

NACTUS



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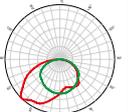
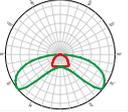
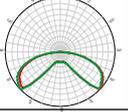
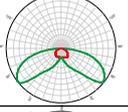
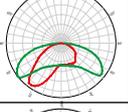
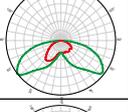
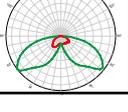
NACTUS PATENT SYSTEM

FIRST AND UNIQUE OPTICAL SYSTEM using **DIFFERENT OPTICS WITH DIFFERENT GEOMETRIES**, combined and set together in the **SAME SYSTEM**.

Any shape, any lighting pattern, any configuration can be realized thanks to its specific optical design that makes NACTUS special and unique.



NACTUS 2X2 STREET LIGHTING

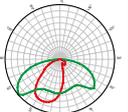
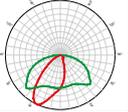
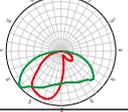
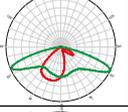
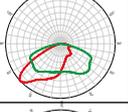
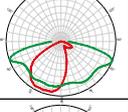
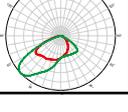
PART #	LEDs	LED TYPE	BEAM	IESNA CLASSIFICATION	EU CLASS.	MOUNTING HEIGHT	ROAD WIDTH	POLE DISTANCE	LONGITUDINAL CLASSIFICATION	CUT OFF	MAX TEMP.
KNAC0401ASM	4	3535 5050		Type IV	Wide Area	5 to 10 m	2.5 MH	NA	Short	Non-Cutoff	+90° C
KNAC0403ASM	4	3535 5050		Type I	P	5 to 10 m	>= 1 MH	4 MH	Medium	Non-Cutoff	+90° C
KNAC0404ASM	4	3535 5050		Type VS	Wide Area	5 to 10 m	1.5 MH	NA	Short	Cutoff	+90° C
KNAC0405ASM	4	3535 5050		Type I	P	Below 5 m	<=1 MH	6 MH	Medium	Semi-Cutoff	+90° C
KNAC0406ASM	4	3535 5050		Type II	M	8 to 12 m	0.7 MH	4 MH	Medium	Semi-Cutoff	+90° C
KNAC0412ASM	4	3535 5050		Type I	P	3 to 5 m	0.5 MH	5 MH	Medium	Semi-Cutoff	+90° C
KNAC0413ASM	4	3535 5050		Type I	P	3 to 5 m	0.5 MH	7 MH	Short	Non-Cutoff	+90° C



EU Class = EU Classification
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EU Street Lighting Classification according to EN 13201:2015
 M: Street & Area lighting, Tunnel Entrance, Highway, Extra-urban roads
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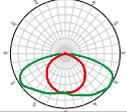
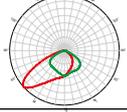
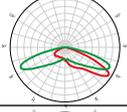
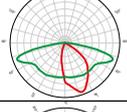
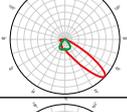
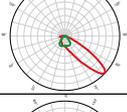
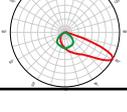
PART #	LEDs	LED TYPE	BEAM	IESNA CLASSIFICATION	EU CLASS.	MOUNTING HEIGHT	ROAD WIDTH	POLE DISTANCE	LONGITUDINAL CLASSIFICATION	CUT OFF	MAX TEMP.
KNAC0424ASM	4	3535		Type III	M	8 to 12 m	>1 MH	4.5 MH	Medium	Semi-Cutoff	+90° C
KNAC0425ASM	4	3535		Type II	M	8 to 12 m	0.5 MH	3.5 MH	Very Short	Semi-Cutoff	+90° C
KNAC0426ASM	4	3535		Type III	M	8 to 12 m	1 MH	4.5 MH	Medium	Cutoff	+90° C
KNAC0428ASM	4	3535 5050		Type II	M	8 to 12 m	1.2 MH	3.5 MH	Medium	Cutoff	+90° C
KNAC0429ASM	4	3535		Type III	M	8 to 12 m	0.8 MH	4 MH	Very Short	Cutoff	+90° C
KNAC0430ASM	4	3535		Type III	M	8 to 12 m	1 MH	4.5 MH	Medium	Non-Cutoff	+90° C
KNAC0431ASM	4	3535 5050		Type I	P	Up to 5 m	0.8 MH	6 MH Staggered	Very Short	Cutoff	+90° C



