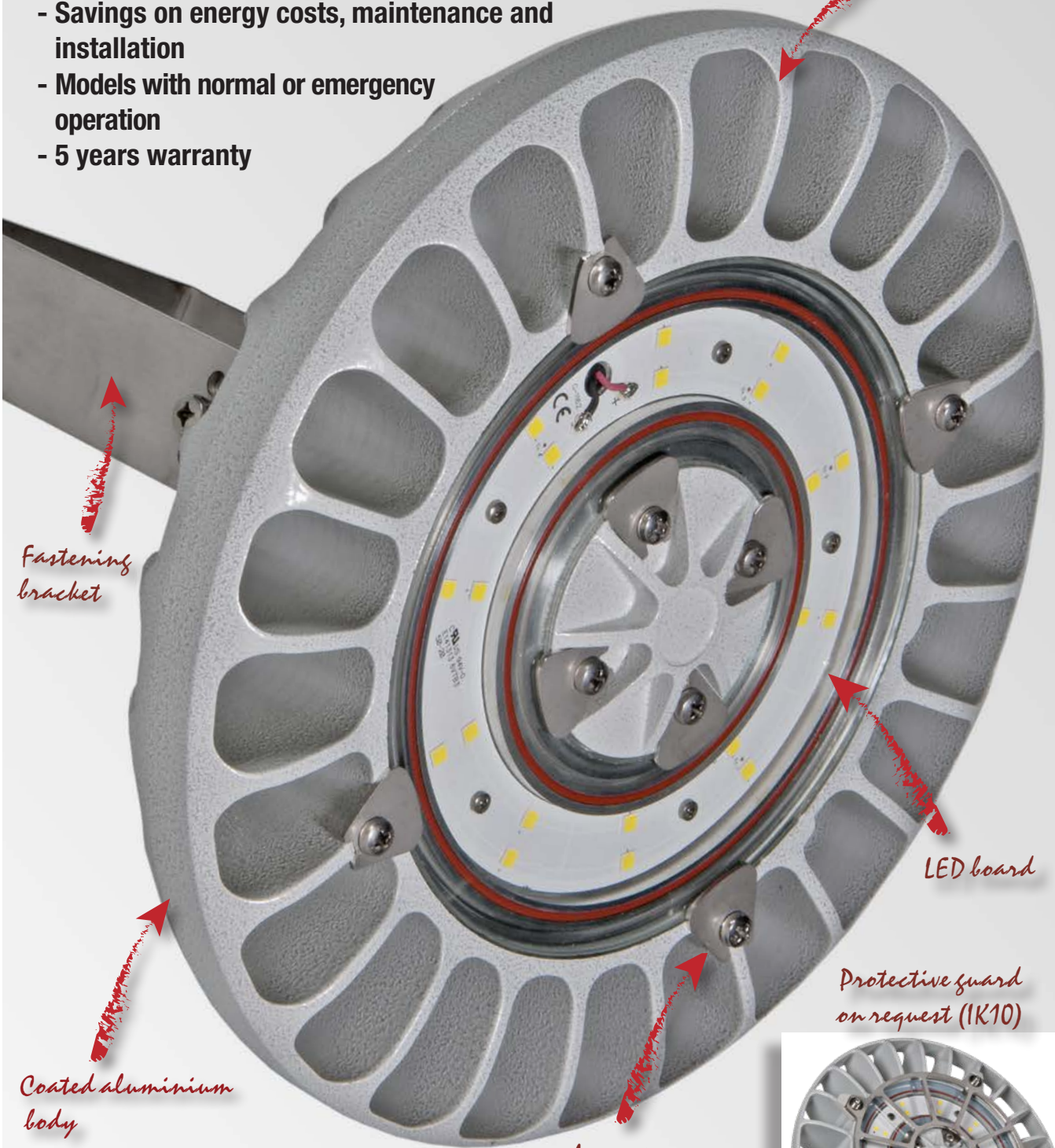
flowex

PATENTED

- Zone 1, 2, 21, 22
- Replaces traditional discharge lamps up to 400W
- Savings on energy costs, maintenance and installation
- Models with normal or emergency operation
- 5 years warranty



FLOWEX series High Bay LED lighting fixtures

FlowEx series lighting fixtures represent the most recent evolution of low-bay and high-bay LED lighting for environments with potentially explosive atmospheres.
The FlowEx series is made up of three lamp body sizes and is the LED alternative for all those areas where it was customary for low and medium power discharge lighting fixtures up to 400W to be installed.
The design of the finned body, made of aluminium alloy, acts as an excellent heat sink for the LED board, allowing fast and effective dissipation of the heat generated during normal operation of the LEDs themselves. Furthermore, the geometric structure of the cooling fins is designed to minimise the deposits of combustible dust and allow air or water present in the surrounding area to self-clean the lighting fixture.
Based on the principles of Lean manufacturing, the design resulted in a lighting fixture that is light and easy to install, yet robust and durable at the same time.
They feature a high-quality die-cast aluminium body and a glass diffuser which is resistant to impact and high temperatures.
Available in different sizes and with a wide range of voltage and power features, the FlowEx series is optimally designed and certified for the area of installation.
The use of LED dual-die technology and high-power LED boards provides a lumen output from 4.800 lm to 28.000 lm, making the range highly efficient and long lasting in terms of its electronics and lighting technology.

