or from an authorised OrbitX reseller.

Please note that any guarantee services or questions must be accompanied by the invoice number from the transaction through which the guaranteed product was purchased and the serial number of the product, as found on the product label. The invoice number serves as your guarantee number and must be retained. OrbitX will offer no guarantee service without this number.

OrbitX guarantees that its products and their parts are free of defects in materials or workmanship from the original ship date for the following duration:

• OrbitX Direct Drive LED Tube Lamps: 8 years

• OrbitX Direct Drive Neptune Integrated LED Luminaires: 8 years

• OrbitX Direct Drive Europa LED Tube Lamps: 5 years

• OrbitX Direct Drive Titan Integrated LED Luminaires: 5 years

• Luminaires supplied by third parties: as per third party guarantee

• Battery backup solutions supplied by third parties: as per third party guarantee.

Furthermore, OrbitX guarantees that the total light output per lamp will remain higher or equal to 70% of the light output stated on the original OrbitX invoice for the following duration:

• OrbitX Direct Drive LED Tube Lamps: 5 years

• OrbitX Direct Drive Neptune Integrated LED Luminaires: 5 years

• OrbitX Direct Drive Europa LED Tube Lamps: 3 years

• OrbitX Direct Drive Titan Integrated LED Luminaires: 3 years.

During these periods, OrbitX will repair or replace defective parts with new or reconditioned parts at OrbitX's option, without charge to the purchaser.

Shipping fees incurred from returns for under-guarantee service in the first 60 days will be paid by OrbitX. All shipping fees both to and from OrbitX following this 60-day period must be paid by the customer.

All original parts replaced by OrbitX or its authorised service centre, become the property of OrbitX. Any after-market additions or modifications will invalidate the OrbitX guarantee. The Purchaser is responsible for the removal and reinstallation of faulty products and the associated costs.

OrbitX makes no other guarantee or warranty, either express or implied, including but not limited to implied warranties of merchantability, fitness for a particular purpose, or conformity to any representation or description, with respect to OrbitX products other than as set forth herein.

Except as provided herein, OrbitX is not liable for any loss, cost, expense, inconvenience or damage that may result from use or inability to use an OrbitX product, including, but not limited to, commercial losses, business interruption, injuries and fatalities. Under no circumstances shall OrbitX be liable for any loss, cost, expense, inconvenience or damage exceeding the purchase price paid to OrbitX of the original OrbitX product. In no event shall OrbitX be liable for costs of procurement of substitute goods by the purchaser or for unauthorised repairs undertaken by the purchaser.

The guarantee and remedies set forth herein are exclusive and in lieu of all others, oral or written, expressed or implied. No reseller, agent or employee is authorised to make any modification, extension or addition to this guarantee.

This guarantee shall not apply to any damages caused as a result of force majeure, misuse or improper use of the products, faulty installation, poor electrical connections or negligence by any party other than OrbitX. In addition, this guarantee is not applicable to any OrbitX product improperly shipped, stored, installed, operated, and used, including, inter alia, shipping, storage, installation, operation and use otherwise than in accordance with one or more of the following: OrbitX specifications, including for maximum operating temperature; installation and operating instructions, wiring diagrams and guidelines; poor or loose connections, or faulty lamp holders.

This warranty does not cover any peripheral devices, pc boards or any other components not installed and supplied by OrbitX. OrbitX products are supplied with integrated voltage spike arresting circuitry designed to withstand surges up to 1500V. Despite OrbitX's best efforts to protect its products against poor electricity supply, the guarantee is invalidated if the electricity supply to the product does not conform to the latest version of NRS048 (available from the SABS) or if the circuit supplying the product does not comply to SABS electrical wiring standards.

Moreover, this guarantee shall not apply if the unit was subjected to abnormal stresses or operating conditions or the purchaser is in arrears to OrbitX.

Notwithstanding principles of conflicts of law of any jurisdiction to the contrary, all terms and provisions of this agreement are to be construed and governed according to South African law.

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