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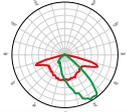
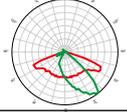
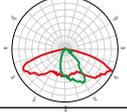
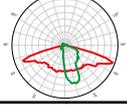
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KNAC0432ASM	4	3535 5050		Type I	P	5 to 10 m	0.8 MH	7 MH Staggered	Short	Semi-Cutoff	+90° C
KNAC0433ASM	4	3535 5050		Type III	M	TUNNEL LIGHTING	NA	NA	Very Short	Semi-Cutoff	+90° C
KNAC0434ASM	4	3535 5050		Type IV	P	5 to 10 m	1 MH	4 MH	Short	Semi-Cutoff	+90° C
KNAC0435ASM	4	3535 5050		Type II	M	8 to 12 m	0.5 MH	4.5 MH	Medium	Non-Cutoff	+90° C
KNAC0436 ASMPMMA	4	3535		Type III	M	TUNNEL LIGHTING	NA	NA	Very Short	Semi-Cutoff	+90° C
KNAC0436ASM	4	3535		Type III	M	TUNNEL LIGHTING	NA	NA	Very Short	Semi-Cutoff	+110° C
KNAC0438ASM	4	3535 5050		Type IV	M	TUNNEL LIGHTING	NA	NA	Very Short	Cutoff	+90° C



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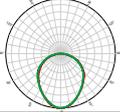
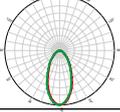
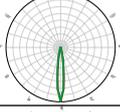
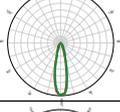
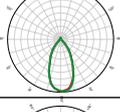
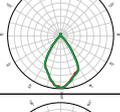
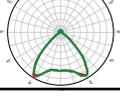
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KNAC0445ASM	4	3535 5050		Type II	M	8 to 12 m	0.8 MH	4 MH	Medium	Semi-Cutoff	+90° C
KNAC0446ASM	4	3535 5050		Type II	M	8 to 12 m	0.8 MH	4 MH	Short	Non-Cutoff	+90° C
KNAC0447ASM	4	3535 5050		Type II	M	8 to 12 m	0.8 MH	4 MH	Short	Non-Cutoff	+90° C
KNAC0448ASM	4	3535 5050		Type II	M	5 to 10 m	0.6 MH	4.5 MH	Short	Non-Cutoff	+90° C



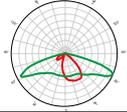
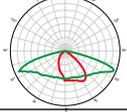
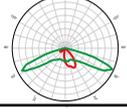
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NACTUS 2X2 ROTOSYMMETRICAL

PART #	LEDs	LED TYPE	BEAM	BEAM ANGLE	FIELD ANGLE	BEAM SHAPE	MAX TEMPERATURE
KNAC0407ASM	4	3535 5050		100°	175°	Round	+90° C
KNAC0420ASM	4	3535 5050		50°	115°	Round	+90° C
KNAC0437ASM	4	3535		15°	30°	Round	+90° C
KNAC0441ASM	4	3535 5050		25°	50°	Round	+90° C
KNAC0442ASM	4	3535 5050		45°	85°	Round	+90° C
KNAC0443ASM	4	3535 5050		65°	90°	Round	+90° C
KNAC0444ASM	4	3535 5050		80°	140°	Round	+90° C

NACTUS 6 STREET LIGHTING

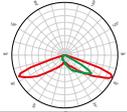
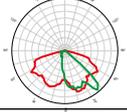
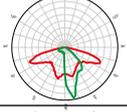
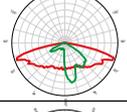
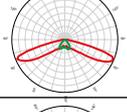
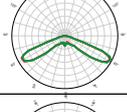
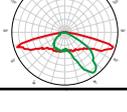
PART #	LEDs	LED TYPE	BEAM	IESNA CLASSIFICATION	EU CLASS.	MOUNTING HEIGHT	ROAD WIDTH	POLE DISTANCE	LONGITUDINAL CLASSIFICATION	CUT OFF	MAX TEMP.
KNAC0601ASM	6	5050		Type II	M	8 to 12 m	0.7 MH	4 MH	Medium	Cutoff	+90° C
KNAC0602ASM	6	5050		Type II	M	8 to 12 m	0.7 MH	4 MH	Medium	Cutoff	+90° C
KNAC0603ASM	6	5050		Type I	P	Up to 5 m	0.8 MH	7 MH Staggered	Short	Cutoff	+90° C