Sectors of application:



Petroleum refineries | Chemical and petrochemical facilities | Anti-light pollution | Offshore facilities | Onshore facilities | Perimeter zone lighting | Petroleum loading/unloading pontoons | 100% produced by Cortem

CERTIFICATE DATA

Classification:	Group II	Category 2GD/3G	
Installation: EN 60079.14	zone 1, 2, 21, 22 *FLOWEX-ME*	zone 2, 21, 22 *FLOWEX-MN*	
Marking:	CE 0722 Ex II 2GD - Ex db eb mb IIC T.. Gb - Ex tb IIIC T..°C Db - IP66		*FLOWEX-ME*
	CE Ex II 3G - Ex nR IIC T.. Gc CE 0722 Ex II 2D - Ex tb IIIC T..°C Db - IP66		*FLOWEX-MN*
Certificate:	ATEX CML 21 ATEX 3606X		*FLOWEX-ME*
	ATEX CML 21 ATEX 4607X ATEX CML 21 ATEX 3610X		*FLOWEX-MN*
	IEC Ex CML 21.0070X		For all IEC Ex, UKEX, INMETRO certification data, download the certificate from www.cortemgroup.com
	UKEX, ECASEx, INMETRO AVAILABLE		
	UL PENDING		
Standards:	CENELEC EN60079-0: 2018, EN60079-1:2014, EN60079-7: 2015+A1:2018, EN60079-15: 2015/ 2019, EN60079-18: 2015+A1:2017, EN60079-31: 2024 and EUROPEAN DIRECTIVE 2014/34/EU. IEC60079-0: 2017, IEC60079-1: 2014, IEC60079-7: 2017, IEC60079-15: 2017, IEC 60079-18: 2017, IEC60079-31: 2022		
Temperature class:	For all permitted ambient temperature classes, please see the "Selection tables"		
Ambient temperature:	-60°C +60°C Esempio cod. FLOWEX-ME-080070		For all permitted ambient temperature ranges, please see the "Selection tables"
	-20°C for battery versions		
Degree of protection:	IP66		

FLOWEX series High Bay LED lighting fixtures

ORIGINAL PRODUCT



FastEx on request

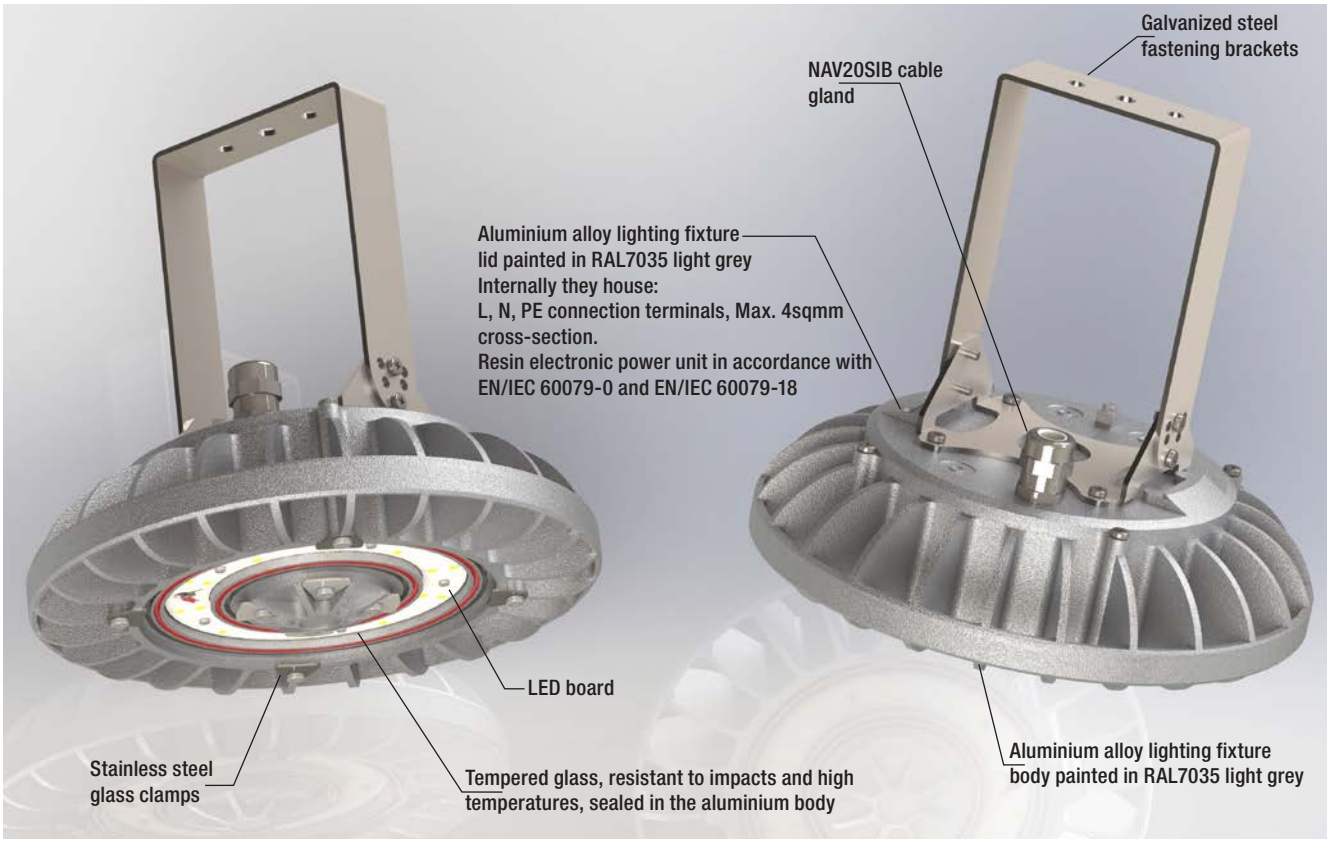
For more information on electrical connectors

NO PHOTOBIOLOGICAL RISK (IEC / EN 62471 STANDARD)

MECHANICAL FEATURES

Body:	Aluminium alloy with low copper content. With cooling fins for high levels of heat dissipation
Front glass:	Tempered glass, resistant to high temperatures and knocks
Seals:	Silicone resistant to acids, hydrocarbons and high temperatures
Fastening bracket:	Galvanized steel
Screws:	Stainless steel
Entry points:	Standard version with 1 hole Ø20 complete with 1 NAV20SIB. For the other versions, cable glands are on request
Coating:	Polyester RAL 7035 (Light grey)
Corrosion Resistance:	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by the Standard EN60068-2-30 (hot-humid cycles) and EN60068-2-11 (salt fog test)

FLOWEX-080 LIGHTING FIXTURE IN DETAIL

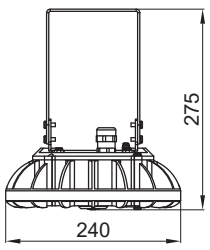


FLOWEX series selection table

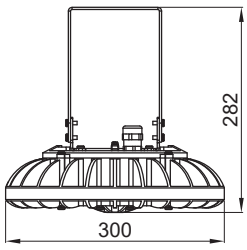
	Code	Real power Watt	Rated power Watt	Temperature class / Maximum surface temperature TA=+40°C	TA=+50°C	TA=+55°C	TA=+60°C	Lumen lm	Light intensity cd	Overall efficiency Lm/W	Weight kg	mm
Zone 1, 2, 21, 22	FLOWEX-ME-060030	32,8	30	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	4785	1700	146	3,2	285x245x135
	FLOWEX-ME-060040	38,8	40	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	5531	1966	143	3,2	285x245x135
	FLOWEX-ME-060050	46,7	50	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	6389	2273	137	3,2	285x245x135
	FLOWEX-ME-060060	55,6	60	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	7285	2592	131	3,2	285x245x135
	FLOWEX-ME-080070	69,1	70	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	9547	3438	138	4,2	305x305x140
	FLOWEX-ME-080080	79,4	80	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	10646	3834	134	4,2	305x305x140
	FLOWEX-ME-080090	89,2	90	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	11641	4197	129	4,2	305x305x140
	FLOWEX-ME-080100	101,7	100	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	12708	4582	125	4,2	305x305x140
	FLOWEX-ME-100120	117,0	120	T6 / 74°C	T5 / 84°C	T5 / 89°C	T4 / 94°C	17687	6221	151	7,8	405x405x145
	FLOWEX-ME-100140	136,5	140	T6 / 74°C	T5 / 84°C	T5 / 89°C	T4 / 94°C	20154	7086	148	7,8	405x405x145
	FLOWEX-ME-100160	156,6	160	T6 / 74°C	T5 / 84°C	T5 / 89°C	T4 / 94°C	22422	7882	143	7,8	405x405x145
	FLOWEX-ME-100180	173,6	180	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	24218	8513	140	7,8	405x405x145
	FLOWEX-ME-100200	190,1	200	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	25709	9040	135	7,8	405x405x145
	FLOWEX-ME-100220	214,2	220	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	27961	9837	131	7,8	405x405x145
Zone 2, 21, 22	FLOWEX-MN-060030	32,8	30	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	4784	1700	146	3,2	285x245x135
	FLOWEX-MN-060040	38,8	40	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	5531	1966	143	3,2	285x245x135
	FLOWEX-MN-060050	46,7	50	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	6389	2273	137	3,2	285x245x135
	FLOWEX-MN-060060	55,6	60	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	7285	2592	131	3,2	285x245x135
	FLOWEX-MN-080070	69,1	70	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	9547	3438	138	4,2	305x305x140
	FLOWEX-MN-080080	79,4	80	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	10646	3834	134	4,2	305x305x140
	FLOWEX-MN-080090	89,2	90	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	11641	4197	129	4,2	305x305x140
	FLOWEX-MN-080100	101,7	100	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	12708	4582	125	4,2	305x305x140
	FLOWEX-MN-100120	117,0	120	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	17687	6221	151	7,8	405x405x145
	FLOWEX-MN-100140	136,5	140	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	20154	7086	148	7,8	405x405x145
	FLOWEX-MN-100160	156,6	160	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	22422	7882	143	7,8	405x405x145
	FLOWEX-MN-100180	173,6	180	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	24218	8513	140	7,8	405x405x145
	FLOWEX-MN-100200	190,1	200	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	25709	9040	135	7,8	405x405x145
	FLOWEX-MN-100220	214,2	220	T5 / 85°C	T5 / 95°C	T4 / 100°C	T4 / 105°C	27961	9837	131	7,8	405x405x145

Dimensional drawings

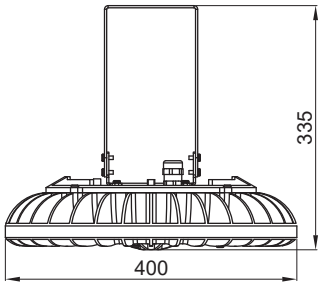
FLOWEX-..-060...



FLOWEX-..-080...



FLOWEX-..-100...