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NACTUS 6X2 STREET LIGHTING

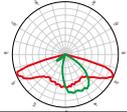
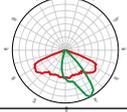
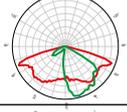
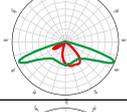
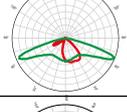
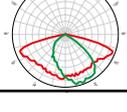
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PLL120005	12	3535 5050		Type III	P	5 to 10 m	0.6 MH	7 MH Staggered	Short	Cutoff	IK06	IPX5	+90° C
PLL120006	12	3535		Type III	M	8 to 12 m	0.7 MH	5 MH	Medium	Semi-Cutoff	IK06	IPX5	+90° C
PLL120007	12	3535 5050		Type II	M	8 to 12 m	0.5 MH	4 MH	Medium	Non-Cutoff	IK06	IPX5	+90° C
PLL120008	12	3535		Type III	M	8 to 12 m	≥ 1 MH	4 MH	Medium	Non-Cutoff	IK06	IPX5	+90° C
PLL120403	12	3535 5050		Type I	P	5 to 10 m	≥ 1 MH	4 MH	Medium	Non-Cutoff	IK06	IPX5	+90° C
PLL120404	12	3535 5050		Type VS	Wide Area	5 to 10 m	1.5 MH	NA	Short	Cutoff	IK06	IPX5	+90° C
PLL120406	12	3535 5050		Type II	M	8 to 12 m	0.7 MH	4 MH	Short	Semi-Cutoff	IK06	IPX5	+90° C



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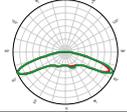
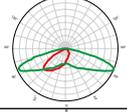
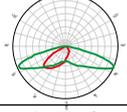
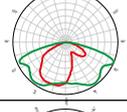
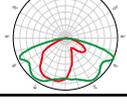
PART #	LEDs	LED TYPE	BEAM	IESNA CLASSIFICATION	EU CLASS.	MOUNTING HEIGHT	ROAD WIDTH	POLE DISTANCE	LONGITUDINAL CLASSIFICATION	CUT OFF	IK	IP	MAX TEMP.
PLL120424	12	3535		Type III	M	8 to 12 m	> 1 MH	4.5 MH	Medium	Semi-Cutoff	IK06	IPX5	+90° C
PLL120425	12	3535		Type II	M	8 to 12 m	0.5 MH	3.5 MH	Very Short	Semi-Cutoff	IK06	IPX5	+90° C
PLL120426	12	3535		Type III	M	8 to 12 m	1 MH	4.5 MH	Medium	Cutoff	IK06	IPX5	+90° C
PLL120428	12	3535 5050		Type II	M	8 to 12 m	1.2 MH	3.5 MH	Medium	Cutoff	IK06	IPX5	+90° C
PLL12900428	12	3535 5050		Type II	M	8 to 12 m	1.2 MH	3.5 MH	Medium	Cutoff	IK06	IPX5	+90° C
PLL121923	12	3535 5050		Type II	M	8 to 12 m	1.2 MH	4 MH	Medium	Semi-Cutoff	IK06	IPX5	+90° C



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 P: Sidewalk & Bicycle Lane Light, Narrow Streets, Residential Light

NACTUS 6X2 SIL STREET LIGHTING

PART #	LEDs	LED TYPE	BEAM	IESNA CLASSIFICATION	EU CLASS.	MOUNTING HEIGHT	ROAD WIDTH	POLE DISTANCE	LONGITUDINAL CLASSIFICATION	CUT OFF	IK	IP	MAX TEMP.
PLL120002SR	12	3535 5050		Type VS	Wide Area	5 to 12 m	2.5 MH	NA	Short	Cutoff	IK10	IPX6	+130° C
PLL120003SR	12	3535 5050		Type II	M	8 to 12 m	0.5 MH	3 MH	Short	Cutoff	IK10	IPX6	+130° C
PLL129003SR	12	3535 5050		Type II	M	8 to 12 m	0.5 MH	3 MH	Short	Cutoff	IK10	IPX6	+130° C
PLL120004SR	12	3535 5050		Type III	M	8 to 12 m	1 MH	4 MH	Short	Cutoff	IK10	IPX6	+130° C
PLL129004SR	12	3535 5050		Type III	M	8 to 12 m	1 MH	4 MH	Short	Cutoff	IK10	IPX6	+130° C

NACTUS 6x2 SIL Optical System is supplied without holder.