Dimensions in mm

FLOWEX series High Bay LED lighting fixtures

Electrical features	FLOWEX-..060..	FLOWEX-..080..	FLOWEX-..100..
Supply voltage:	120-277 Vac	120-277 Vac	100-277 Vac
Rated frequency:	50-60 Hz ±5%	50-60 Hz ±5%	50-60 Hz ±5%
Rated power consumption* :	**..030** 30 W **..040** 40 W **..050** 50 W **..060** 60 W - -	**..070** 70 W **..080** 80 W **..090** 90 W **..100** 100 W - -	**..120** 120 W **..140** 140 W **..160** 160 W **..180** 180 W **..200** 200 W **..220** 220 W
Connection:	Cable entry directly to the terminal board L, N, PE. Max. 4 sq mm cross-section		
Power factor:	>0.95	>0.95	>0.95
Rated current:	**..030** 150 mA **..040** 180 mA **..050** 210 mA **..060** 250 mA - -	**..070** 310 mA **..080** 360 mA **..090** 400 mA **..100** 450 mA - -	**..120** 540 mA **..140** 620 mA **..160** 700 mA **..180** 770 mA **..200** 840 mA **..220** 950 mA
EMC (Electromagnetic Compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3		
THD (Total Harmonic Distortion):	<8% (230 Vac)		
Over-voltage protection:	4 kV	4 kV	4 kV
Driver performance levels:	Over-Voltage Protection, Over-Current Protection, Short-Circuit Protection		
Dimming (on request only in the ..- MN version):	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor	(0-10 V) or PWM or resistor
Photometric features			
Multichip LED:	High power LED	High power LED	High power LED
Viewing angle:	120°	120°	120°
Colour temperature:	5000 K	5000 K	5000 K
CRI:	>70	>70	>70
Instant Restrike:	YES	YES	YES
L90:	> 60000 h	> 60000 h	> 60000 h

** Test performed at 230 Vac*

ORDER CODE LOGIC

FLOWEX-M ☐☐☐☐ - ☐☐☐ - ☐☐

FLOWEX-M Fixed code

E Zone 1,2,21,22
N Zone 2,21,22

060 Dimensions for 30W, 40W, 50W, 60W
080 Dimensions for 70W, 80W, 90W, 100W
100 Dimensions for 120W, 140W, 160W, 180W, 200W, 220W

gr.060

030	30W	4785lm
040	40W	5531lm
050	50W	6389lm
060	60W	7285lm

gr.080

070	70W	9547lm
080	80W	10646lm
090	90W	11641lm
100	100W	12708lm

gr.100

120	120W	17687lm
140	140W	20154lm
160	160W	22422lm
180	180W	24218lm
200	200W	25709lm
220	220W	27961lm

n.a. Normal
N Normal + emergency
E Only emergency

n.a. No dimmable
D Dimmable
DALI Dimming DALI

n.a. 1 hole Ø20,5 (with cablegland)
B 2 holes Ø20,5 (suitable for in-out)
C 1 hole Ø25,5
F 2 holes Ø25,5 (suitable for in-out)

n.a. Painted RAL7035
NP Not painted

/C For ambient temperature -60°C
n.a. For ambient temperature -40°C (or -20°C with batteries)

ACCESSORIES UPON REQUEST / SPECIAL REQUESTS

Different rated voltages
DALI dimming compliant with IEC62386-101 (2.0 version) and IEC62386-207 (1.0 version) standards
Additional U-bolts for assembly to a pole
Eye bolt
Special lid for direct installation on pole (code example FLOWEX-ME-080080-**T**)
Threaded pole attachment with fixed 25° orientation (code example FLOWEX-ME-080080-**IX**)
Fastening brackets in stainless steel AISI 304 or AISI 3016L
Protective guard in stainless steel AISI 304 for impact resistance IK10 (only for FLOWEX-ME..)

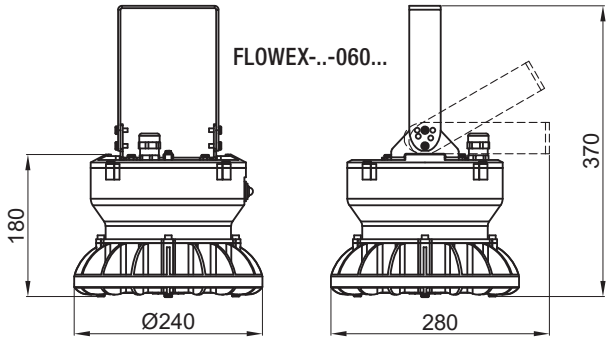
FLOWEX series lighting fixtures with emergency operation

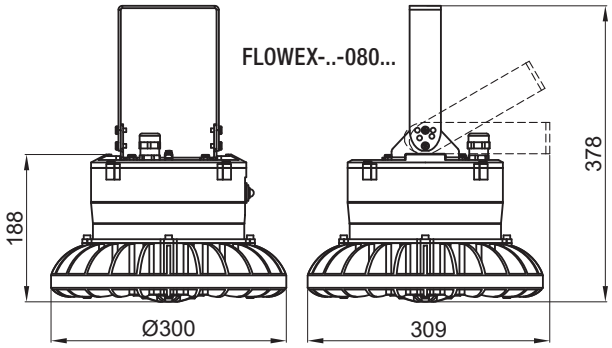




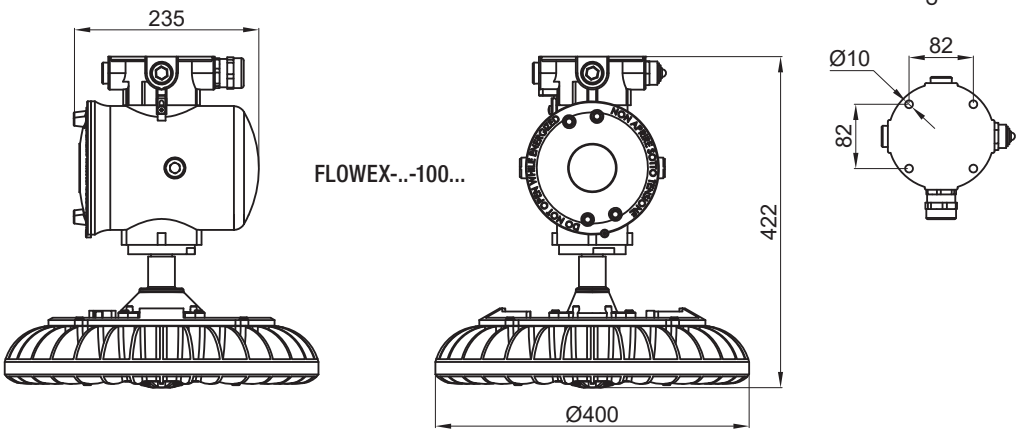
The FLOWEX-M...E and FLOWEX-M...N models are equipped with an additional aluminum housing that contains the emergency battery, allowing the device to operate as a self-contained emergency lighting system.
The FLOWEX-M...E versions, identifiable by the code ending with "E" (for example, FLOWEX-ME-080100-E), are designed to operate exclusively in emergency mode.
The FLOWEX-M...N versions, with a code ending with "N" (for example, FLOWEX-MN-080100-N), can operate in both normal and emergency modes.

Dimensional drawings





Fixing detail



Dimensions in mm

FLOWEX series selection table with emergency operation

Normal operation + emergency

	Code	Real power Watt	Rated power Watt	Temperature class / Maximum surface temperature TA=+40°C	TA=+50°C	TA=+55°C	TA=+60°C	Lumen in normal operation lm	Lumen in emergency lm	Discharge time in minutes	Weight kg	mm
Zone 1, 2, 21, 22	FLOWEX-ME-060030N	32,8	30	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	4785	1822lm / 90min (HP) 1081lm / 180min (LP) *		5	285x245x135
	FLOWEX-ME-080070N	69,1	70	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	9547			6	305x305x140
	FLOWEX-ME-100120N	117,0	120	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	17687			10	405x405x145
	FLOWEX-ME-100200N	190,1	200	T5 / 85°C	T5 / 95°C	T4 / 100°C	-	25709			10	405x405x145

Normal operation + emergency

	Code	Real power Watt	Rated power Watt	Temperature class / Maximum surface temperature TA=+40°C	TA=+50°C	TA=+55°C	TA=+60°C	Lumen in normal operation lm	Lumen in emergency lm	Discharge time in minutes	Weight kg	mm
Zone 2, 21, 22	FLOWEX-MN-060030N	32,8	30	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	4785	1822lm / 90min (HP) 1081lm / 180min (LP) *		5	285x245x135
	FLOWEX-MN-080070N	69,1	70	T5 / 86°C	T4 / 96°C	T4 / 101°C	T4 / 106°C	9547			6	305x305x140
	FLOWEX-MN-100120N	117,0	120	T6 / 74°C	T5 / 84°C	T5 / 89°C	T5 / 94°C	17687			10	405x405x145
	FLOWEX-MN-100200N	190,1	200	T5 / 85°C	T5 / 95°C	T4 / 100°C	-	25709			10	405x405x145

Emergency operation only

Code	Real power Watt	Rated power Watt	Temperature class / Maximum surface temperature TA=+40°C	TA=+50°C	TA=+55°C	TA=+60°C	Lumen lm *	Discharge time in minutes	Peso kg	mm
FLOWEX-ME-060030E FLOWEX-MN-060030E	5	5	T6 / 73°C	T5 / 83°C	T5 / 88°C	T5 / 93°C	1822lm / 90min (HP) 1081lm / 180min (LP)*		4	285x245x135

* High Power mode (HV) or Low Power mode (LP) can be set during luminaire installation – See instruction.