The **holders** are optional and will be **supplied only on request** under the following part numbers:

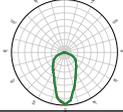
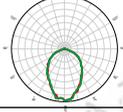
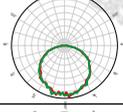
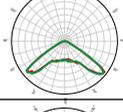
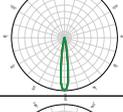
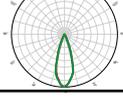
PART #	MATERIAL
KEL12	PPS Natural
KEL12/01	PPS Black
KEL12/ALU	Aluminium



EU Class = EU Classification
MH = Installation Height
Max Temp. = Max Temperature [°C]

EU Street Lighting Classification according to EN 13201:2015
M: Street & Area lighting, Tunnel Entrance, Highway, Extra-urban roads
P: Sidewalk & Bicycle Lane Light, Narrow Streets, Residential Light

NACTUS 6X2 ROTOSYMMETRICAL

PART #	LEDs	LED TYPE	BEAM	BEAM ANGLE	FIELD ANGLE	BEAM SHAPE	IK	IP	MAX TEMPERATURE
PLL120001	12	3535 5050		55°	160°	Round	IK06	IPX5	+90° C
PLL120002	12	3535 5050		80°	160°	Round	IK06	IPX5	+90° C
PLL120003	12	3535 5050		125°	175°	Square	IK06	IPX5	+90° C
PLL120004	12	3535 5050		120°	150°	Square	IK06	IPX5	+90° C
PLL120001TR	12	3535 5050		15°	30°	Round	IK06	IPX5	+90° C
PLL120002TR	12	3535 5050		35°	55°	Round	IK06	IPX5	+90° C

NACTUS 4X2 STREET LIGHTING

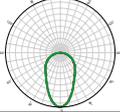
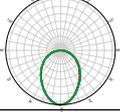
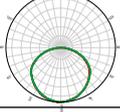
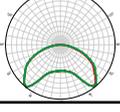
PART #	LEDs	LED TYPE	BEAM	IESNA CLASSIFICATION	EU CLASS.	MOUNTING HEIGHT	ROAD WIDTH	POLE DISTANCE	LONGITUDINAL CLASSIFICATION	CUT OFF	IK	IP	MAX TEMP.
PLL080005	8	3535 5050		Type III	P	5 to 10 m	0.6 MH	7 MH Staggered	Short	Cutoff	-	-	+90° C
PLL080403	8	3535 5050		Type I	P	5 to 10 m	>= 1 MH	4 MH	Medium	Non-Cutoff	-	-	+90° C
PLL080404	8	3535 5050		Type VS	Wide Area	5 to 10 m	1.5 MH	NA	Short	Cutoff	-	-	+90° C
PLL080406	8	3535 5050		Type II	M	8 to 12 m	0.7 MH	4 MH	Short	Semi-Cutoff	-	-	+90° C
PLL080425	8	3535		Type II	M	8 to 12 m	0.5 MH	3.5 MH	Very Short	Semi-Cutoff	-	-	+90° C
PLL080426	8	3535		Type III	M	8 to 12 m	1 MH	4.5 MH	Medium	Cutoff	-	-	+90° C
PLL12801A	8	3535 5050		Type II	M	8 to 12 m	0.7 MH	3.5 MH	Medium	Semi-Cutoff	IK06	IPX5	+90° C
PLL1289001A	8	3535 5050		Type II	M	8 to 12 m	0.7 MH	3.5 MH	Medium	Semi-Cutoff	IK06	IPX5	+90° C



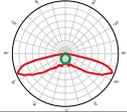
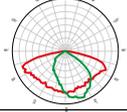
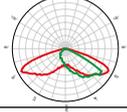
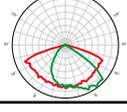
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EU Street Lighting Classification according to EN 13201:2015
 M: Street & Area lighting, Tunnel Entrance, Highway, Extra-urban roads
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NACTUS 4X2 ROTOSYMMETRICAL

PART #	LEDs	LED TYPE	BEAM	BEAM ANGLE	FIELD ANGLE	BEAM SHAPE	MAX TEMPERATURE
PLL080001	8	3535 5050		55°	160°	Round	+90° C
PLL080002	8	3535 5050		90°	160°	Round	+90° C
PLL080003	8	3535 5050		120°	175°	Square	+90° C
PLL080004	8	3535 5050		130°	150°	Square	+90° C

NACTUS SMILE STREET LIGHTING

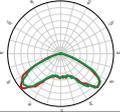
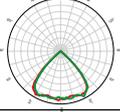
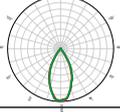
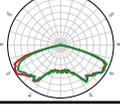
PART #	LEDs	LED TYPE	BEAM	IESNA CLASSIFICATION	EU CLASS.	MOUNTING HEIGHT	ROAD WIDTH	POLE DISTANCE	LONGITUDINAL CLASSIFICATION	CUT OFF	MAX TEMP.
KMF1201M	12	3535		Type I	P	5 to 10 m	1 MH	4 MH Staggered	Short	Cutoff	+85° C
KMF1202M	12	3535		Type II	P	5 to 10 m	>= 1M H	4 MH	Very Short	Cutoff	+85° C
KMF1203M	12	3535		Type III	P	Up to 5 m	2 MH	7 MH	Short	Semi-Cutoff	+85° C
KMF12M3A	12	3535		Type II	P	5 to 10 m	1,5 MH	6 MH	Short	Cutoff	+85° C

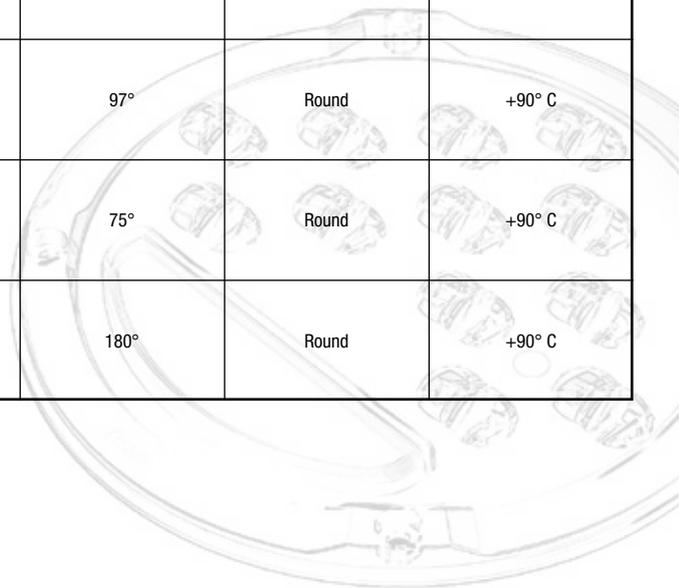


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NACTUS SMILE ROTOSYMMETRICAL

PART #	LEDs	LED TYPE	BEAM	BEAM ANGLE	FIELD ANGLE	BEAM SHAPE	MAX TEMPERATURE
KMF12SQA	12	3535		135°	165°	Square	+90° C
KMF1290A	12	3535		90°	97°	Round	+90° C
KMF1260A	12	3535		60°	75°	Round	+90° C
KMF1205M	12	3535		155°	180°	Round	+90° C





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Khatod optics enable to realize your most demanding applications in LED Lighting.

Pioneer of SILICONE LENSES, unique to OPTICAL SYSTEMS, forerunner of new-concept REFLECTORS, skilled developer of CUSTOM OPTICS. To its customers, Khatod makes available its newest industrial area – 30,000sqm of advanced technology - free of charge technical support, fast deliveries from HQ, corporate sales offices around the world and global distributors of the industry.

Standard products: over 7900 models from stock – optics, optical systems and reflectors – for most popular LEDs, for any kind of applications in LED Lighting. Made from top quality materials – optical grade PMMA for HT, PC HT, ULTRA-CLEAR SILICONE (LSR) – by using exclusive manufacturing processes and superior finishing.

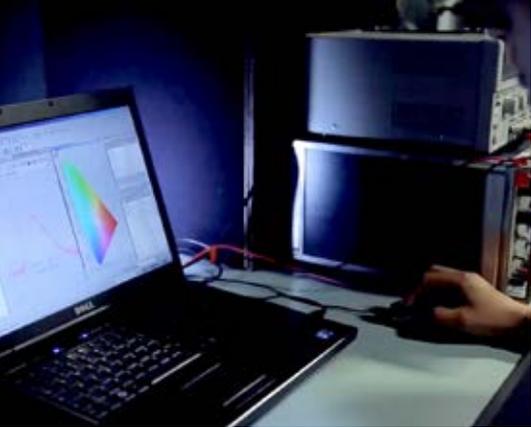
Custom Optics: Khatod started as manufacturer of custom optics when LED Lighting was in its early days. Since then, our lenses have been developing alongside the newest LEDs. Who can offer better expertise than Khatod? The answer is easy: nobody. Unique on the international scene, Khatod develops the entire product process 100% in-house, Milano-Italy. No outsourcing. For your new projects, do not hesitate to contact Khatod. You will find not only a manufacturer of optics, but a real partner in your project.

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