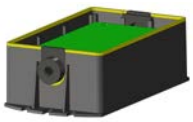
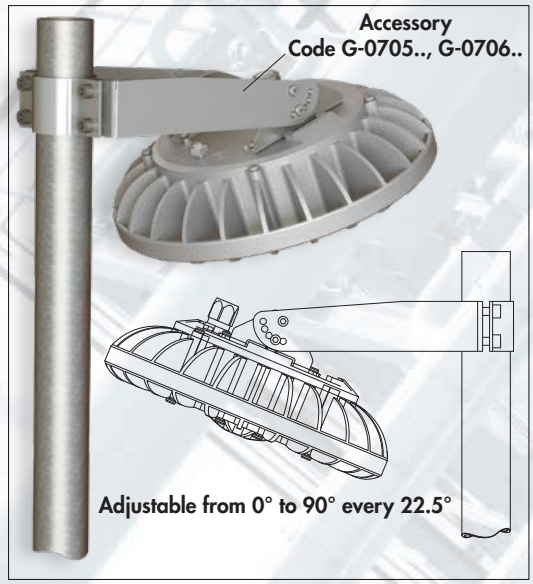
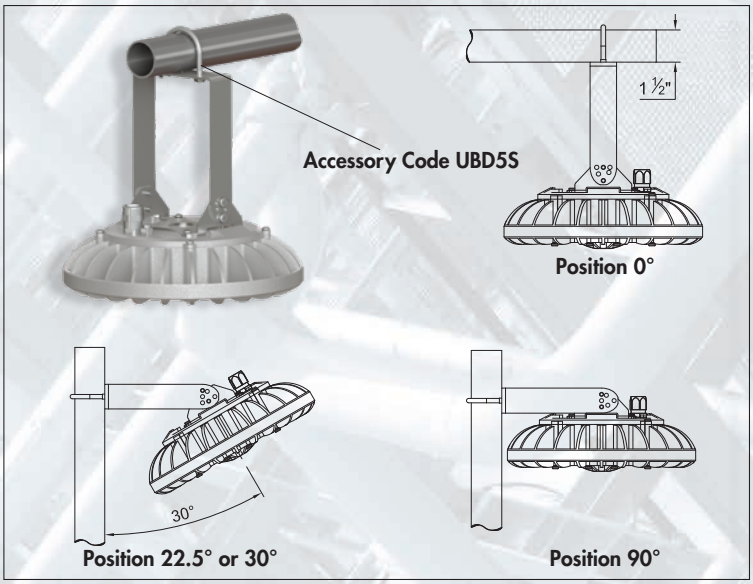
ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Resin emergency module	FLOWEX-ME-...N		EIM-30C/NC	SPARE PART
	Battery unit	FLOWEX-ME-...N FLOWEX-MN-...N	6V NiCd	G-1423/Q	SPARE PART
	Non-resin emergency module	FLOWEX-MN-...N		INVERTER/LED/NC/C	SPARE PART
	Electronic power unit	FLOWEX-ME-060030..	100-277 Vac	EBM-50C/850	SPARE PART
		FLOWEX-ME-060040..		EBM-50C/1000	
		FLOWEX-ME-060050..		EBM-50C/1200	
		FLOWEX-ME-060060..		EBM-50C/1400	
		FLOWEX-ME-080070..		EBM-100C/560	
		FLOWEX-ME-080080..		EBM-100C/640	
		FLOWEX-ME-080090..		EBM-100C/700	
		FLOWEX-ME-080100..		EBM-100C/800	
		FLOWEX-ME-100120..		EBM-240C/790	
		FLOWEX-ME-100140..		EBM-240C/920	
		FLOWEX-ME-100160..		EBM-240C/1050	
		FLOWEX-ME-100180..		EBM-240C/1150	
		FLOWEX-ME-100200..		EBM-240C/1250	
		FLOWEX-ME-100220..		EBM-240C/1400	

ILLUSTRATION	DESCRIPTION	MODEL	FEATURES	CODE	KEY
	Electronic power unit	FLOWEX-MN-060030	100-277 Vac	**LEDDEVL060/2/1**	SPARE PART
		FLOWEX-MN-060040		**LEDDEVL060/2**	
		FLOWEX-MN-060050		**LEDDEVL060/2/3**	
		FLOWEX-MN-060060		**LEDDEVL060/2/4**	
		FLOWEX-MN-080070		**LEDDEVL080/4/5**	
		FLOWEX-MN-080080		**LEDDEVL080/4/6**	
		FLOWEX-MN-080090		**LEDDEVL080/4**	
		FLOWEX-MN-080100		**LEDDEVL080/4/7**	
		FLOWEX-MN-100120		**LEDDEVL100/1/6**	
		FLOWEX-MN-100140		**LEDDEVL100/1/7**	
		FLOWEX-MN-100160		**LEDDEVL100/1/8**	
		FLOWEX-MN-100180		**LEDDEVL100/1/9**	
		FLOWEX-MN-100200		**LEDDEVL100/1/1**	
		FLOWEX-MN-100220		**LEDDEVL100/1**	
	U-bolt for assembly on a pole	Per pali Ø1 1/2"	Material: stainless steel AISI 316L	**UBD5S**	ACCESSORY SPARE PART
	Adjustable pole fixing bracket for Ø1 1/2" poles and Ø2 1/2"	FLOWEX-...060.. FLOWEX-...080..	Galvanized steel	Ø1 1/2" **G-0705**	ACCESSORY SPARE PART
				Ø2 1/2" **G-0723**	
		FLOWEX-...100..		Ø1 1/2" **G-0706**	
				Ø2 1/2" **G-0722**	
		FLOWEX-...060.. FLOWEX-...080..	Stainless steel AISI 304	Ø1 1/2" **G-0705IN**	
				Ø2 1/2" **G-0723IN**	
		FLOWEX-...100..		Ø1 1/2" **G-0706IN**	
				Ø2 1/2" **G-0722IN**	
		FLOWEX-...060.. FLOWEX-...080..	Stainless steel AISI 316L	Ø1 1/2" **G-0705A4**	
				Ø2 1/2" **G-0723A4**	
		FLOWEX-...100..		Ø1 1/2" **G-0706A4**	
				Ø2 1/2" **G-0722A4**	
	Fastening adjustable bracket	FLOWEX-...060.. FLOWEX-...080..	Stainless steel AISI 304	**G-1262IN**	SPARE PART
			Stainless steel AISI 316L	**G-1262A4**	
		FLOWEX-...100..	Stainless steel AISI 304	**G-1263IN**	
			Stainless steel AISI 316L	**G-1263A4**	
	Protective guard	FLOWEX-ME-060..	Stainless steel AISI 304	**G-0728**	ACCESSORY SPARE PART
		FLOWEX-ME-080..		**G-0729**	
		FLOWEX-ME-100..		**G-0730**	

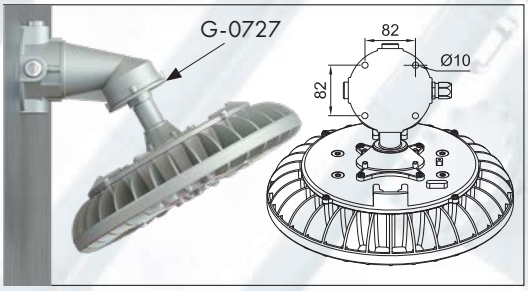
Typical assemblies with installation accessories



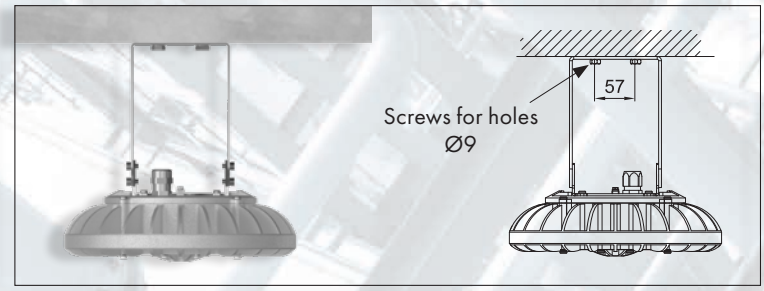
Pole mount mechanism with adjustable bracket



Assembly on 1 1/2" conduit pipe with UBD



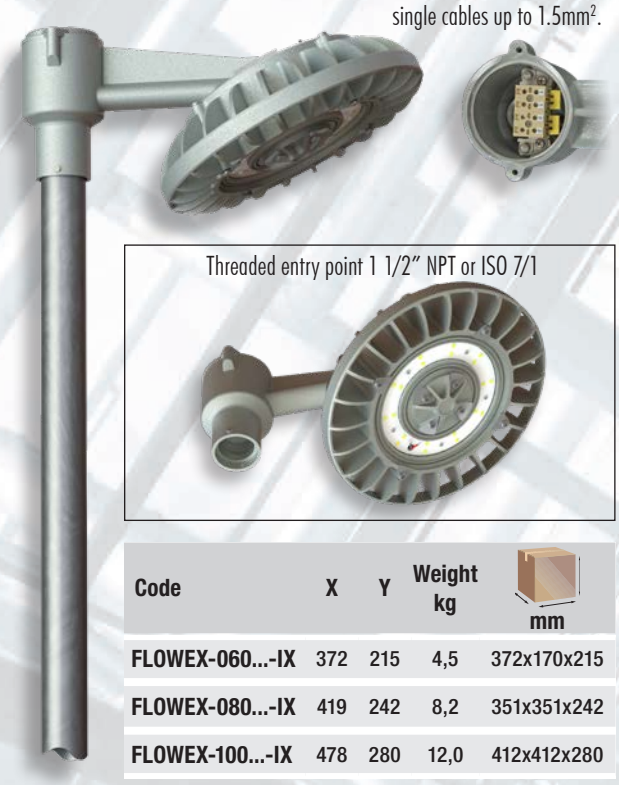
Use example of accessories with ISO M80x2 thread with adapter **G-0727** (example of use with fixed bracket inclined at 30°)



Ceiling mount, tall model TYPE "U"

STANCHION MOUNTING WITH FIXED ORIENTATION AT 25°

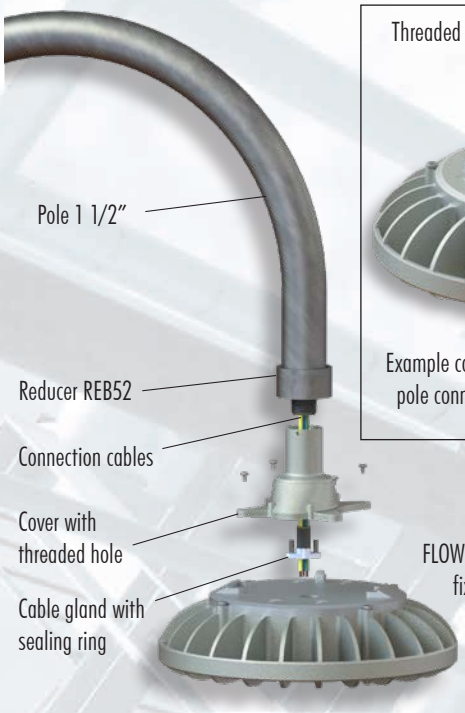
Direct connection to terminal board L, N, Pe. Posible section 1.5mm² for loop-in/loop-out. Input of 3 single cables up to 4mm², input-output with 6 single cables up to 1.5mm².



Threaded entry point 1 1/2" NPT or ISO 7/1

DIRECT POLE ATTACHMENT SYSTEM

Lighting fixture prearranged for direct installation on pole



Example FLOWEX-ME-080080-T lighting fixture installed on pole

Threaded 3/4" entry point NPT or ISO 7/1

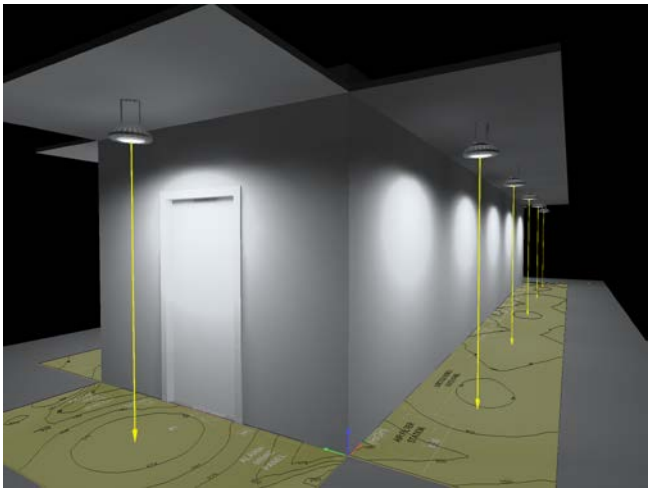


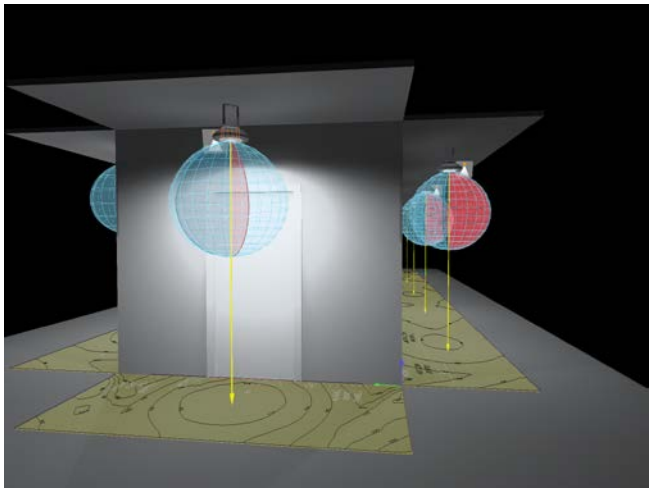
Example code for lighting fixture with direct pole connection FLOWEX-ME-080080-**T**

Code	X	Y	Weight kg	mm
FLOWEX-060...-IX	372	215	4,5	372x170x215
FLOWEX-080...-IX	419	242	8,2	351x351x242
FLOWEX-100...-IX	478	280	12,0	412x412x280

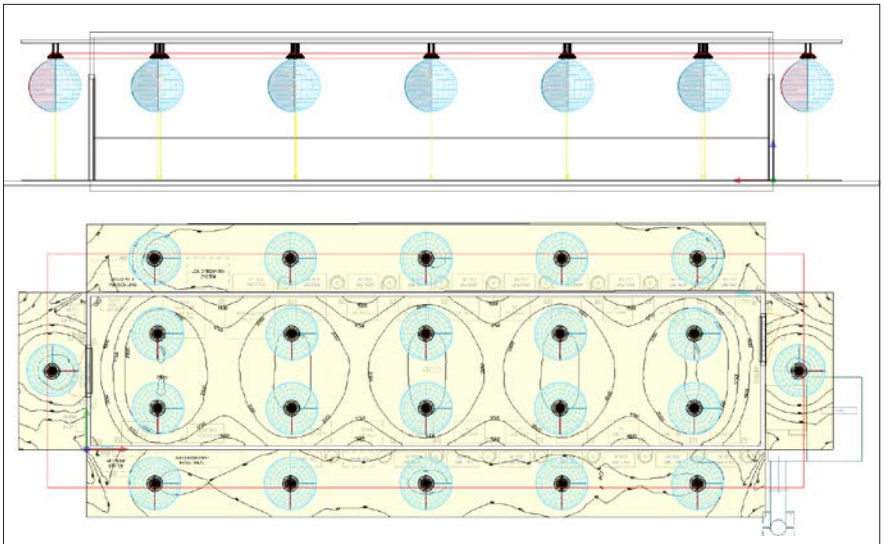
Photometric study example

FLOWEX series ceiling-mounted lighting fixtures

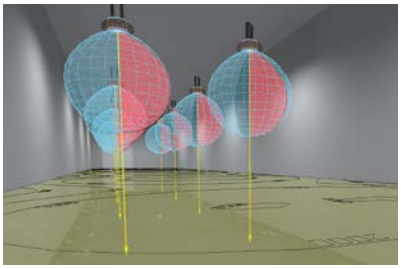


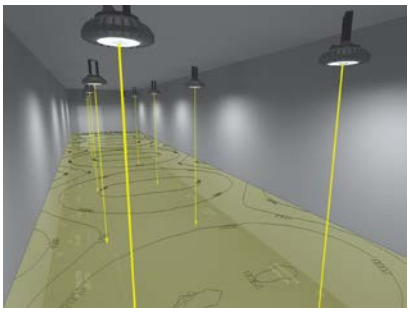


Representation of an outdoor installation - perimeter lighting on 13m and 3m lengths



Equidistant, even-height arrangement for uniformity of light both inside and outside the structure.



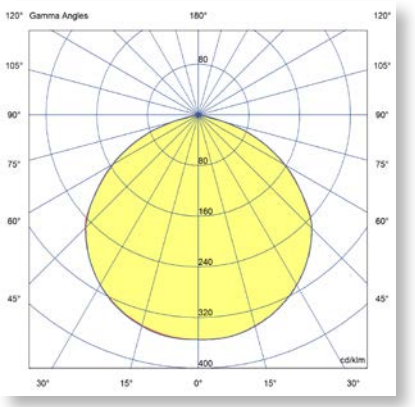


Representation of an indoor installation - room height 2.7m, worktop height 0.8m

List of lighting fixture power used

Φtotal	Ptotal	Efficiency
114222 lm	793.6 W	143.9 lm/W

	Pc.	Item	P	Φ	Efficiency
Internal area	10	FLOWEX...060030	32.8 W	4785 lm	145.9 lm/W
External area	12	FLOWEX...060040	38.8 W	5531 lm	142.5 lm/W



The lighting solution files for the design, planning and simulation of lighting levels in 2D-3D, rendering and ray-tracing are available from www.cortemgroup.com.

= level 90270

= level 0180